




Identifying the Causal Conditions of Succession Planning with a Human Resource Productivity Approach in the Airports Company of Iran

1. Sadollah. Vatankhah : PhD student in Public Administration - Organizational Behavior, Sar.C., Islamic Azad University, Sari, Iran
2. Mansour. Ranjbar : Associate professor, Education Development Center, Mazandaran University of Medical Sciences, Sari, Iran.
3. Hamed. Fazeli Kebria : Assistant Professor, Department of Management, Payame Noor University, Tehran, Iran

*corresponding author's email: manfm43@gmail.com

ABSTRACT

Given the strategic role of this organization in managing the country's air transportation infrastructure and its high dependence on specialized human capital, the establishment of a systematic framework for leadership continuity and productivity preservation is of critical importance. The present study was conducted with the aim of identifying and explaining the causal conditions of succession planning with an approach toward enhancing human resource productivity in the Airports and Air Navigation Company of Iran. In terms of purpose, the study is applied research, and in terms of methodology, it is a qualitative study based on grounded theory using the Strauss and Corbin paradigmatic approach. Data were collected through a review of scientific literature and semi-structured interviews with 12 associate professors and full professors in the field of public administration who had at least 10 years of specialized experience. Participants were selected through snowball sampling until theoretical saturation was achieved. Data analysis was conducted using open, axial, and selective coding with the aid of MAXQDA 2020 software. The findings revealed that more than 55 initial concepts could be categorized into four main themes, including shortage of replacement personnel and threats to organizational productivity, weaknesses in human resource infrastructure, environmental and professional changes, and inefficiency in the system of talent identification and promotion. In the final analysis, "threats to organizational productivity resulting from weak human resource infrastructure and shortage of replacement personnel" were identified as the core causal condition. This finding indicates that succession planning in this organization is not merely a developmental initiative, but rather a strategic response to operational, technological, and managerial challenges. The implementation of an integrated, merit-based, and knowledge-oriented system can therefore enhance human resource productivity and ensure the sustainability of organizational performance.

Keywords: Succession planning, Human resource productivity, Causal conditions, Leadership continuity

Introduction

Succession planning has become one of the central concerns of contemporary human resource management because organizations increasingly operate in environments characterized by knowledge intensity, technological transformation, demographic shifts, managerial complexity, and intensified performance expectations. In such contexts, the continuity of leadership and the availability of competent replacement personnel are no longer merely administrative issues; rather, they represent strategic requirements for sustaining organizational productivity,



Article history:
Received 19 December 2024
Revised 18 March 2025
Accepted 22 March 2025
Published online 01 April 2025

How to cite this article:

Vatankhah, S., Ranjbar, M., & Fazeli Kebria, H. (2025). Identifying the Causal Conditions of Succession Planning with a Human Resource Productivity Approach in the Airports Company of Iran. *Journal of Management and Business Solutions*, 3(2), 1-15. <https://doi.org/10.61838/jmbs.343>



© 2025 the authors. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

institutional memory, operational resilience, and long-term performance. Organizations that fail to identify, develop, and retain capable successors are exposed to leadership gaps, discontinuity in decision-making, loss of tacit knowledge, decline in employee motivation, and reduced human resource productivity. Accordingly, succession planning is increasingly understood as a systematic process through which organizations identify key positions, recognize high-potential employees, develop future leaders, and align human capital development with strategic objectives (1, 2).

In management literature, succession planning is defined as an organized and future-oriented mechanism for ensuring that qualified individuals are prepared to fill critical organizational roles when vacancies occur. This process involves more than the simple replacement of managers; it includes talent identification, competency assessment, career development, knowledge transfer, leadership preparation, and strategic workforce planning. Effective succession planning therefore connects human resource management with organizational strategy and enables institutions to respond proactively to managerial turnover, retirement, unexpected departures, and environmental changes. In this regard, succession planning is closely linked to organizational sustainability because it reduces vulnerability to leadership discontinuity and creates a structured pathway for the development of internal talent (2, 3).

Human resource productivity is another fundamental concept in organizational management and refers to the extent to which employees' knowledge, skills, motivation, and capabilities are effectively transformed into valuable organizational outcomes. Human resource productivity is not limited to individual performance but also reflects the efficiency and effectiveness of human capital systems, including recruitment, training, development, motivation, retention, performance evaluation, and knowledge management. From this perspective, productivity depends on the organization's ability to deploy human resources in positions where their competencies generate maximum value. When organizations lack systematic mechanisms for identifying and developing capable personnel, productivity is weakened because employees may not be prepared for strategic roles, knowledge may not be transferred effectively, and managerial continuity may be disrupted (4-7).

The relationship between succession planning and human resource productivity is particularly important in organizations that depend heavily on specialized knowledge and operational expertise. In such organizations, experienced managers and technical experts hold significant tacit knowledge that cannot be easily replaced through external recruitment. If this knowledge is not documented, transferred, and institutionalized, the departure or retirement of key personnel can create serious productivity gaps. Therefore, succession planning contributes to productivity by preserving institutional knowledge, strengthening competency-based promotion, reducing the costs of managerial vacancies, and increasing employees' motivation through visible career development pathways. Evidence from organizational studies confirms that succession planning can improve human resource productivity and organizational performance by creating a more stable and prepared workforce (8, 9).

The importance of succession planning becomes more evident when organizations face demographic changes and the retirement of experienced managers. In many public and specialized organizations, a large portion of managerial and professional expertise is concentrated among senior employees who are approaching retirement. The absence of a structured replacement system may lead to gaps in leadership, loss of organizational memory, reduced operational coordination, and increased dependence on a limited number of individuals. Such dependence is risky because the organization's performance becomes vulnerable to the absence, transfer, resignation, or

retirement of a few key employees. In this sense, succession planning functions as a risk management mechanism that protects organizational productivity by ensuring continuity in strategic and operational positions (1, 3).

Recent developments in human resource management also show that succession planning should be integrated with talent management. Talent management emphasizes the identification, attraction, development, retention, and deployment of employees who possess high potential for future organizational roles. Succession planning provides the structural framework through which these talents are prepared for key positions. Without integration between succession planning and talent management, organizations may fail to recognize capable employees, promotion decisions may become subjective, and career development may lack coherence. In public-sector organizations, where bureaucratic structures and formal promotion systems may limit flexibility, the connection between human resource practices, talent management, and succession planning is especially important for enhancing efficiency, accountability, and productivity (10).

In addition to talent management, competency-based human resource systems play a crucial role in effective succession planning. Competency models provide a clear framework for identifying the knowledge, skills, abilities, behavioral indicators, and managerial capacities required for key positions. When succession planning is based on competency models, the organization can evaluate employees more objectively, design targeted development programs, and ensure alignment between individual capabilities and organizational needs. In this regard, productivity is enhanced because employees are not promoted merely based on tenure or informal preferences, but based on measurable competencies and readiness for future responsibilities. The development of comprehensive competency models has therefore been recognized as an important requirement for improving organizational productivity and strengthening the quality of human resource decisions (9, 11).

The significance of succession planning is not restricted to business organizations; it is also highly relevant in public, governmental, educational, healthcare, industrial, and service organizations. For example, studies in healthcare and education have emphasized that succession planning can support the development of human capital and improve organizational preparedness for future leadership needs (5, 12). Similarly, research in the defense industry has shown that the success of succession planning depends on identifying and prioritizing organizational, managerial, cultural, and human factors that influence the development of successors (11). These findings demonstrate that succession planning is a cross-sectoral managerial necessity and must be adapted to the structural and strategic conditions of each organization.

In strategic management, succession planning is also viewed as an investment decision. Preparing future leaders requires time, financial resources, managerial attention, developmental opportunities, and institutional commitment. However, the outcomes of this investment may be uncertain because employees may leave the organization, external conditions may change, or selected successors may not perform as expected. Nevertheless, the absence of succession planning may impose even greater costs, including leadership vacancies, operational disruption, reduced productivity, and weakened organizational adaptability. Therefore, organizations must balance the anticipated costs and uncertain outcomes of succession planning against the risks associated with unprepared leadership transitions (3).

The contemporary environment has also transformed the nature of succession planning through digitalization, artificial intelligence, and predictive analytics. Human resource digitalization under Industry 4.0 has introduced new tools for workforce planning, talent identification, performance monitoring, competency assessment, and leadership development. Artificial intelligence can support human resource decision-making by analyzing workforce data,

identifying potential successors, predicting future skill requirements, and improving the accuracy of development planning. However, the sustainable integration of artificial intelligence in human resource management requires ethical, organizational, and strategic readiness so that technology supports rather than replaces human judgment (13). Predictive analytics can further strengthen succession planning by enabling organizations to forecast workforce needs, identify leadership gaps, and align human resource development with future organizational scenarios (14).

Knowledge-based human resource productivity is another emerging dimension that directly relates to succession planning. In knowledge-intensive organizations, productivity depends not only on employee effort but also on the generation, sharing, retention, and application of knowledge. A knowledge-based approach to human resource productivity emphasizes learning, innovation, documentation of experience, and the transformation of individual expertise into organizational capability. Succession planning contributes to this process by ensuring that knowledge is transferred from experienced personnel to future successors and by preventing the loss of critical expertise. Therefore, a comprehensive model of knowledge-based productivity must consider succession planning as a mechanism for preserving and reproducing strategic human capital (15).

Organizational change readiness is also relevant to succession planning because leadership transition requires cultural, structural, and psychological preparedness. Organizations may formally recognize the importance of succession planning but still resist its implementation due to uncertainty, political considerations, lack of trust, weak communication, or fear of losing authority. Change readiness refers to the extent to which organizational members are prepared, willing, and able to support a planned change. In the context of succession planning, readiness is reflected in managerial commitment, transparency of promotion pathways, acceptance of competency-based evaluation, willingness to mentor successors, and support for knowledge transfer. Studies on succession in mission-driven organizations have shown that continuity depends not only on identifying successors but also on preparing the organization for transition (16).

For organizations operating in specialized and safety-sensitive industries, such as aviation, transportation, energy, healthcare, and defense, succession planning has even greater strategic importance. These organizations depend on high levels of technical expertise, regulatory compliance, operational precision, and rapid decision-making. In such environments, leadership gaps or insufficiently prepared successors can negatively affect service continuity, safety, efficiency, and stakeholder trust. The Airports Company of Iran, as an organization responsible for managing critical air transportation infrastructure, is highly dependent on specialized human capital, experienced managers, operational experts, and technical personnel. Therefore, the absence of a systematic succession planning model may threaten not only managerial continuity but also the productivity and sustainability of human resources.

The causal conditions of succession planning refer to the underlying factors that create the need for developing and implementing a succession planning system. These conditions may include retirement of experienced managers, shortage of capable replacement personnel, weak human resource infrastructure, lack of coherent career development pathways, inadequate knowledge management, managerial instability, technological changes, increased organizational missions, and inefficient systems for identifying and promoting talent. Identifying these causal conditions is important because succession planning cannot be designed effectively without understanding the organizational problems and pressures that make it necessary. In grounded theory, causal conditions explain why a central phenomenon emerges and what structural or contextual factors lead to its formation. Therefore,

examining the causal conditions of succession planning provides a deeper understanding of the roots of human resource productivity challenges.

In the case of the Airports Company of Iran, several causal conditions may intensify the need for succession planning. First, the retirement of experienced managers can create a shortage of capable replacement personnel and weaken continuity in organizational performance. Second, if career development paths are unclear, talented employees may become discouraged or leave the organization, thereby reducing productivity. Third, if the organization relies excessively on specific individuals, the absence or transfer of these individuals can create operational vulnerabilities. Fourth, technological transformations and regional competition in air transportation require agile, prepared, and knowledgeable employees. Fifth, weak knowledge management and the lack of documentation of experienced employees' expertise can lead to the loss of human capital. These conditions collectively indicate that succession planning should be treated as a strategic response to productivity threats rather than a routine administrative practice.

The literature also suggests that succession planning must be context-specific. A generic succession planning model may not adequately respond to the particular requirements of specialized public organizations. For this reason, identifying causal conditions within a specific organizational context is necessary for designing an appropriate model. In the Airports Company of Iran, the integration of succession planning with human resource productivity requires attention to organizational mission, technical specialization, managerial continuity, knowledge transfer, and performance-based development. The model should therefore be merit-based, knowledge-oriented, and aligned with the strategic requirements of the aviation infrastructure sector.

Despite the growing body of literature on succession planning and human resource productivity, several gaps remain. Many studies have examined succession planning as a general human resource practice, while fewer have focused specifically on its causal conditions in specialized infrastructure organizations. Moreover, although previous studies have shown the positive relationship between succession planning and productivity, there is still a need to identify the specific organizational, environmental, and managerial factors that make succession planning necessary in the Airports Company of Iran (4, 8, 10). Addressing this gap can contribute to both theory and practice by clarifying how human resource productivity challenges create the need for succession planning and how organizations can design more effective systems for leadership continuity.

Therefore, the present study aims to identify the causal conditions of succession planning with a human resource productivity approach in the Airports Company of Iran.

Methods and Materials

The present study was applied in terms of purpose and qualitative in terms of methodology. It was conducted using the grounded theory approach based on the Strauss and Corbin paradigmatic model. In the first stage, the researcher identified and collected the dimensions of succession planning with a human resource productivity approach through an in-depth review of scientific resources, including specialized books and journal articles, as well as semi-structured interviews with experts. The data obtained from the interviews were analyzed using the constant comparative analysis method, whereby the data were coded and compared simultaneously with data collection in order to extract the main concepts and categories. The coding process proceeded concurrently with the interviews and continued until theoretical saturation was achieved. The stages of analysis included open coding

for extracting initial concepts, axial coding for identifying relationships among categories and determining the core category, and selective coding for integrating categories and developing the theoretical framework.

The statistical population consisted of associate professors and full professors in the field of public administration with at least 10 years of specialized experience in succession planning and human resource productivity. Participants were selected using snowball sampling, and ultimately 12 experts were interviewed until theoretical saturation was reached. Data collection instruments included note-taking from theoretical foundations and semi-structured interviews. The average duration of each interview was approximately 60 minutes. Following the extraction of indicators, the initial questionnaire was developed and revised through several stages until finalization. To ensure the validity of the findings, techniques such as member checking, peer review, and expert participation in the analysis process were employed. Qualitative data analysis was conducted using MAXQDA 2020 software.

Findings and Results

This section is devoted to the analysis, interpretation, and presentation of the findings derived from the research data. The primary purpose of this section is to address the research questions through the systematic examination of the collected information. The present study was conducted with the aim of identifying the causal conditions of succession planning with a human resource productivity approach in the Airports Company of Iran. To achieve this objective, the required data were collected using a qualitative method through semi-structured interviews with experts.

Table 1. Coding of Concepts Mentioned in the Interviews Regarding the Dimension of Causal Conditions

Expert Code	Complete Response of Experts	Open Coding	Axial Coding
Expert 1	One of the main reasons is the widespread retirement of experienced managers and the shortage of capable replacement personnel. This issue has created concern regarding the continuity of organizational performance and has intensified the need for succession planning. Productivity has also declined due to this gap.	Retirement of experienced managers (1), shortage of capable replacement personnel (2), concern about continuity of performance (3), decline in productivity caused by succession gaps (4)	Shortage of replacement personnel, threat to organizational productivity
Expert 2	Lack of coherence in career development paths has discouraged capable employees or caused them to leave the organization. This situation not only reduces productivity but also makes the company vulnerable to managerial changes. Succession planning has become a strategic necessity.	Lack of coherence in career growth paths (5), discouragement of capable employees (6), departure of talented employees from the organization (7), vulnerability to managerial changes (8), decline in productivity (9)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 3	Due to the increasing operational and specialized challenges in the airport industry, only well-prepared employees can perform productively. The absence of a succession plan has slowed the organization's response to environmental changes.	Operational and specialized challenges (10), insufficient employee preparedness (11), absence of a succession plan (12), slowed organizational response (13)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 4	One important factor is excessive reliance on specific individuals and the absence of a systematic replacement system. This dependency has caused organizational productivity to be affected by the sudden absence or transfer of these individuals. Succession planning is a logical response to this problem.	Reliance on specific individuals (14), absence of a systematic replacement system (15), negative impact of sudden employee absence (16), decline in organizational productivity (17)	Shortage of replacement personnel, threat to organizational productivity
Expert 5	Technological transformations and increased regional competition in air transportation require the organization to employ agile and prepared personnel. The absence of succession planning has caused the organization to lag behind innovation trends and reduced productivity.	Technological transformation (18), increased regional competition (19), need for agile workforce (20), absence of succession planning (21), lagging behind innovation (22), decline in productivity (23)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 6	Weakness in knowledge management is one of the key reasons for the need for succession planning.	Weakness in knowledge management (24), undocumented experiences (25),	Weakness in human resource

	The information and experiences of senior employees have not been documented, and with their departure, a significant part of human capital is lost. Succession planning enhances productivity through knowledge preservation.	loss of human capital (26), departure of experienced employees (27), knowledge preservation for enhancing productivity (28)	infrastructure, threat to organizational productivity
Expert 7	Human resource development processes in the organization have mainly focused on general training rather than targeted development of successors. This gap has reduced productivity at key organizational levels. The need for succession planning stems from this structural weakness.	Focus on general training (29), absence of targeted development for successors (30), gap in development at key levels (31), decline in productivity at key levels (32)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 8	Managerial instability in recent years has reduced morale and increased the departure of talented employees. Succession planning, with a focus on productivity, can contribute to organizational stability and increase the motivation of internal employees.	Managerial instability (33), decline in employee morale (34), increased departure of talented employees (35), organizational stabilization (36), increased motivation (37)	Shortage of replacement personnel, threat to organizational productivity
Expert 9	The Airports Company has faced expansion of activities and increased specialized missions, but human capital development has not kept pace with these changes. This imbalance has affected productivity and highlighted the need for succession planning.	Expansion of activities (38), increase in specialized missions (39), insufficient development of human capital (40), imbalance in human resource development (41), decline in productivity (42)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 10	The gap between experienced employees and the younger generation has disrupted the transfer of experience. The absence of succession planning has reduced effective informal learning. This issue has weakened operational productivity.	Generational gap (43), disruption in experience transfer (44), absence of succession planning (45), decline in informal learning (46), weakening of operational productivity (47)	Shortage of replacement personnel, threat to organizational productivity
Expert 11	Lack of transparency in promotion paths and the absence of coherent performance indicators have caused capable employees to be less recognized and promoted. This weakness is directly reflected in the productivity system and has made succession planning an urgent necessity.	Lack of transparency in promotion paths (48), absence of coherent performance indicators (49), failure to identify capable employees (50), weakness in the productivity system (51)	Weakness in human resource infrastructure, threat to organizational productivity
Expert 12	In recent years, developmental projects in the Airports Company have increased, but no clear plan has been established for providing capable managerial personnel. This inconsistency threatens human resource productivity and creates the need for targeted succession planning.	Increase in developmental projects (52), absence of a managerial staffing plan (53), inconsistency between development and human resources (54), threat to human resource productivity (55)	Weakness in human resource infrastructure, threat to organizational productivity

During the axial coding stage, the key statements in each response were first identified, and the related concepts were extracted. Each concept was assigned a semantic label representing the underlying theme of the statement. In general, concepts such as “retirement of managers,” “absence of career development paths,” “reliance on specific individuals,” “managerial instability,” “disruption in experience transfer,” “weakness in knowledge management,” “technological transformation,” and “lack of development in parallel with organizational activities” were among the most frequently repeated issues in the experts’ responses. In total, more than 55 independent concepts were identified and coded.

In the next step, similar and aligned concepts were grouped into conceptual or thematic categories. These categories represented the causal dimensions leading to the need for succession planning. Four main themes emerged from the analysis of the responses:

1. Shortage of replacement personnel and threats to organizational productivity, including widespread retirement, generational gaps, reliance on specific individuals, departure of talented employees, and managerial instability.
2. Weakness in human resource infrastructure and threats to organizational productivity, including lack of coherence in career growth paths, weakness in targeted development, absence of succession planning, lack of knowledge management, and inconsistency with project development.

3. Environmental and specialized transformations requiring organizational agility, including operational challenges, emerging technologies, regional competition, and the necessity of utilizing agile personnel.
4. Inefficiency in the talent identification and promotion system, including lack of transparency in promotion paths and absence of coherent performance indicators.

Among these themes, the first two had the highest frequency in the responses, and nearly all experts referred to them in some way.

The final analysis demonstrated that “threats to organizational productivity due to weak human resource infrastructure and shortage of replacement personnel” emerged as the core causal condition in the responses. Nearly all experts indicated that productivity at various organizational levels was directly influenced by the absence of succession planning, weakness in talent management, and lack of a structured framework for transferring experience. Therefore, from their perspective, the need for succession planning is not merely a managerial necessity but also a strategic response for preserving and enhancing human resource productivity.

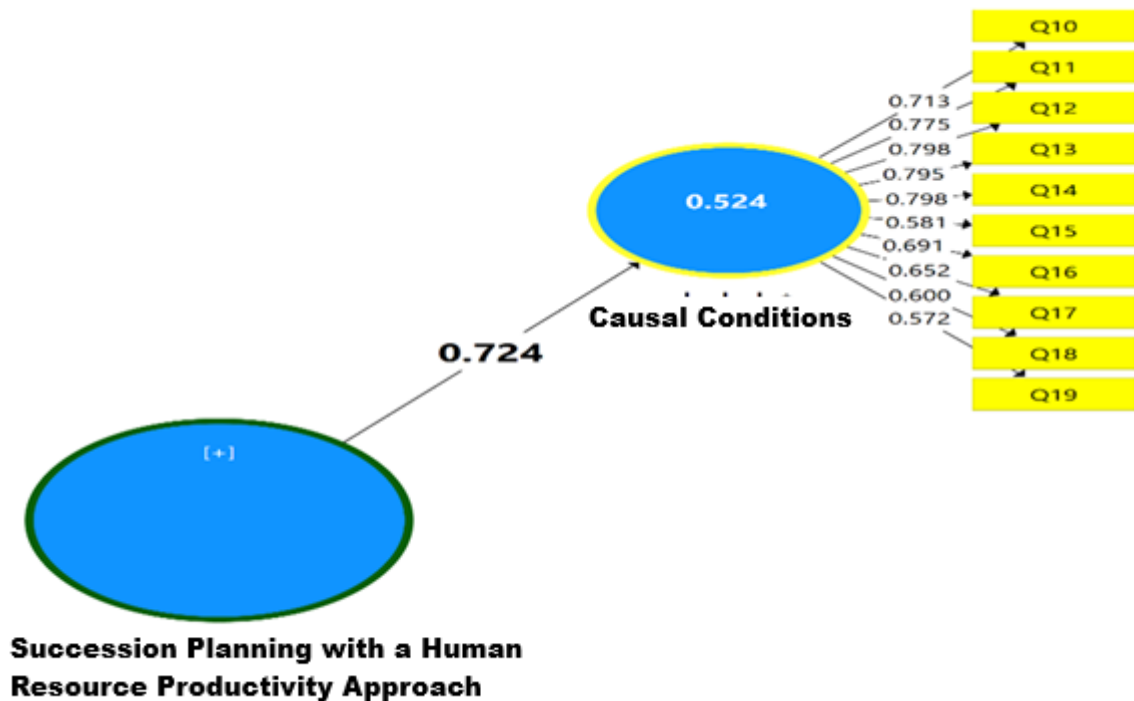


Figure 1. Relationship Between Causal Conditions and Succession Planning with a Human Resource Productivity Approach in the Airports Company of Iran in the Path Coefficient Estimation Model

Table 2. Path Coefficients of the Indicators Related to the Dimension of Causal Conditions

Indicators	Path Coefficient
The widespread retirement of experienced managers and the shortage of capable replacement personnel have increased the need for succession planning in the organization.	0.713
Lack of coherence in career development paths has discouraged talented employees and reduced organizational productivity.	0.775
The operational and specialized challenges of the airport industry have highlighted the necessity of a comprehensive succession planning program for enhancing productivity.	0.798
Excessive reliance on specific individuals and the absence of a systematic replacement system have put organizational productivity at risk.	0.795
Technological transformations and regional competition have increased the need for agile and prepared personnel, and the absence of succession planning has reduced productivity.	0.798

Weakness in knowledge management and documentation of experienced employees' expertise has reduced productivity and increased the need for succession planning.	0.581
Greater emphasis on general training rather than targeted development of successors has reduced productivity at key organizational levels.	0.691
Managerial instability has reduced motivation and increased the departure of talented employees, thereby increasing the necessity of succession planning.	0.652
Expansion of organizational activities and specialized missions without simultaneous development of human capital has affected productivity.	0.600
The gap between different generations of employees and the absence of a structured experience transfer program have weakened the organization's operational productivity.	0.572

Based on the data derived from structural equation modeling, the relationship between the variable “causal conditions” and the main variable “succession planning” in the Airports Company of Iran was found to be highly strong and significant. The path coefficient of 0.724 indicates that the causal conditions existing within the organization are capable of explaining and predicting approximately 72% of the changes in succession planning. Furthermore, the R^2 value of 0.524 demonstrates that these causal conditions account for more than half (52%) of the variance in succession planning. This confirms that the identified environmental and organizational factors are among the primary prerequisites and driving forces for the successful formation and implementation of succession planning programs in the company.

A closer examination of the indicators and their path coefficients with the causal conditions dimension provides a clear picture of the organizational challenges. The highest path coefficient (0.798) was jointly related to two indicators: “operational and specialized challenges of the airport industry” and “technological transformations and regional competition.” These findings indicate that the complex, specialized, and evolving nature of the aviation industry, along with competitive pressures and rapid technological changes, are the most significant factors driving the organization toward establishing a succession planning system.

The next highest coefficient belonged to the indicator “excessive reliance on specific individuals and the absence of a systematic replacement system” with a coefficient of 0.795, indicating the organization's vulnerability to individual dependency and the risks arising from managerial gaps. The indicator “lack of coherence in career development paths” with a coefficient of 0.775 also suggests that the absence of clear promotion paths discourages talented employees and creates an increasing need for reforming succession planning processes. The indicator “widespread retirement of experienced managers” with a coefficient of 0.713 further highlights the inevitable necessity of transferring expertise and experience.

In contrast, indicators such as “generational gaps” (0.572) and “weakness in knowledge management” (0.581) had lower coefficients. Although these factors are also influential, they are considered less critical than specialized and operational pressures and the risks associated with dependence on individuals in explaining the causal conditions. Overall, the analysis of these data demonstrates that the causal conditions in the Airports Company of Iran are primarily rooted in “operational needs, risks of individual dependency, and environmental pressures.” Therefore, the design of a succession planning system must directly respond to these challenges in order to fill managerial and specialized gaps and ensure human resource productivity.

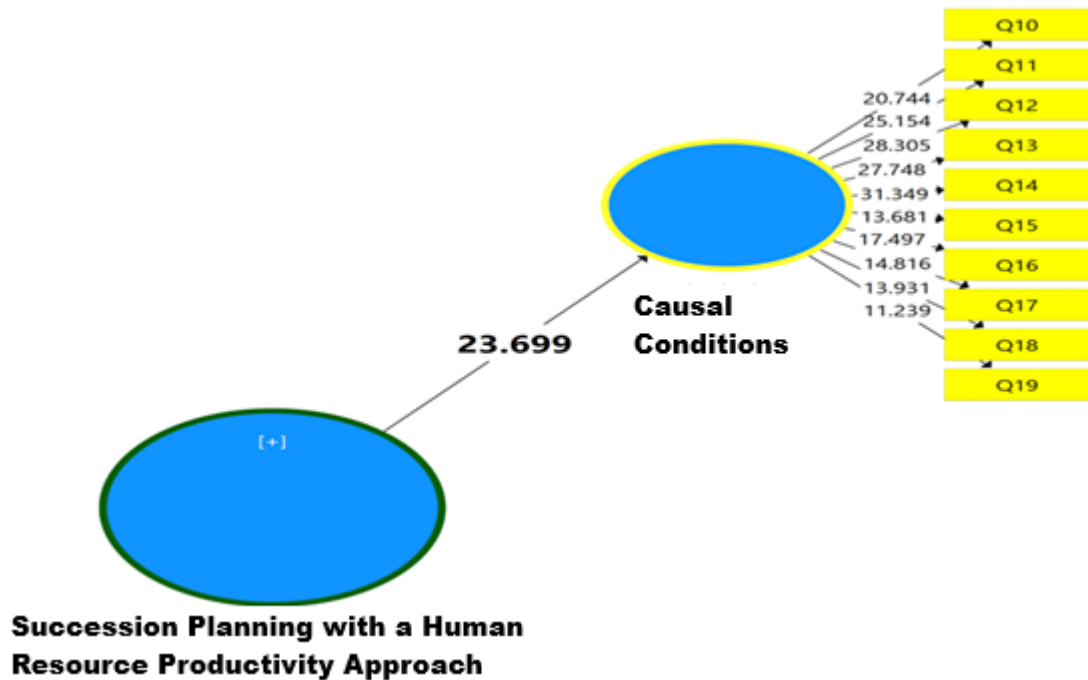


Figure 2. Relationship Between the Variable of Succession Planning with a Human Resource Productivity Approach in the Airports Company and the Dimension of Causal Conditions in the Significance Model of Path Coefficients

The t-value of 23.699 in examining the relationship between the variable “causal conditions” and the main variable “succession planning” in the Airports Company of Iran indicates one of the strongest and most statistically significant relationships in the research model. In statistical analysis and structural equation modeling, the critical t-value for confirming significance at the 95% confidence level is generally considered 1.96, while for the 99% confidence level it is approximately 2.58. Since the calculated value in the present study (23.699) is substantially higher than these standard thresholds, it can be concluded with a very high degree of confidence that the relationship between causal conditions and succession planning is statistically confirmed and undeniable.

This extremely high t-value, together with the path coefficient of 0.724 reported earlier, reflects a deep and structural relationship between these two variables. In other words, the environmental and organizational conditions existing in the Airports Company—such as specialized challenges, managerial retirements, and dependence on specific individuals—serve as powerful and determining predictors in the establishment and development of a succession planning system. The probability that such a relationship has occurred due to chance or sampling error is almost zero.

From a managerial perspective, this statistic emphasizes that succession planning in this organization is not an optional choice or merely an administrative trend, but rather an unavoidable necessity and a logical response to the existing pressures and causal conditions. The strength of this relationship demonstrates that any effort aimed at improving human resource productivity without considering and addressing these causal conditions will be ineffective. Therefore, the research hypothesis regarding the significant effect of causal conditions on succession planning is confirmed with the strongest statistical evidence, and managers should pay particular attention to eliminating these challenges in order to ensure the proper implementation of the succession planning system.

Discussion and Conclusion

The findings of the present study demonstrated that the causal conditions of succession planning with a human resource productivity approach in the Airports Company of Iran are primarily rooted in structural weaknesses in human resource infrastructure, shortage of capable replacement personnel, environmental and technological pressures, and inefficiencies in talent identification and promotion systems. The results indicated that the relationship between causal conditions and succession planning was highly significant, with a strong path coefficient and a high t-value, suggesting that organizational and environmental conditions play a determining role in shaping and implementing succession planning systems. These findings confirm that succession planning in specialized organizations is not merely an administrative or developmental activity, but rather a strategic necessity directly linked to organizational productivity, operational continuity, and sustainability of human capital.

One of the most important findings of the study was that “operational and specialized challenges of the airport industry” and “technological transformations and regional competition” had the highest path coefficients among the identified indicators. This finding indicates that the highly dynamic, specialized, and technology-driven nature of the aviation industry has intensified the need for structured succession planning. Airports and aviation organizations operate in environments characterized by rapid technological advancement, strict safety standards, operational complexity, and continuous regulatory changes. Under such conditions, organizations require agile, knowledgeable, and adaptable human resources capable of responding effectively to emerging challenges. Therefore, succession planning becomes a mechanism through which organizations can ensure the continuity of specialized expertise and managerial capability. This finding is aligned with the perspective presented by (13), who emphasized that the integration of digitalization and artificial intelligence in human resource systems under Industry 4.0 requires organizations to redesign workforce planning and prepare future leaders capable of operating in technologically advanced environments. The results are also consistent with the arguments of (14), who highlighted the role of predictive analytics and workforce planning in preparing organizations for future operational and environmental uncertainties.

Another important finding of the study was the significant effect of excessive reliance on specific individuals and the absence of a systematic replacement system on organizational productivity. The results revealed that dependency on a limited number of experienced managers or specialists creates organizational vulnerability and increases the risks associated with leadership gaps, sudden departures, or retirement. In highly specialized organizations such as the Airports Company of Iran, the concentration of tacit knowledge and operational expertise in a few individuals may threaten continuity of performance if no formal succession mechanism exists. This finding supports the arguments proposed by (3), who described succession planning as a risky but necessary investment for reducing organizational exposure to uncertainty and leadership discontinuity. The present findings suggest that succession planning functions as a strategic risk management mechanism because it reduces dependence on individuals and institutionalizes organizational knowledge and competencies.

The study also showed that the lack of coherence in career development paths and the weakness of human resource infrastructure significantly contributed to the need for succession planning. The absence of transparent promotion systems, structured developmental pathways, and competency-based growth opportunities discourages talented employees and weakens organizational commitment. When employees perceive that advancement is unclear or unrelated to merit, motivation and productivity decline, and organizations may lose capable personnel.

This result is consistent with the findings of (10), who emphasized the close relationship between talent management practices, human resource systems, and succession planning in public-sector organizations. Their study demonstrated that succession planning becomes more effective when integrated with structured human resource practices that support talent identification, employee development, and organizational sustainability.

The findings further demonstrated that weak knowledge management and inadequate documentation of employee experience were among the key causal conditions influencing succession planning. In organizations where the experiences and expertise of senior employees are not systematically documented or transferred, retirement or departure of experienced staff may lead to irreversible loss of organizational knowledge. This issue is particularly important in operational and technical organizations such as airports, where practical experience and tacit knowledge play a major role in organizational performance. The present finding is consistent with the knowledge-based approach to human resource productivity proposed by (15), who argued that productivity in modern organizations depends heavily on the generation, preservation, and transfer of knowledge. The current study confirms that succession planning contributes to productivity not only by replacing managers, but also by preserving strategic knowledge and institutional memory.

Another significant finding of the study was related to managerial instability and the departure of talented employees. The results indicated that instability in managerial systems reduces employee morale, weakens trust in organizational structures, and increases turnover among skilled personnel. Under such circumstances, succession planning can enhance organizational stability by creating confidence regarding leadership continuity and career advancement opportunities. This finding supports the view of (16), who emphasized that organizational readiness for leadership transition depends on cultural and structural preparedness as well as employees' confidence in the continuity of organizational direction. The current study demonstrates that succession planning contributes to organizational stabilization by reducing uncertainty and strengthening employees' perception of fairness and continuity.

The study also identified the expansion of organizational activities and specialized missions without simultaneous development of human capital as a major factor influencing the need for succession planning. The Airports Company of Iran has experienced increasing operational responsibilities and developmental projects, yet the growth of managerial and specialized human resources has not always progressed at the same pace. This imbalance creates pressure on existing personnel and may reduce organizational productivity. The finding aligns with the perspective of (7), who argued that productivity management requires continuous alignment between organizational development and human resource capacity. Similarly, (6) emphasized that productivity in human resource systems depends on the organization's ability to coordinate workforce development with strategic and operational expansion.

The findings regarding the shortage of capable replacement personnel and widespread retirement of experienced managers also support previous research on succession planning and organizational sustainability. The retirement of experienced managers was identified as one of the strongest causal conditions leading to the need for succession planning. This issue reflects the demographic and structural challenges faced by many organizations where experienced leaders are approaching retirement while younger employees may not yet possess the competencies required for critical positions. The results are consistent with the study by (2), which emphasized that succession planning is a central mechanism for ensuring organizational sustainability and continuity in the face of workforce transitions. Likewise, (1) argued that effective succession planning enables

organizations to reduce leadership gaps and maintain organizational effectiveness during periods of managerial change.

The present study also reinforces the relationship between succession planning and human resource productivity. The findings showed that the identified causal conditions significantly affect productivity because they influence the organization's ability to maintain operational continuity, preserve expertise, motivate employees, and develop capable successors. Human resource productivity is weakened when organizations lack coherent developmental systems, transparent promotion mechanisms, and effective talent management practices. This finding is aligned with the conclusions of (8), who found that succession planning positively influences human resource productivity and organizational performance. The current study extends this perspective by demonstrating that the need for succession planning itself emerges from productivity-related pressures and organizational weaknesses.

Furthermore, the results support competency-based approaches to productivity management. The identified causal conditions, such as lack of coherent career pathways and ineffective talent identification systems, indicate that organizations require structured competency models to guide succession decisions. Competency-based systems enable organizations to identify high-potential employees, assess readiness for future roles, and design targeted developmental programs. This interpretation is supported by (9), who emphasized the importance of comprehensive competency models for improving organizational productivity and strengthening human resource systems. Similarly, the findings are consistent with the work of (11), who identified organizational and managerial factors influencing the success of succession planning in specialized industries.

The findings of the present study also highlight the strategic nature of succession planning in contemporary organizations. Succession planning is no longer limited to replacing managers after retirement or resignation; rather, it is connected to organizational resilience, adaptability, and sustainability. In environments characterized by rapid technological change, increasing competition, workforce transformation, and growing complexity, organizations must develop future-oriented human resource systems capable of preparing leaders for emerging challenges. The Airports Company of Iran, due to its operational sensitivity and dependence on specialized expertise, requires a systematic and integrated succession planning model that aligns leadership development with organizational productivity objectives. This interpretation is consistent with the broader literature on strategic human resource management and workforce sustainability (3, 13).

Overall, the findings of the study demonstrate that the causal conditions of succession planning in the Airports Company of Iran are multidimensional and interconnected. Structural weaknesses in human resource systems, technological and environmental pressures, retirement of experienced managers, lack of knowledge management, and inefficiencies in talent identification collectively create conditions that threaten organizational productivity and increase the necessity of succession planning. Therefore, succession planning should be viewed as a strategic and productivity-oriented system designed to preserve organizational knowledge, ensure continuity of expertise, reduce dependence on individuals, strengthen employee motivation, and support sustainable organizational development. The strong statistical relationship observed between causal conditions and succession planning confirms that improving human resource productivity in specialized organizations is highly dependent on the establishment of coherent, integrated, and competency-based succession planning systems.

One of the limitations of the present study was that the data were collected exclusively from experts and university professors in the field of public administration, which may have limited the diversity of managerial and operational

perspectives. In addition, the study focused specifically on the Airports Company of Iran, and therefore the findings may not be fully generalizable to other industries or organizational contexts. Another limitation was the qualitative nature of the initial data collection process, which depended on participants' subjective experiences and interpretations. Time limitations and restricted access to a broader range of organizational managers and specialists also constrained the scope of data collection.

Future research is recommended to examine succession planning and human resource productivity in other strategic and specialized industries such as healthcare, energy, transportation, and defense in order to compare causal conditions across organizational contexts. Researchers may also employ mixed-methods or longitudinal designs to investigate the long-term effects of succession planning on organizational productivity, employee retention, and leadership continuity. In addition, future studies could explore the role of artificial intelligence, predictive analytics, and digital human resource systems in improving succession planning effectiveness and identifying high-potential employees.

From a practical perspective, managers of the Airports Company of Iran should establish an integrated and competency-based succession planning system that aligns leadership development with organizational strategy and productivity objectives. Organizations should also strengthen knowledge management systems, document the experiences of senior personnel, and create structured mechanisms for transferring expertise to younger employees. Transparent career development pathways, merit-based promotion systems, and targeted developmental programs can enhance employee motivation and reduce organizational dependence on specific individuals. Furthermore, policymakers and organizational leaders should consider succession planning not merely as an administrative requirement, but as a strategic investment in organizational sustainability, operational continuity, and human resource productivity.

Acknowledgments

We would like to express our appreciation and gratitude to all those who helped us carrying out this study.

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.

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.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

References

1. Sameri M. *Effective Succession Planning in Organizations*. Tehran: Avaye Monji; 2023.
2. Sadeghi F, Daneshfard K, Kheirandish M, Pilevari N. A succession planning model centered on organizational sustainability. *Quantitative Studies in Management*. 2023;14(3):78-100.
3. Hambrick DC, Lee EY. A model of CEO succession planning as a risky investment: Anticipated costs, uncertain results, and contingency conditions. *Organization Science*. 2025;36(2):677-96. doi: 10.1287/orsc.2023.17781.
4. Mirsayedi SHR, Rakhshani J. *Human Resource Productivity*. Tehran: Ettehad; 2022.
5. Azimi OS, Azimi F, Eskandari H. *Productivity Management in Human Resources of Education*: Jaliz Publications; 2024.
6. Hezarian G. *Productivity Management in Human Resources in Education*. Tehran: Cheshm Andaz-e Qotb; 2025.
7. Nejad Irani F, Mohammadbagheri A. *Human Resource Productivity Management in Organizations*. Tehran: Ghadis; 2025.
8. Akhavan A, Sadri Esfahani A. The effect of succession planning on human resource productivity and performance in Pars Oil Company. *Strategic Studies in the Oil and Energy Industry*. 2021;12(47):152-69.
9. Golshani M, Salavati A, Ahmadi K. Examining components affecting organizational productivity using the design of a comprehensive competency model. *NAJA Human Resources*. 2020;11(60):9-32.
10. Al Awadhi TH, Muslim SB. Reviewing the relation between human resources practices, talent management and succession planning in UAE public sector. *Information Sciences Letters*. 2023;12(4):1271-83. doi: 10.18576/isl/120442.
11. Ghorani SF, Asgari N, Javashi Jadid S. Identifying and prioritizing factors affecting the success of succession planning in the defense industry. *Air Defense Management*. 2025;4(1):119-38.
12. Arash M. Designing a human capital development model based on the succession planning approach among nurses. *Iranian Journal of Medical Education*. 2024;24(6):51-62.
13. Thomas S, Nair DS, Joseph J, Srampical SG, Cleetus RS. Examining the sustainable integration of artificial intelligence in human resource digitalization in the context of Industry 4.0. *European Public & Social Innovation Review*. 2026;11:1-14. doi: 10.31637/epsir-2026-2044.
14. Gunda VN, Muzira J. *Leveraging predictive analytics for workforce planning, succession planning, and organizational development*. 2025.
15. Moghtader Kargar J. Presenting a comprehensive model of knowledge-based human resource productivity using a mixed-methods approach. *Library Studies and Information Organization*. 2025;36(3):200-23.
16. Allo Iv CJ. *Moving Legacy Forward: Assessing Organizational Change Readiness for Pastoral Succession With Emphasis on Churches Under 250 Adherents: Assemblies of God Theological Seminary*; 2026.