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Designing a Process Model of Intelligent Assessment Centers for the Establishment of a Meritocracy System in Government Organizations

1. Mohammadjavad. Tajik: Department of Public Administration, Fi.C., Islamic Azad University, Firouzkouh, Iran
2. Mansoureh. Moradi Haghighi*: Department of Public Administration, Fi.C., Islamic Azad University, Firouzkouh, Iran
3. Farshad. Hajalian: Department of Public Administration, Fi.C., Islamic Azad University, Firouzkouh, Iran
4. Mehdi. Amirmiandaragh: Department of Mathematics, WT.C., Islamic Azad University, Tehran, Iran

*corresponding author's email: mansouremoradihaghighi@iau.ac.ir

ABSTRACT

The present study aimed to design a process model of intelligent assessment centers for the establishment and strengthening of a meritocracy system in government organizations. This study was conducted using a qualitative approach with an applied-developmental orientation and an exploratory purpose. The methodological strategy was thematic analysis, which was employed to identify and conceptualize the dimensions and components of intelligent assessment centers in the public sector. The research participants consisted of 15 experts in the fields of human resource management, assessment centers, digital transformation, artificial intelligence applications, and public administration. Participants were selected through purposive and snowball sampling techniques based on their professional expertise and practical experience. Data were collected through semi-structured interviews and analyzed using a systematic thematic analysis process involving coding, categorization, theme development, and model construction. To enhance the rigor and trustworthiness of the findings, credibility, dependability, confirmability, and transferability procedures were employed throughout the research process. The findings resulted in the development of a comprehensive process model consisting of four overarching dimensions: input, process, output, and consequence. The input dimension included legal frameworks and administrative requirements, smart competency orientation, digital maturity and organizational readiness, and intelligent technologies and infrastructures. The process dimension comprised digital assessment process design, smart assessment methods and tools, data management and decision-support analytics, and validity, reliability, and ethical governance of assessment. The output dimension encompassed competency assessment results and analytical decision-support reports. The consequence dimension included feedback, development and continuous improvement of human capital, enhancement of human resource decision quality, promotion of meritocracy, reduction of subjectivity, increased organizational justice, and improvement of human resource governance quality. Overall, the model demonstrated that intelligent assessment centers function as integrated socio-technical systems that combine competency-based assessment, digital technologies, data-driven analytics, and governance mechanisms to support transparent, objective, and merit-based personnel decisions. The proposed model provides a comprehensive framework for implementing intelligent assessment centers in government organizations and offers a practical pathway for strengthening meritocracy through competency-based evaluation, algorithm-supported decision-making, transparent assessment procedures, and continuous human capital development. The integration of technological, organizational, ethical, and governance dimensions enables public organizations to improve the quality, fairness, accountability, and effectiveness of recruitment, promotion, appointment, and talent development processes.

Keywords: Intelligent Assessment Centers; Meritocracy; Government Organizations; Human Resource Management; Competency Assessment.

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Introduction

Meritocracy has long been recognized as one of the fundamental principles of effective public administration and good governance. In modern governmental systems, the quality of public services, organizational performance, administrative integrity, and citizens' trust in government institutions are strongly influenced by the extent to which recruitment, promotion, and appointment decisions are based on competence rather than personal, political, or informal considerations. Merit-based human resource systems seek to ensure that individuals are selected, developed, and promoted according to objective indicators of competence, capability, and performance. Such systems not only contribute to organizational effectiveness but also play a critical role in reducing corruption, strengthening accountability, and improving administrative legitimacy. Research has demonstrated that robust civil service laws and merit-based personnel practices are associated with lower levels of politicization and corruption and higher levels of administrative performance {Meyer-Sahling, 2016 #451248}. Consequently, governments across the world have increasingly sought mechanisms capable of ensuring fair, objective, and evidence-based assessment of human resources.

Within this context, assessment centers have emerged as one of the most reliable and scientifically supported approaches for evaluating managerial and professional competencies. Unlike traditional recruitment and promotion methods that often rely on interviews, resumes, or subjective judgments, assessment centers employ multiple evaluative exercises, simulations, behavioral observations, and structured assessment procedures to provide a comprehensive picture of an individual's competencies and potential. The multidimensional nature of assessment centers enables organizations to evaluate not only technical skills but also leadership capabilities, interpersonal competencies, decision-making abilities, and behavioral characteristics that are essential for organizational success. International guidelines emphasize that assessment centers must be designed and implemented according to rigorous standards concerning validity, reliability, transparency, and ethical considerations in order to ensure fair and defensible decisions {Rupp, 2015 #451257}. Recent studies further highlight that expert assessors continue to view assessment centers as among the most effective tools for competency-based evaluation and talent identification when implemented through structured and evidence-based procedures {Jackson, 2025 #451242}.

Despite their recognized advantages, traditional assessment centers face numerous challenges that limit their effectiveness in contemporary public organizations. These challenges include high operational costs, lengthy implementation processes, dependence on human assessors, inconsistency in evaluation practices, and vulnerability to subjective biases. Moreover, the increasing complexity of public-sector environments and the growing demand for transparency, accountability, and data-driven decision-making have exposed limitations in conventional assessment approaches. Studies conducted in Iran have identified various pathologies in assessment and development centers, including inconsistencies in assessment criteria, insufficient standardization, inadequate integration of competency frameworks, and challenges related to assessor judgment and organizational support {Akbari, 2015 #451221}. Similar concerns have been reported in research examining competency assessment centers for public-sector managers, where issues such as procedural weaknesses, implementation barriers, and deficiencies in evaluation practices were found to undermine the effectiveness of assessment outcomes {Shams Zare, 2023 #451227}. These challenges suggest that traditional assessment systems require substantial transformation to remain effective in increasingly digital and dynamic organizational environments.

Simultaneously, advances in digital technologies, artificial intelligence, machine learning, big data analytics, and intelligent information systems have fundamentally altered the landscape of human resource management. Organizations are increasingly adopting AI-enabled tools to support recruitment, selection, performance management, competency assessment, and talent development processes. The integration of artificial intelligence into human resource management has created opportunities for automating routine tasks, enhancing analytical capabilities, improving decision quality, and increasing organizational efficiency {Palos-Sánchez, 2022 #451254}. Systematic reviews have demonstrated that AI-supported human resource systems can facilitate more accurate identification of competencies, enable predictive analyses of employee performance, and improve alignment between individual capabilities and organizational requirements {Basu, 2023 #451236}. Likewise, the growing body of literature on AI-assisted human resource management indicates that intelligent technologies are increasingly becoming strategic assets for organizations seeking to optimize talent management and workforce planning processes {Malik, 2023 #451247}.

The emergence of intelligent assessment systems represents a significant evolution in the assessment center paradigm. Intelligent assessment centers combine the methodological rigor of traditional competency-based assessment with the capabilities of advanced digital technologies, including adaptive testing, algorithmic analytics, simulation technologies, predictive modeling, and automated decision-support systems. Through the integration of these technologies, assessment processes can become more efficient, scalable, personalized, and data-driven. Intelligent systems are capable of collecting large volumes of behavioral and performance data, analyzing patterns that may not be visible to human evaluators, and generating evidence-based recommendations to support managerial decisions. Such capabilities are particularly valuable in government organizations, where recruitment and appointment decisions have significant implications for organizational performance, public accountability, and governance quality.

Nevertheless, the integration of artificial intelligence and algorithmic systems into personnel assessment is accompanied by substantial ethical, social, and organizational concerns. One of the most widely discussed issues relates to transparency and explainability. Algorithmic decision-making systems often function as "black boxes," making it difficult for applicants, managers, and stakeholders to understand how assessment outcomes are generated. Concerns regarding opacity have led researchers to emphasize the importance of explainable artificial intelligence (XAI) and transparent algorithmic systems that can provide understandable justifications for assessment decisions {Langer, 2021 #451244}. Transparency is especially critical in public-sector organizations where accountability and procedural justice are fundamental requirements of administrative legitimacy.

Another major concern involves algorithmic bias and fairness. While intelligent assessment systems are frequently promoted as mechanisms for reducing human bias, evidence suggests that algorithmic systems may themselves reproduce or amplify existing social and organizational inequalities if not carefully designed and monitored. Research on algorithmic hiring has shown that many claims regarding bias reduction remain insufficiently supported and that organizations must implement rigorous safeguards to ensure fairness, accountability, and continuous monitoring of algorithmic outcomes {Raghavan, 2020 #451255}. Similarly, studies examining AI-supported recruitment processes indicate that applicants' perceptions of fairness and trust can be significantly influenced by the manner in which artificial intelligence is incorporated into assessment procedures {Köchling, 2023 #451243}. Therefore, successful implementation of intelligent assessment centers requires not only technological sophistication but also robust ethical frameworks and governance mechanisms.

Recent discussions have further emphasized the limitations of relying excessively on artificial intelligence in workplace decision-making. Scholars have argued that technology alone cannot resolve deeply rooted organizational challenges related to power, culture, trust, and human judgment. For example, critiques of emotion AI applications in workplace settings suggest that technological solutions may oversimplify complex human phenomena and create new forms of surveillance, discrimination, or misinterpretation {Andalibi, 2025 #451234}. Similar concerns have been raised regarding the values embedded within AI-driven hiring systems, highlighting the importance of ensuring that technological innovations align with organizational ethics, social values, and public accountability requirements {Roemmich, 2023 #451256}. These findings indicate that the development of intelligent assessment centers must balance technological innovation with considerations of fairness, transparency, human dignity, and responsible governance.

The relevance of intelligent assessment centers becomes particularly evident when examining contemporary challenges within public-sector human resource systems. In many governmental contexts, including Iran, concerns regarding meritocracy, fairness, and the effectiveness of managerial appointments remain prominent. Research assessing meritocracy in public appointments has identified significant challenges related to political influences, procedural justice, transparency, and competency-based selection mechanisms {Behrouzi Lak, 2024 #451222}. Similarly, studies exploring the selection and appointment of managers within the Iranian administrative system have reported structural, procedural, and cultural obstacles that undermine merit-based personnel practices and contribute to inefficiencies in public administration {Mozaffari, 2024 #451232}. These findings suggest that existing human resource systems require innovative mechanisms capable of improving objectivity, accountability, and competency alignment in personnel decisions.

Previous research has also emphasized the importance of adopting process-oriented approaches to meritocracy. Merit-based governance cannot be achieved solely through the application of isolated assessment tools; rather, it requires integrated systems that connect competency identification, assessment procedures, developmental interventions, organizational decision-making, and performance outcomes. Studies focusing on meritocracy in administrative systems have proposed process models that emphasize the interdependence of recruitment, evaluation, development, and organizational improvement mechanisms {Sarshar, 2020 #451226}. However, most existing models were developed prior to the widespread adoption of advanced digital technologies and therefore provide limited guidance regarding the integration of artificial intelligence, intelligent analytics, and digital infrastructures into meritocratic assessment systems.

Although the literature on assessment centers, artificial intelligence, human resource management, and public-sector governance has expanded considerably, a significant theoretical and practical gap remains regarding the design of comprehensive process models for intelligent assessment centers specifically tailored to government organizations. Existing studies tend to focus on isolated aspects of technology adoption, competency assessment, algorithmic decision-making, or meritocracy rather than examining how these components can be integrated into a coherent and operational framework. Furthermore, the unique requirements of public-sector environments—including legal regulations, administrative accountability, organizational justice, transparency obligations, and public trust considerations—necessitate context-specific models that differ substantially from those developed for private-sector organizations.

Given the growing importance of digital transformation in public administration, the increasing use of artificial intelligence in human resource management, and the persistent need to strengthen meritocracy in governmental

organizations, the development of an intelligent assessment center model represents both a theoretical necessity and a practical imperative. Such a model can provide public organizations with a systematic framework for integrating competency-based assessment, intelligent technologies, ethical safeguards, decision-support analytics, and developmental feedback into a unified process capable of supporting fairer, more transparent, and more effective human resource decisions.

Therefore, the aim of the present study is to design a process model of intelligent assessment centers for the establishment of a meritocracy system in government organizations.

Methods and Materials

This study was conducted using a qualitative research approach with an applied-developmental orientation and an exploratory-descriptive purpose. Given the emerging nature of intelligent assessment centers and the limited availability of comprehensive theoretical frameworks regarding their implementation in government organizations, a qualitative methodology was considered the most appropriate approach for exploring the underlying dimensions, processes, and mechanisms associated with the development of an intelligent assessment center model. The study adopted an inductive logic, whereby conceptual categories and theoretical propositions were derived from empirical data rather than tested against predetermined hypotheses. This approach enabled the researchers to develop a process-oriented model grounded in the experiences, perceptions, and professional insights of experts directly involved in human resource management, digital assessment systems, competency evaluation, and public-sector governance.

The methodological strategy employed in this research was thematic analysis. This strategy was selected because of its ability to systematically identify, analyze, and interpret meaningful patterns embedded within qualitative data. Thematic analysis provided a rigorous framework for uncovering the key components, stages, actors, requirements, and outcomes associated with intelligent assessment centers while simultaneously facilitating the development of an integrated process model suitable for implementation in governmental contexts. Through iterative engagement with the collected data, the study sought to reveal both explicit and latent themes that contribute to the successful institutionalization of meritocracy through digitally enhanced assessment mechanisms.

The participants consisted of ten experts possessing substantial academic and professional expertise in the fields of intelligent assessment systems, human resource management, organizational development, digital transformation, and public administration. Participants were selected through purposive sampling based on predefined eligibility criteria, including relevant educational background, demonstrated professional experience, scholarly contributions, and direct involvement in assessment and talent management initiatives within governmental organizations. To enrich the diversity and depth of perspectives, participants were drawn from three major groups: university faculty members and researchers specializing in assessment and human resource management, senior executives from government organizations with practical experience in implementing digital assessment systems, and professional assessors with extensive experience in competency evaluation and assessment center operations.

Following the identification of initial participants, snowball sampling was employed to access additional experts recognized by their peers as knowledgeable and influential within the field. This process continued until theoretical saturation was achieved. Saturation was determined when subsequent interviews no longer generated new conceptual insights, categories, or themes and when recurring patterns became evident across participant

narratives. The final sample represented a rich combination of academic expertise and practical experience, enabling the study to capture a comprehensive understanding of the opportunities, challenges, and strategic requirements associated with designing intelligent assessment centers for merit-based personnel systems in government organizations.

Data collection was carried out through semi-structured interviews, which served as the primary source of qualitative evidence. Semi-structured interviewing was selected because it provides an optimal balance between consistency across participants and flexibility for exploring emerging issues in greater depth. This method allowed participants to freely express their experiences, interpretations, and recommendations while ensuring that all interviews addressed the central research objectives related to intelligent assessment centers and meritocracy systems.

The interview protocol was developed following an extensive review of relevant literature concerning assessment centers, competency-based human resource management, digital transformation, artificial intelligence applications in personnel evaluation, talent management, and public-sector meritocracy. Based on this review, an interview guide containing broad exploratory questions and targeted probing questions was prepared. The questions focused on identifying critical dimensions of intelligent assessment centers, technological and organizational requirements, competency evaluation processes, stakeholder roles, governance mechanisms, implementation challenges, and expected organizational outcomes. The interview guide was continuously refined throughout the data collection process to incorporate insights emerging from earlier interviews and to facilitate deeper exploration of newly identified themes.

Prior to each interview, participants were informed about the objectives of the study, the voluntary nature of their participation, confidentiality procedures, and their right to withdraw at any stage. Informed consent was obtained from all participants before commencing data collection. Interviews were conducted individually through face-to-face meetings or virtual communication platforms, depending on participant availability and logistical considerations. Each interview lasted approximately between sixty and ninety minutes, allowing sufficient time for detailed discussion of the research topics.

With participants' permission, interviews were audio-recorded to ensure accuracy and completeness of data capture. Detailed field notes were also maintained during and immediately after each interview to document contextual observations, nonverbal cues, and preliminary analytical reflections. Following data collection, all recorded interviews were transcribed verbatim. The transcripts were then reviewed multiple times to ensure accuracy and familiarity with the data. This comprehensive data collection process generated a rich qualitative dataset that provided the empirical foundation for developing the proposed process model of intelligent assessment centers in government organizations.

The collected data were analyzed using thematic analysis as a systematic and iterative qualitative analytical technique. Data analysis began concurrently with data collection, enabling emerging insights to inform subsequent interviews and facilitate progressive refinement of the conceptual framework. The analytical process involved repeated immersion in the interview transcripts to achieve a deep understanding of participants' perspectives and experiences regarding intelligent assessment centers and meritocratic human resource systems.

Initially, all interview transcripts were read multiple times to gain familiarity with the content and identify significant statements related to the research objectives. During this phase, preliminary notes and reflections were recorded to capture emerging ideas and potential analytical directions. Subsequently, open coding was performed through a

detailed examination of the textual data. Meaningful units of information were identified and assigned descriptive codes representing key concepts, actions, perceptions, challenges, and recommendations expressed by participants.

Following the initial coding stage, related codes were systematically compared, merged, and organized into broader conceptual categories based on their similarities and relationships. Through constant comparison and iterative refinement, these categories evolved into higher-order themes that reflected the underlying dimensions of intelligent assessment centers. The analysis sought to uncover both explicit patterns directly articulated by participants and implicit meanings embedded within their narratives. Particular attention was given to identifying process-related elements, including inputs, enabling conditions, operational mechanisms, stakeholder interactions, technological infrastructures, decision-making processes, and organizational outcomes.

To enhance the trustworthiness and rigor of the findings, several qualitative validation strategies were employed. Credibility was strengthened through prolonged engagement with the data, continuous comparison of emerging interpretations, and member checking, whereby selected participants reviewed and confirmed the accuracy of preliminary findings. Dependability was supported through maintaining detailed records of analytical decisions and coding procedures. Confirmability was enhanced by documenting reflective memos throughout the research process to minimize researcher bias and ensure transparency in interpretation. Transferability was facilitated through the provision of rich descriptions of the research context, participant characteristics, and analytical procedures.

The final stage of analysis involved integrating the identified themes into a coherent process model that illustrates the structure and functioning of intelligent assessment centers within government organizations. This model was developed by examining the relationships among the extracted themes and organizing them into a logical sequence of interconnected processes. The resulting framework provides a comprehensive representation of the factors, mechanisms, and outcomes necessary for implementing intelligent assessment centers as a foundation for establishing a sustainable meritocracy system in public-sector organizations.

Findings and Results

The demographic profile of the expert participants showed that the qualitative panel consisted of 15 specialists in the fields of intelligent assessment, human resource management, digital transformation, and government-sector assessment systems. In terms of gender, 13 participants were male, representing 87% of the expert group, while 2 participants were female, representing 13%. Regarding work experience, 9 participants, equivalent to 60%, had less than 10 years of professional experience, whereas 6 participants, equivalent to 40%, had more than 11 years of work experience. Overall, the demographic composition indicates that the study relied on a specialized expert group with relevant professional and managerial experience, enabling the collection of rich qualitative data for designing a process model of intelligent assessment centers in government organizations.

Table 1. Qualitative Results for Designing a Process Model of Intelligent Assessment Centers in Government Organizations

Overarching Theme	Second-Level Organizing Theme	First-Level Organizing Theme	Initial Themes
Input	Legal frameworks and administrative requirements	Employment laws	Legal requirements for recruitment and hiring; qualification and competency criteria for applicants; legal restrictions and prohibitions in employment; process of aligning employment laws with organizational needs
Input	Legal frameworks and administrative requirements	Administrative regulations	Internal guidelines for implementing processes; behavioral and professional standards for employees; mechanisms for controlling and monitoring the implementation of regulations; updating and harmonizing regulations with organizational changes
Input	Legal frameworks and administrative requirements	Transparency policies	Public access to information and reports; transparency in decision-making processes; reporting and accountability to stakeholders; use of technology to increase transparency, including online systems and dashboards
Input	Legal frameworks and administrative requirements	Organizational justice	Equality in promotion and career development opportunities; fairness in performance evaluation and rewards; procedures for handling complaints and disputes; creation of an organizational culture based on respect and fairness
Input	Smart competency orientation	General competencies	Communication and interpersonal skills; problem-solving ability and analytical thinking; general knowledge related to the field of work and government regulations; flexibility and adaptability to the organizational environment
Input	Smart competency orientation	Specialized competencies	Technical knowledge related to organizational duties; ability to use tools and technologies related to the field of work; analytical and decision-making skills in specialized areas; up-to-date knowledge and familiarity with professional standards
Input	Smart competency orientation	Behavioral competencies	Commitment and responsibility; cooperation and teamwork; stress and work-pressure management; adherence to professional and organizational ethics
Input	Smart competency orientation	Leadership compatible with the public sector	Guiding teams based on government policies and regulations; ability to make strategic and operational decisions; motivating and developing employees within the organizational framework; transparency and accountability in management
Input	Digital maturity and organizational readiness	Human resource readiness level	Readiness for learning and career development; ability to adapt to process and structural changes; capability to use assessment systems and tools; level of self-efficacy and confidence in personal abilities
Input	Digital maturity and organizational readiness	Technology acceptance culture and digital skills	Motivation and willingness to use new technologies; basic digital skills and use of online tools; acceptance of innovation and digital changes in work processes; effective use of digital data and information in decision-making
Input	Intelligent technologies and infrastructures	Assessment platforms	Online and multichannel accessibility; compatibility with different devices and operating systems; ability to manage question banks and tests; user-friendly and interactive interface; ability to personalize tests based on competencies
Input	Intelligent technologies and infrastructures	Information security	Data encryption and protection of sensitive information; management of user access and permission levels; monitoring and tracking of user activities in the system; network security and prevention of cyber intrusions; privacy protection policies and compliance with legal regulations
Input	Intelligent technologies and infrastructures	System integration	Connection and information exchange among different organizational systems; coordination with human resource and training systems; error-free data transfer and prevention of information duplication; use of shared technical standards and protocols; integrated reporting aligned with other systems
Process	Design of digital assessment processes	Design of entry stages	Determining admission criteria and indicators; initial assessment of general and specialized competencies; creation of screening and preliminary assessment stages; personalization of the assessment path based on individual characteristics; possibility of recording and maintaining entry records for analysis
Process	Design of digital assessment processes	Test implementation	Scheduling and managing the testing process; ability to conduct online and in-person tests; monitoring and controlling the accuracy of test implementation; immediate recording of

			results and reporting; management of multistage and combined tests
Process	Design of digital assessment processes	Digital analysis and decision-making	Processing test data through intelligent algorithms; producing dashboards and analytical reports; modeling competencies and abilities for decision-making; identifying applicants' strengths and weaknesses through data analysis; supporting data-driven and evidence-based decision-making
Process	Smart assessment methods and tools	Managerial simulations	Designing realistic managerial and organizational scenarios; evaluating individuals' reactions and decision-making in simulated conditions; assessing problem-solving and leadership skills; recording and analyzing individual performance in simulations; providing feedback and developmental recommendations for competency improvement
Process	Smart assessment methods and tools	Adaptive tests	Adjusting the difficulty level of questions according to individual ability; personalizing the assessment path based on initial performance; providing immediate feedback appropriate to responses; accurately identifying individual strengths and weaknesses; improving assessment accuracy and validity through adaptive methods
Process	Smart assessment methods and tools	Gamification and multi-source assessment	Using game elements to increase motivation and participation; evaluating individual performance from the perspectives of colleagues, managers, and the individual; combining results from different sources for comprehensive analysis; improving interaction and user experience in the assessment process; providing motivational and developmental feedback in an engaging format
Process	Data management and decision-support analytics	Algorithmic analysis	Automatic processing of assessment data through intelligent algorithms; identifying patterns and trends in individual performance; accurate evaluation of competencies through statistical and data-driven calculations; reducing human bias in result analysis; providing customizable analytical reports
Process	Data management and decision-support analytics	Performance prediction	Modeling future performance based on previous data; predicting individuals' success in different organizational roles; identifying educational and developmental needs before appointment; using artificial intelligence to improve prediction accuracy; supporting managers' decision-making in employee selection and development
Process	Data management and decision-support analytics	Reduction of human error	Automation of assessment processes to reduce mistakes; use of digital systems for recording and analyzing data; standardization of assessment processes and indicators; quality control of data and accuracy of results; reduction of bias and discrimination in human resource assessment
Process	Validity, reliability, and ethics of assessment	Reliability of results	Use of standardized and valid assessment tools; repetition of tests to examine performance stability; statistical analysis to measure accuracy and reliability of results; standardization of testing conditions for all applicants; documentation of processes for review and verification of results
Process	Validity, reliability, and ethics of assessment	Bias management	Identifying and reducing the effects of assessor prejudice; using intelligent algorithms for impartial analysis; training assessors to standardize judgments; continuous review of data to detect bias patterns; designing multistage processes to reduce cognitive errors
Process	Validity, reliability, and ethics of assessment	Confidentiality and fairness of assessment	Maintaining the confidentiality of personal information and test results; implementing the assessment process based on justice and equality; preventing unauthorized access to applicants' data; presenting results transparently and understandably to applicants; observing ethical and legal standards in assessment
Output	Competency assessment results	Individual competency map	Drawing diagrams of each applicant's strengths and weaknesses; categorizing competencies based on general, specialized, and behavioral domains; analyzing the trend of competency growth and progress over time; providing analytical reports for individual development plans; connecting the competency map with organizational needs and job positions
Output	Competency assessment results	Strengths and areas for improvement	Identifying each individual's outstanding skills and capabilities; determining areas requiring development and training; providing constructive feedback for professional growth; enabling follow-up and assessment of progress over

			time; aligning individual development with organizational goals
Output	Competency assessment results	Comparison of applicants based on standardized and intelligent criteria	Ranking applicants based on objective data and indicators; using intelligent algorithms for comprehensive performance analysis; matching results with organizational and national standards; creating analytical dashboards for managerial decision-making; identifying the best options for appointment or development
Output	Analytical and decision-support reports	Decision-support reports for recruitment, promotion, and appointment	Producing analytical reports based on competency and performance; providing intelligent recommendations for suitable options for each job position; assessing person–job–organization fit; supporting multilevel managerial decision-making; presenting alternative scenarios for human resource decisions
Output	Analytical and decision-support reports	Traceability	Complete tracking of the assessment process from input to output; recording the history of decisions and assessment changes; possibility of monitoring individuals' progress over time; access to assessment records for review and auditing; clarifying the assessment path for stakeholders
Output	Analytical and decision-support reports	Organizational accountability	Accountability of managers for human resource decisions; ability to provide supporting documentation for decisions made; transparency in assessment criteria and indicators; ability to report to supervisory bodies; strengthening public trust in recruitment and promotion processes
Output	Analytical and decision-support reports	Documentation	Systematic recording of assessment data and results; documentation of assessment processes, criteria, and tools; creation of a competency and performance database; possibility of reproducing and repeating the assessment process; support for future analyses and continuous system improvement
Consequence	Feedback, development, and continuous improvement of human capital	Designing individual development plans and career paths	Developing competency-gap-based development plans; designing intelligent and data-driven career paths; prioritizing training based on individuals' actual needs; aligning individual growth with organizational goals; monitoring the effectiveness of development programs over time
Consequence	Feedback, development, and continuous improvement of human capital	Intelligent feedback, process correction, and evolution of the assessment model	Providing personalized and data-based feedback; identifying weaknesses in the assessment process through result analysis; continuous improvement of algorithms and assessment tools; adapting the assessment model to environmental and organizational changes; organizational learning based on assessment data
Consequence	Improvement of human resource decision quality and performance outcomes	Quality of human resource decisions and performance outcomes	Increasing the accuracy and effectiveness of recruitment and appointment decisions; reducing error and bias in managerial decisions; improving person–job–organization fit; enhancing individual and organizational performance in the long term; creating strategic advantage for the government human resource system
Consequence	Promotion of meritocracy and quality of human resource governance	Reduction of subjectivity	Standardizing assessment criteria and indicators; using data-driven algorithms in result analysis; eliminating personal judgments from the decision-making process; conducting multi-source and multi-tool assessment; clarifying processes and the logic of decisions; separating the role of the assessor from the final decision-maker; continuous monitoring and correction of human and systemic biases
Consequence	Promotion of meritocracy and quality of human resource governance	Increasing justice and organizational trust	Equality in assessment and selection opportunities; observance of procedural fairness in all assessment stages; transparency in criteria, results, and feedback; managerial accountability for human resource decisions; protection of applicants' confidentiality and human dignity; strengthening employees' trust in the assessment and promotion system; institutionalizing a culture of meritocracy in the organization

The qualitative analysis showed that the process model of intelligent assessment centers in government organizations is structured around four main dimensions: input, process, output, and consequence. These four dimensions indicate that the establishment of a meritocracy system in public organizations cannot be reduced to the use of digital tools alone. Instead, it requires a coherent sequence beginning with legal, administrative, competency-based, cultural, and technological prerequisites; continuing through digitalized assessment processes,

smart tools, algorithmic analytics, and ethical safeguards; and ending in decision-support outputs, developmental feedback, and improved human resource governance.

The input dimension reflected the foundational conditions required for implementing intelligent assessment centers in government organizations. The findings indicated that legal frameworks, administrative requirements, transparency policies, and organizational justice form the institutional basis of the model. Alongside these structural requirements, the experts emphasized the importance of smart competency orientation, including general, specialized, behavioral, and public-sector leadership competencies. Digital maturity and organizational readiness were also identified as essential inputs, particularly in relation to human resource readiness, technology acceptance culture, digital literacy, and the ability of employees and managers to work with intelligent assessment systems. In addition, the presence of secure, integrated, and user-centered technological infrastructures was recognized as a necessary condition for the effective functioning of intelligent assessment centers.

The process dimension represented the operational core of the model. This dimension included the design of digital assessment processes, the use of smart assessment methods and tools, data management and decision-support analytics, and attention to validity, reliability, and ethical principles. The experts emphasized that intelligent assessment centers should include carefully designed entry stages, structured test implementation, and digital analysis mechanisms capable of supporting evidence-based decision-making. The use of managerial simulations, adaptive tests, gamification, and multi-source assessment was identified as a way to increase the depth, accuracy, and engagement of the assessment process. Moreover, algorithmic analysis, performance prediction, and automation were considered key mechanisms for reducing human error, increasing analytical precision, and minimizing bias in assessment decisions.

The output dimension showed that intelligent assessment centers generate more than simple selection results. According to the qualitative findings, the most important outputs include individual competency maps, identification of strengths and areas for improvement, comparison of applicants based on standardized and intelligent criteria, analytical decision-support reports, traceability, organizational accountability, and systematic documentation. These outputs provide managers with reliable evidence for recruitment, promotion, appointment, development, and succession-related decisions. The findings also indicated that documentation and traceability play a critical role in strengthening transparency, enabling auditability, and improving the legitimacy of human resource decisions in government organizations.

The consequence dimension explained the broader organizational effects of implementing intelligent assessment centers. The findings revealed that such centers can support the continuous improvement of human capital through personalized feedback, competency-based development plans, data-driven career paths, and ongoing refinement of assessment tools and algorithms. They can also improve the quality of human resource decisions by increasing the accuracy of recruitment and appointment decisions, reducing bias and error, and enhancing person–job–organization fit. At the governance level, the model contributes to the promotion of meritocracy by reducing subjectivity, standardizing assessment criteria, separating assessment from final decision-making, improving procedural fairness, strengthening organizational trust, and institutionalizing a culture of merit-based selection and promotion in government organizations.

Overall, the findings suggest that the proposed model is a comprehensive and process-oriented framework for establishing intelligent assessment centers in the public sector. The model begins with institutional, competency-based, cultural, and technological inputs; transforms these inputs through digital assessment processes and

intelligent analytics; produces transparent, documented, and decision-supportive outputs; and ultimately contributes to human capital development, higher-quality human resource decisions, organizational justice, and sustainable meritocracy in government organizations.

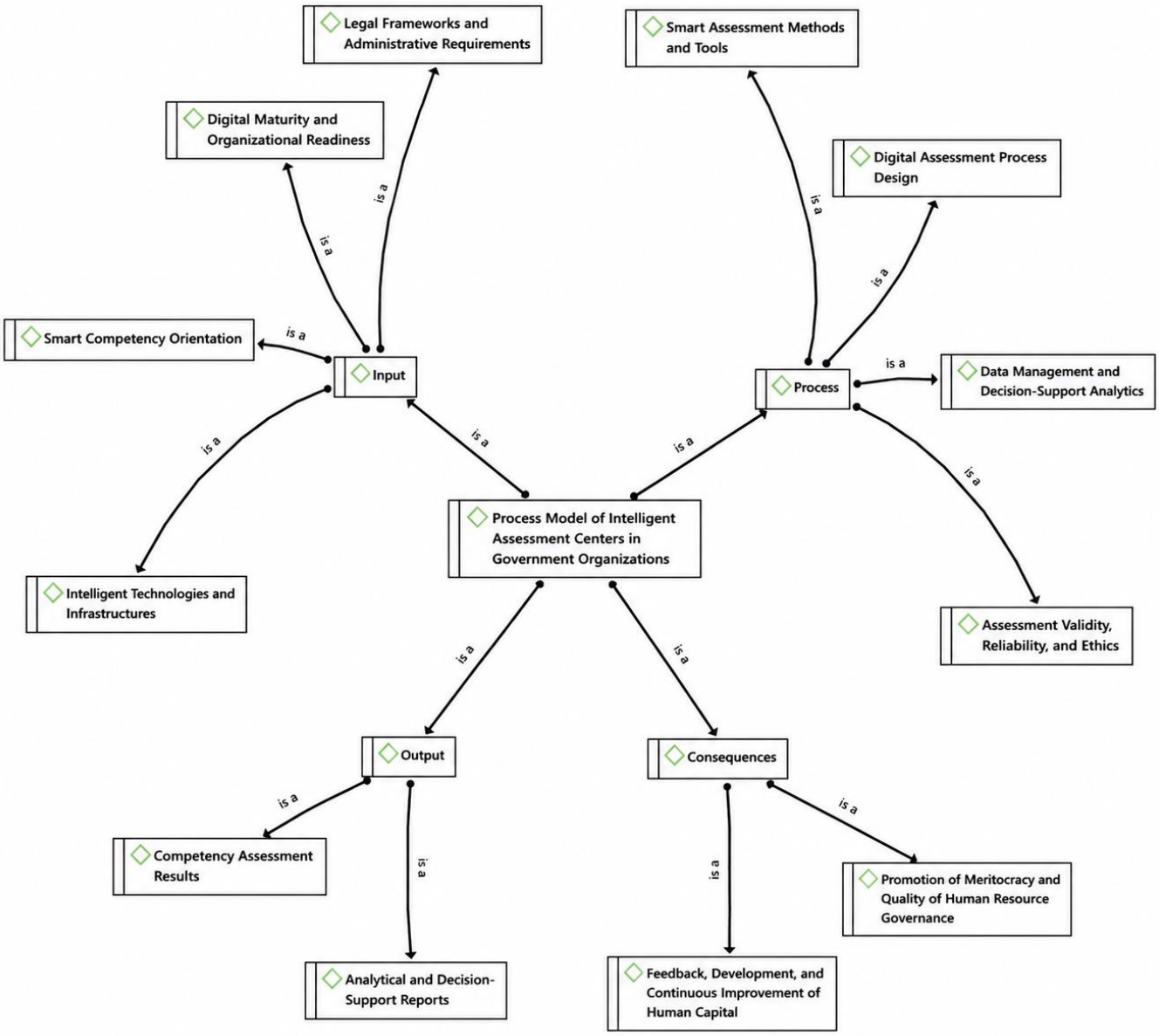

Figure 1. Conceptual Model of the Study

Discussion and Conclusion

The purpose of this study was to design a process model of intelligent assessment centers for the establishment of a meritocracy system in government organizations. The findings revealed a comprehensive four-dimensional framework consisting of input, process, output, and consequence components. At the input level, the model emphasized legal and administrative frameworks, smart competency orientation, digital maturity and organizational readiness, and intelligent technological infrastructures. At the process level, the model incorporated digital assessment process design, smart assessment methods and tools, data management and decision-support analytics, and mechanisms ensuring validity, reliability, and ethics. The output dimension included competency

assessment results and analytical decision-support reports, while the consequence dimension encompassed human capital development, continuous improvement, enhanced meritocracy, and improved quality of human resource governance. Collectively, these findings suggest that intelligent assessment centers should be viewed not merely as technological platforms but as integrated socio-technical systems that connect competency assessment, organizational governance, digital technologies, and merit-based decision-making within a coherent framework.

One of the most significant findings of the study was the central role of legal frameworks, administrative requirements, transparency policies, and organizational justice as foundational inputs of intelligent assessment centers. The prominence of these factors reflects the unique characteristics of government organizations, where personnel decisions must be aligned with legal regulations, public accountability, and procedural fairness. This finding is highly consistent with research indicating that merit-based public administration systems depend heavily on institutionalized legal frameworks and civil service regulations that reduce politicization and support objective personnel decisions {Meyer-Sahling, 2016 #451248}. Similarly, studies conducted within the Iranian public sector have highlighted the importance of transparent procedures, political justice, and institutional safeguards in promoting meritocracy and improving the legitimacy of public appointments {Behrouzi Lak, 2024 #451222}. The emphasis placed by participants on transparency and accountability also reflects growing demands for public-sector governance systems capable of demonstrating fairness and legitimacy to both internal and external stakeholders.

Another important finding concerned the identification of smart competency orientation as a critical input component. The model emphasized general, specialized, behavioral, and leadership competencies as the primary criteria for assessment and decision-making. This finding reinforces the competency-based philosophy that underlies modern assessment center methodology. Previous studies have consistently demonstrated that assessment centers provide valuable information regarding a wide range of competencies necessary for organizational effectiveness, particularly leadership potential, interpersonal effectiveness, problem-solving ability, and strategic thinking {Jackson, 2025 #451242}. Furthermore, the findings align with evidence suggesting that competency-based assessment approaches provide a more valid and comprehensive basis for personnel decisions than traditional selection methods that rely heavily on educational credentials or unstructured interviews {Rupp, 2015 #451257}. In the context of government organizations, the emphasis on competency orientation is particularly important because it facilitates the alignment of recruitment, promotion, and succession decisions with organizational objectives and public service requirements.

The results also highlighted digital maturity and organizational readiness as essential prerequisites for the successful implementation of intelligent assessment centers. Participants emphasized employee readiness, technology acceptance, digital skills, and organizational adaptability as necessary conditions for effective adoption of intelligent systems. This finding corresponds closely with contemporary human resource management literature, which argues that technological innovations generate value only when organizations possess sufficient digital capabilities and cultural readiness to support implementation {Palos-Sánchez, 2022 #451254}. Studies on AI-human resource management interactions similarly suggest that organizational outcomes depend not only on technological infrastructure but also on the readiness of employees and managers to engage with digital tools and data-driven decision-making processes {Basu, 2023 #451236}. Therefore, the successful institutionalization of intelligent assessment centers requires parallel investments in technological infrastructure, digital literacy, and organizational change management.

A further finding concerned the importance of intelligent technologies and infrastructures, including assessment platforms, information security mechanisms, and system integration capabilities. Participants emphasized the need for online accessibility, interoperability, data protection, and seamless integration with existing human resource systems. This finding reflects the growing digitalization of personnel management and supports research demonstrating that artificial intelligence and digital technologies can significantly enhance efficiency, scalability, and analytical capacity in human resource processes {Malik, 2023 #451247}. At the same time, the emphasis on information security and privacy reflects increasing concerns regarding the ethical management of employee data and the necessity of protecting sensitive information within digital environments. Such concerns are particularly relevant in public-sector contexts where data governance and public trust are critical organizational priorities.

The process dimension of the model revealed that intelligent assessment centers should incorporate digital assessment design, smart assessment methods, algorithmic analytics, and ethical governance mechanisms. The findings demonstrated that assessment processes can be substantially enhanced through adaptive testing, managerial simulations, gamification, multi-source assessment, and intelligent analytical systems. These findings are consistent with emerging literature indicating that digital assessment technologies enable organizations to collect richer behavioral data, personalize assessment experiences, and improve the precision of competency evaluations {Palos-Sánchez, 2022 #451254}. Furthermore, the inclusion of simulations and multi-source assessments corresponds with established assessment center principles emphasizing the importance of evaluating competencies through multiple exercises and diverse sources of evidence {Rupp, 2015 #451257}. Such approaches are particularly valuable because they allow organizations to evaluate complex competencies in realistic contexts while reducing dependence on single-method assessments.

The identification of algorithmic analysis and predictive modeling as central process elements further reflects the increasing integration of artificial intelligence into human resource management. Participants indicated that intelligent algorithms could support competency modeling, identify performance patterns, predict future success, and reduce human error in decision-making. These findings align with research demonstrating that AI-supported systems can facilitate more accurate analyses of employee competencies and generate valuable predictive insights for talent management and workforce planning {Basu, 2023 #451236; Malik, 2023 #451247}. However, the findings should also be interpreted in light of concerns raised within the literature regarding algorithmic bias and the limitations of purely technological approaches to personnel decision-making. While intelligent systems may reduce certain forms of human bias, researchers have warned that algorithmic systems may reproduce existing inequalities if not carefully designed and monitored {Raghavan, 2020 #451255}. Therefore, the benefits of algorithmic analysis must be balanced with appropriate governance mechanisms and ethical safeguards.

The prominence of validity, reliability, confidentiality, fairness, and bias management within the process dimension is particularly noteworthy. Participants consistently emphasized that intelligent assessment centers must maintain high ethical standards and ensure equitable treatment of all applicants. This finding strongly corresponds with international assessment center guidelines that identify fairness, transparency, confidentiality, and reliability as essential requirements for defensible assessment practices {Rupp, 2015 #451257}. The findings also align with contemporary discussions concerning explainable artificial intelligence and algorithmic transparency. Researchers have increasingly argued that opaque assessment systems can undermine trust, reduce perceptions of fairness, and generate resistance among applicants and employees {Langer, 2021 #451244}. Likewise, studies examining AI-supported recruitment processes indicate that applicants' affective responses and trust perceptions are strongly

influenced by transparency, explainability, and procedural justice {Köchling, 2023 #451243}. Consequently, ethical governance should be regarded as a core component of intelligent assessment center design rather than an auxiliary consideration.

The output dimension demonstrated that intelligent assessment centers produce far more than selection decisions. According to participants, the system generates competency maps, developmental feedback, comparative analyses, decision-support reports, accountability mechanisms, and documentation systems. This finding expands the traditional conception of assessment centers from a selection-oriented tool to a comprehensive talent management platform. The ability to generate individualized competency profiles and developmental recommendations is consistent with contemporary perspectives that emphasize assessment as a continuous process supporting learning, development, and organizational improvement rather than merely identifying successful candidates {Jackson, 2025 #451242}. Furthermore, the emphasis on traceability and documentation reflects growing public-sector demands for evidence-based decision-making and accountability in personnel management.

The consequence dimension revealed that intelligent assessment centers contribute directly to human capital development, organizational learning, improved decision quality, and strengthened meritocracy. Participants emphasized the importance of personalized feedback, competency-based development programs, intelligent career pathways, and continuous refinement of assessment systems. These findings support previous models of meritocracy that view assessment, development, and organizational improvement as interconnected processes rather than isolated activities {Sarshar, 2020 #451226}. The findings also suggest that intelligent assessment centers can serve as strategic mechanisms for enhancing long-term organizational performance by ensuring better alignment between individuals, positions, and organizational goals.

Particularly significant was the finding that intelligent assessment centers can reduce subjectivity and strengthen organizational justice. Participants viewed standardization, data-driven analysis, multi-source evaluation, and transparent decision-making processes as key mechanisms for reducing personal preferences and informal influences in personnel decisions. This finding corresponds closely with research identifying politicization, subjective judgments, and non-merit considerations as major challenges within public-sector appointment systems {Mozaffari, 2024 #451232; Behrouzi Lak, 2024 #451222}. By institutionalizing objective criteria and evidence-based assessments, intelligent assessment centers may contribute to the development of more equitable and trustworthy personnel systems. Nevertheless, scholars caution that technological solutions alone cannot eliminate organizational power dynamics or guarantee fairness. For example, research on emotion AI and AI-supported hiring systems has demonstrated that technological innovations may introduce new ethical and social challenges if implemented without careful consideration of human values and contextual factors {Andalibi, 2025 #451234; Roemmich, 2023 #451256}. Therefore, intelligent assessment centers should be viewed as tools that support, rather than replace, responsible human judgment and organizational accountability.

Overall, the findings indicate that intelligent assessment centers represent a promising pathway toward strengthening meritocracy in government organizations. By integrating competency-based assessment principles, advanced digital technologies, algorithmic analytics, ethical safeguards, and developmental feedback mechanisms, the proposed model offers a comprehensive framework capable of addressing many of the limitations associated with traditional assessment systems. The model contributes to both theory and practice by demonstrating how

technological innovation can be systematically aligned with public-sector governance requirements, organizational justice principles, and merit-based human resource management objectives.

This study has several limitations that should be acknowledged. First, the model was developed based on qualitative data collected from a limited number of experts, which may restrict the diversity of perspectives represented in the findings. Second, although participants possessed substantial expertise in assessment centers, digital transformation, and human resource management, their views may reflect specific organizational experiences and contextual assumptions. Third, the study focused primarily on conceptual model development and did not include practical implementation or empirical evaluation of the proposed framework within government organizations. Finally, the rapid evolution of artificial intelligence technologies may require continuous revision and adaptation of the model to ensure its long-term relevance and applicability.

Future studies may examine the practical implementation of the proposed model in different governmental contexts and evaluate its effectiveness through longitudinal designs. Researchers may also investigate the relationships among the identified dimensions and develop measurement instruments for assessing organizational readiness, digital maturity, and intelligent assessment capabilities. Comparative studies across public and private sectors could provide additional insights regarding contextual differences in intelligent assessment center implementation. Furthermore, future research should explore the role of emerging technologies such as generative artificial intelligence, advanced predictive analytics, and explainable AI in enhancing assessment center effectiveness while maintaining fairness and transparency.

Government organizations seeking to establish merit-based personnel systems should invest in integrated digital assessment infrastructures that combine competency evaluation, analytics, and decision-support capabilities. Policymakers should ensure that intelligent assessment initiatives are supported by clear legal frameworks, transparency requirements, and accountability mechanisms. Human resource managers should prioritize the development of digital competencies among employees and assessors while creating organizational cultures that support innovation and evidence-based decision-making. In addition, organizations should establish comprehensive ethical governance frameworks addressing privacy, fairness, algorithmic transparency, and bias management. Continuous monitoring, feedback collection, and system improvement should be embedded within assessment center operations to ensure that intelligent technologies contribute effectively to sustainable meritocracy and high-quality human resource governance.

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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 adheried 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.

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