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Identification and Hierarchical Leveling of the Components of a Meritocracy-Based Human Resource Recruitment Model Using Interpretive Structural Modeling (ISM)

ABSTRACT

The establishment of a meritocracy system in the public sector, particularly in service-oriented institutions characterized by specific cultural and contextual requirements, necessitates a transition from traditional approaches toward indigenous and data-driven models. The present study aimed to identify and hierarchically level the components of a meritocracy-based human resource recruitment model in Qom Municipality. In terms of purpose, this study was applied, and in terms of its nature and methodology, it employed a mixed-methods (qualitative–quantitative) design with an exploratory sequential approach. In the qualitative phase, data were collected through semi-structured interviews with 15 experts in public and urban management who held doctoral degrees and had managerial experience. Interviews continued until theoretical saturation was achieved, and the data were analyzed using Braun and Clarke’s six-phase thematic analysis. In the quantitative phase, the interrelationships, causal precedence, and structural dynamics among the 16 final components were examined using Interpretive Structural Modeling (ISM) and Cross-Impact Matrix Multiplication Applied to Classification (MICMAC) analysis. The qualitative findings resulted in the identification of 64 basic themes, 15 organizing themes, and six overarching themes. The quantitative findings demonstrated that the components could be classified into a seven-level hierarchical structure. The variables “reforming structural and legal foundations,” “data-driven management and institutional monitoring,” “inclusion, diversity, and monitoring,” and “leadership and organizational culture” were positioned at the deepest levels of the model (Levels 6 and 7) and were identified as fundamental drivers because of their high driving power. Performance appraisal, training, and assessment-center-related components occupied the intermediate or linkage levels, whereas “design and implementation of a competency-based recruitment system,” “equality of opportunity,” and “reward and career advancement system” were positioned at the upper levels of the model as dependent and outcome variables. Achieving effective merit-based selection in Qom Municipality is therefore not merely a technical or single-factor process; rather, it requires prior revision of employment regulations, elimination of relationship-based bottlenecks, and establishment of transparent, data-driven systems, which should subsequently be complemented through multidimensional assessment centers and integration with retention and succession-planning cycles. The proposed model provides urban management decision-makers with an operational and scientific roadmap for enhancing organizational productivity and public trust.

Keywords: human resource recruitment, meritocracy, thematic analysis, Interpretive Structural Modeling (ISM)

Introduction

Human resources constitute one of the most consequential strategic assets of contemporary organizations because organizational capacity, service quality, innovation, adaptability, and long-term performance depend substantially on the

knowledge, competencies, values, and behavioral capabilities of employees. This dependence is particularly pronounced in public-sector organizations, where the quality of human resources affects not only internal efficiency but also the legitimacy, responsiveness, transparency, and public value generated by governmental institutions. Contemporary human resource management has therefore moved beyond its traditional administrative emphasis on staffing, payroll, and personnel procedures toward an integrated strategic system in which recruitment, competency development, performance management, succession planning, and organizational learning are closely aligned with institutional objectives. Evidence indicates that human resource management practices exert their influence on organizational performance partly through the competencies employees possess and develop, highlighting competency as a pivotal mechanism linking HRM systems to organizational outcomes [1]. Similarly, managerial competencies and learning orientation have been shown to contribute to job performance, suggesting that organizations cannot obtain sustainable performance improvements merely by increasing staffing levels without simultaneously ensuring competency–job alignment [2]. Leader competencies can further enhance knowledge sharing and employee performance by strengthening organizational social capital and facilitating productive interactions among employees [3]. Accordingly, competency-based human resource management has increasingly become a central framework for integrating workforce planning, recruitment, assessment, development, and performance optimization [4, 5].

Competency-based human resource management is grounded in the assumption that effective organizational performance requires a systematic definition of the knowledge, skills, abilities, behavioral attributes, ethical qualities, and professional characteristics necessary for successful performance in particular roles. A competency framework thus provides an explicit bridge between organizational strategy and individual behavior by translating broad institutional objectives into measurable expectations for employees and managers. Competency models have been developed across different occupational and institutional settings because the competencies required for effective performance are rarely universal and must reflect contextual, organizational, and professional demands. For example, competency frameworks have been developed for nurse managers to integrate financial and managerial requirements with the operational responsibilities of public healthcare organizations [6], while competency development in educational settings has been regarded as essential to improving the quality of human resources and professional practice [7]. Likewise, competency-based development strategies emphasize the need to identify organizational competency gaps and build targeted human resource development programs consistent with changing strategic priorities [8]. More recent approaches also emphasize that competency development must be responsive to the demands of Industry 4.0, technological transformation, and continuously changing work environments [9]. In the Iranian public sector, efforts to develop a general competency model have similarly highlighted the necessity of identifying competencies that correspond to the institutional, administrative, and cultural characteristics of public organizations rather than relying on generic frameworks developed for dissimilar contexts [10].

The significance of competency frameworks becomes especially evident during recruitment and selection because the initial composition of the workforce influences subsequent organizational effectiveness, development requirements, retention patterns, and managerial succession. Recruitment is no longer viewed simply as filling vacant positions; rather, it is a strategic process through which organizations acquire individuals whose capabilities and values are compatible with present and future organizational requirements. Empirical evidence suggests that effective recruitment and career development can improve employee performance, with competency functioning as an important mediating mechanism in this relationship

[11]. Strategic planning can similarly strengthen the recruitment of competent human resources by ensuring that staffing decisions are derived from organizational priorities rather than short-term administrative pressures [12]. In organizations that compete for highly qualified talent, recruitment must additionally include systematic talent identification, employer attractiveness, transparent selection procedures, and mechanisms for integrating high-potential employees into organizational development pathways. A systematic model for attracting and employing top talent has therefore been proposed as a means of integrating talent acquisition with strategic human resource planning [13]. Human capital-oriented approaches likewise emphasize investment in capabilities, potential, and long-term workforce value rather than treating personnel merely as an operational cost [14]. These developments suggest that competency-based recruitment should be conceptualized as an interconnected system involving attraction, screening, assessment, appointment, development, and retention rather than as an isolated hiring procedure.

In the public sector, however, competency-based recruitment has an additional normative dimension: it is inseparable from meritocracy. Meritocracy requires employment, appointment, promotion, and professional advancement to be determined by relevant competencies, qualifications, performance, and demonstrated capability rather than personal relationships, favoritism, political influence, informal networks, or other nonprofessional considerations. This requirement is particularly important because public employment systems are expected to satisfy simultaneously the principles of effectiveness, equality, legality, transparency, and accountability. A comparative examination of public employment in Iranian administrative law has demonstrated the institutional importance of legal and regulatory arrangements governing recruitment and public service employment [15]. At the organizational level, performance evaluation has also been identified as an important mechanism for realizing meritocracy because fair evaluation provides the informational basis for differentiating performance, promotion, development, and reward decisions [16]. Nevertheless, the implementation of merit-based selection is frequently constrained by structural, cultural, procedural, and managerial barriers. Research on merit-based recruitment has identified obstacles that can impede the selection of competent personnel even when meritocracy is formally recognized as an organizational objective [17]. These concerns are especially salient in public organizations where bureaucratic rigidity, fragmented accountability, ambiguous recruitment criteria, or informal influence may produce a gap between formal employment regulations and actual staffing practices.

For meritocracy to become operational rather than rhetorical, recruitment systems must therefore be supported by valid competency assessment mechanisms. Assessment and development centers have become particularly important because they allow organizations to evaluate candidates and employees through multiple methods and dimensions instead of relying exclusively on educational credentials, interviews, or supervisors' subjective judgments. Research on the design and establishment of assessment and development centers for municipal managers demonstrates the relevance of structured competency evaluation within urban management contexts [18]. Similarly, the identification and prioritization of managerial competency assessment dimensions in Tehran Municipality confirms that municipal management requires context-specific assessment criteria capable of differentiating individuals according to the competencies needed for complex public service responsibilities [19]. A conceptual model of assessment and development centers has further emphasized their role in linking competency evaluation to organizational performance improvement [20]. Using Interpretive Structural Modeling, research has also demonstrated that competency-development indicators within assessment and development centers are structurally interdependent, meaning that some indicators function as fundamental drivers while others operate as

intermediate or outcome variables [21]. In addition, managerial competency models can be incorporated into promotion decisions using multicriteria decision-making techniques, thereby improving the consistency and transparency of advancement decisions [22]. The psychometric quality of competency instruments is equally important, because merit-based decisions require valid and reliable measurement of managerial and employee capabilities [23].

Competency-based recruitment must also be connected to development, training, performance management, knowledge management, and succession planning. Recruitment alone cannot guarantee long-term organizational effectiveness when employee capabilities are not continuously updated or when development opportunities are disconnected from organizational requirements. Models of human resource training quality emphasize the importance of systematically designing and evaluating development processes rather than treating training as a routine administrative activity [24]. Business ethics training within human resource development is also important because competency encompasses not only technical or managerial capability but also ethical judgment and responsible organizational conduct [25]. Competency-based approaches to human resource management with an entrepreneurial orientation likewise indicate that high-performing human resource systems should integrate distinctive competencies with organizational adaptability and innovation [26]. In specialized organizational environments, the identification of components and indicators of efficient human resources has similarly underscored the multidimensional nature of workforce effectiveness and the need to align employee attributes with organizational requirements [27]. Furthermore, the development of competency models for managers in public and health-related organizations demonstrates that competencies must be tailored to the particular managerial challenges, stakeholder expectations, and service environments encountered by the organization [28]. Public-sector human resource managers operating under globalization similarly require a combination of strategic, interpersonal, professional, and adaptive competencies to respond effectively to increasingly complex organizational environments [29].

Technological transformation has added another critical dimension to merit-based human resource management. Digital technologies, artificial intelligence, analytics, and advanced information systems have changed how organizations attract applicants, screen candidates, assess competencies, monitor performance, and forecast workforce needs. Human capital analytics enables organizations to convert workforce data into evidence for planning, recruitment, performance management, and talent decisions, thereby strengthening data-driven workforce management [30]. Information technology, human resource competency, and employee engagement have also been linked to employee performance, demonstrating that technology and competencies operate as complementary rather than independent organizational resources [31]. A systematic review of artificial intelligence, robotics, and advanced technologies in human resource management has shown that technological tools are reshaping recruitment, selection, training, performance assessment, and broader HR decision-making [32]. Yet digitalization also requires organizational safeguards because data-driven processes may reproduce biases when underlying criteria, datasets, or decision rules are poorly designed. Transparency is therefore particularly important in technology-supported HR systems. Research from a signaling perspective indicates that transparency and HR competence can strengthen employee trust and commitment, suggesting that procedurally clear and professionally administered human resource systems communicate organizational integrity to employees [33]. Thus, data-driven meritocracy requires both technological infrastructure and institutional arrangements that preserve accountability, fairness, and explainability.

The normative foundations of contemporary human resource management further extend beyond organizational performance to encompass sustainability, fairness, stakeholder responsibility, and the common good. Sustainable human

resource management emphasizes the need to balance economic and organizational performance with social responsibility and long-term human development. The common-good HRM perspective explicitly challenges approaches focused exclusively on organizational utility and instead emphasizes wider stakeholder interests, employee dignity, and societal outcomes [34]. Sustainable human resource management has also been identified as an important mechanism through which organizations can contribute to the Sustainable Development Goals by embedding sustainability within workforce policies and practices [35]. Green human resource research similarly indicates that training, competence, affective commitment, and values can shape employee behaviors aligned with broader organizational and societal objectives [36]. These perspectives are highly relevant to meritocracy because a merit-based recruitment system should not merely select technically capable personnel; it should also institutionalize fairness, equal opportunity, ethical conduct, diversity, and accountability. In public organizations, such principles are particularly important because recruitment decisions have distributive consequences and affect citizens' perceptions of institutional legitimacy. Accordingly, equality of opportunity, the mitigation of discrimination, professional ethics, transparent procedures, and stakeholder-oriented governance should be treated as constitutive components of merit-based recruitment rather than as peripheral considerations.

Organizational contexts characterized by uncertainty further demonstrate why human resource systems must be resilient, adaptable, and institutionally coherent. The COVID-19 crisis exposed weaknesses in conventional HR arrangements and highlighted the importance of flexibility, employee support, digital work systems, competency development, and strategic organizational preparedness [37]. More broadly, qualitative studies examining professional roles in complex service systems have shown that behavior and performance are shaped simultaneously by individual capabilities and contextual, organizational, and institutional conditions [38]. Such findings caution against explaining successful merit-based recruitment solely in terms of individual candidate characteristics. Even highly competent applicants cannot generate desired organizational outcomes if recruitment regulations are inconsistent, supervisory systems are weak, organizational culture rewards informal relationships, or career development and performance systems are disconnected from competency criteria. Therefore, an effective meritocracy-based recruitment architecture requires attention to interacting structural, legal, cultural, technological, ethical, and managerial conditions. This systemic understanding is particularly relevant in municipal organizations, where employees work across diverse administrative, technical, social, cultural, and service functions and must respond directly to citizens and multiple stakeholder groups.

The Iranian municipal context makes this issue particularly significant. Municipalities are complex public-service organizations whose human resource systems must accommodate legal constraints, public accountability, diverse professional occupations, organizational politics, changing citizen expectations, and the need for efficient service delivery. Existing Iranian research has addressed various elements of this challenge, including public-sector competency models [10], municipal managerial assessment [19], assessment and development centers in municipalities [18], public employment structures [15], competency-based HR systems [26], and barriers to merit-based selection [17]. Nevertheless, these contributions largely examine individual dimensions of competency, assessment, recruitment, or development. A major analytical requirement remains to identify how these dimensions interact within a unified meritocracy-based recruitment system and, more importantly, which components act as underlying drivers, which operate as linkage mechanisms, and which emerge as dependent outcomes. Without such structural knowledge, reform initiatives may focus prematurely on visible procedures—such as interviews, assessment tools, or recruitment advertisements—while leaving deeper institutional causes,

including legal frameworks, organizational culture, monitoring mechanisms, data infrastructure, and equality safeguards, unchanged.

Addressing this problem requires a methodological approach capable of both identifying contextually grounded components and clarifying their structural interdependencies. Qualitative thematic analysis is suitable for discovering the perceptions, experiences, and interpretations of knowledgeable participants and for organizing complex data into basic, organizing, and overarching themes. The adequacy of qualitative interview samples should be justified through the richness of information and the achievement of saturation rather than through mechanical numerical rules, as methodological research on interview-based studies has emphasized [39]. However, thematic identification alone does not establish which components precede others or possess greater structural influence. Interpretive Structural Modeling provides a complementary analytical approach by converting expert judgments regarding pairwise relationships into a hierarchical model, thereby revealing the directional structure among interrelated variables. This is particularly valuable when the research phenomenon consists of mutually reinforcing organizational conditions rather than isolated factors. Furthermore, integrating ISM with MICMAC analysis enables the classification of variables according to their driving and dependence power, making it possible to distinguish fundamental drivers, linkage variables, dependent outcomes, and relatively autonomous components. Such an approach can provide a stronger basis for prioritizing reform interventions and sequencing managerial actions than a simple list of desirable recruitment practices.

Consequently, developing a meritocracy-based human resource recruitment model for Qom Municipality requires an integrated view in which competency modeling, employer branding, competency-based selection, training, knowledge management, succession planning, performance appraisal, rewards, leadership, organizational culture, ethical governance, structural and legal reform, institutional monitoring, data-driven management, equality of opportunity, inclusion, diversity, and the control of dysfunctional organizational behaviors are examined as elements of a single interconnected system rather than as separate practices. The literature demonstrates the value of competency-based planning and performance optimization [5], the importance of systematic competency development for organizational effectiveness [9], and the strategic contribution of human capital-oriented development [14]; however, it also indicates that competency systems cannot function effectively without appropriate organizational structures, transparent procedures, ethical governance, and mechanisms for assessment and continuous development. The need to integrate these elements is particularly pressing in public and municipal organizations, where human resource decisions simultaneously affect institutional performance and perceptions of procedural justice. Accordingly, identifying not only the relevant components but also their hierarchical positions and patterns of mutual influence can provide managers with an evidence-based roadmap for moving from fragmented personnel practices toward a coherent and institutionally embedded meritocracy system.

Therefore, the present study aimed to identify and hierarchically level the components of a meritocracy-based human resource recruitment model in Qom Municipality using thematic analysis, Interpretive Structural Modeling (ISM), and MICMAC analysis.

Methodology

In terms of purpose, the present study was applied, and with respect to its approach to data collection and analysis, it was a descriptive-exploratory study based on a mixed-methods (qualitative-quantitative) methodology. In the first phase, to

identify and extract the dimensions and components of the meritocracy-based human resource recruitment model in Qom Municipality, semi-structured interviews were conducted with academic experts and senior managers of Qom Municipality using purposive judgmental sampling. The interview process continued until theoretical saturation was achieved. No new data emerged after the twelfth interview; nevertheless, the interviews continued through the fifteenth participant to ensure complete saturation, resulting in a final sample of 15 experts. The qualitative data were coded according to Braun and Clarke's (2006) six-phase thematic analysis procedure, and the credibility of the findings was confirmed using credibility criteria and calculation of the inter-coder agreement coefficient (79.36%).

In the second phase, Interpretive Structural Modeling (ISM), in conjunction with Cross-Impact Matrix Multiplication Applied to Classification (MICMAC) analysis, was employed to systematically analyze the interrelationships, direction of influence, and hierarchical structure of the extracted components. At this stage, the Structural Self-Interaction Matrix (SSIM) was initially constructed based on pairwise comparisons and expert judgment and was subsequently transformed into the initial and final reachability matrices by applying the principle of transitivity. The components were then hierarchically leveled within a structural network model by separating the reachability, antecedent, and intersection sets. Finally, the variables were classified and evaluated according to their driving power and dependence power within the four quadrants of the MICMAC matrix: autonomous, dependent, linkage, and independent variables.

Table 1

Characteristics of the Experts

No.	Interview Code	Years of Service	Managerial Experience	Academic Degree	Organizational Position	Field of Expertise
1	E1	18 years	10 years	PhD	Faculty Member	Human Resource Management
2	E2	22 years	12 years	PhD	University Vice President	Educational Management
3	E3	17 years	8 years	PhD	Human Resources Manager	Human Resource Management
4	E4	20 years	11 years	PhD	Personnel Manager	Public Administration
5	E5	15 years	7 years	PhD	Organizational Consultant	Public Policy
6	E6	16 years	6 years	PhD	Faculty Member	Organizational Management
7	E7	14 years	5 years	PhD	Administrative Manager	Organizational Change Management
8	E8	19 years	9 years	PhD	Deputy for Administrative Affairs	Public Administration
9	E9	13 years	6 years	PhD	Development Manager	Human Resource Development
10	E10	21 years	8 years	PhD	Faculty Member	Educational Management
11	E11	18 years	10 years	PhD	Planning Manager	Strategic Management
12	E12	15 years	7 years	PhD	Personnel Manager	Public Administration
13	E13	20 years	11 years	PhD	Administrative Manager	Organizational Management
14	E14	23 years	14 years	PhD	Personnel Manager	Human Resource Management
15	E15	25 years	12 years	PhD	University Professor	Public Administration

Findings and Results

The data extracted in the first phase were derived from the segmented interview texts. An example of the extracted codes is presented in Table 2.

Table 2

Example of Summarized and Segmented Text

Summarized and Segmented Text	Basic Theme
The first and most important step in designing any merit-based recruitment system is to determine what type of individuals the organization requires. A generic competency model cannot simply be copied from another setting and generalized to all organizations. The organization's mission, vision, and strategies must be carefully examined. Given its distinctive religious, cultural, and service-related characteristics, Qom Municipality requires competencies that may not be relevant at all in an industrial or private organization. Core competencies required by all employees should be distinguished from specialized competencies specific to each functional area. This process requires rigorous analysis and the participation of senior managers and organizational experts.	Identification of key organizational competencies

The extracted basic concepts were classified according to the thematic analysis model at three levels: overarching themes, organizing themes, and basic themes. Table 3 presents the components extracted within this classification.

Table 3

Overarching, Organizing, and Basic Themes of Merit-Based Human Resource Recruitment

Basic Themes	Organizing Theme	Overarching Theme
Identification of key organizational competencies	Design of an indigenous competency model	Design and implementation of a competency-based recruitment system
Design of a multidimensional competency model (managerial, behavioral, ethical, knowledge-based, and practical competencies)		
Competency gap analysis and needs assessment		
Competency-based job classification		
Continuous updating of the competency model		
Presenting the organization as a merit-oriented employer	Employer branding and talent attraction	Design and implementation of a competency-based recruitment system
Recruitment through professional and academic networks		
Storytelling and transparency in job advertisements		
Targeting passive talent		
Design of valid and transparent assessment tools	Competency-based selection and assessment process	Design and implementation of a competency-based recruitment system
Use of simulations and complex scenarios		
Assessment of behavioral competencies, character, and learning agility		
Participation of specialized and diverse assessors		
Analysis of recruitment data to reduce bias		
Design of targeted and responsive training programs	Competency-based training	Development and empowerment of competent human capital
Initial empowerment and organizational socialization		
Targeted mentoring and coaching		
Development of soft skills, character, and capacity to manage complexity		
Technical, specialized, and future-oriented training		
Documentation and transfer of organizational knowledge	Knowledge management and succession planning	Development and empowerment of competent human capital
Identification and development of leadership talent		
Leadership development and succession-planning programs		
Establishment of a knowledge base and organizational learning system		
Design of a transparent and fair appraisal system	Competency-based performance appraisal	Performance management and retention of competent human capital
Continuous and systematic feedback		
Use of 360-degree appraisal and competency assessment		
Analysis of performance data to identify bias		
Continuous monitoring and alignment with strategic objectives		
Design of competency-based career paths	Reward and career advancement system	Performance management and retention of competent human capital
Merit-based selection in appointments and promotions		
Fair and performance-based compensation system		
Enhancement of satisfaction, organizational belonging, and loyalty		
Continuous monitoring of fairness in the reward system		
Institutionalization of a meritocracy- and justice-oriented culture	Leadership and organizational culture	Leadership, organizational culture, and meritocratic governance
Transparency in recruitment and promotion processes		
Managerial accountability and responsibility		
Character- and ethics-based leadership	Corporate governance and professional ethics	Leadership, organizational culture, and meritocratic governance
Participatory leadership and consensus-based decision-making		
Respect for stakeholder rights, justice, and fairness		
Establishment of an internal control system and effective monitoring		
Information transparency and reporting		
Monitoring organizational justice and eliminating discrimination		
Reduction of bureaucracy and facilitation of authorization procedures	Reform of structural and legal foundations	Smart governance and institutional infrastructure for merit-based recruitment
Reform of employment laws and regulations		
Enhancement of administrative integrity and transparency		
Development of physical and technological infrastructure		

Definition and measurement of competency and justice indicators	Data-driven management, institutional monitoring, and public accountability	Smart governance and institutional infrastructure for merit-based recruitment
Analysis of recruitment-process data and identification of bias		
Establishment of an institutional monitoring system and targeted intervention		
Citizen demand for accountability and performance transparency		
Continuous monitoring of reform effectiveness and accountability		
Observance of equality of opportunity and nondiscrimination	Equality of opportunity and employment justice	Justice, inclusion, and equality of opportunity in human resource recruitment
Transparency in recruitment and promotion processes		
Prioritization of competency and merit-based selection		
Monitoring and correction of unconscious biases		
Promotion of diversity in recruitment and hiring	Inclusion, diversity, and monitoring	Justice, inclusion, and equality of opportunity in human resource recruitment
Analysis of demographic recruitment data		
Monitoring employment justice and accountability		
Monopoly and discrimination	Culture and deviant behaviors	Structural barriers and pathology of the recruitment process
Ceremonial bureaucracy		
Relationship-based favoritism and nepotism		
Lack of transparency and accountability	Weaknesses in monitoring systems	Structural barriers and pathology of the recruitment process
Weak internal controls		
Noncompliance with laws and regulations		

A total of 64 basic themes and 15 organizing themes were extracted from the summarized and segmented texts, ultimately resulting in Table 3. Table 4 presents the frequency of each theme according to the organizing-theme code.

Table 4

Frequency of Organizing Themes

No.	Organizing Theme	Frequency
1	Design of an indigenous competency model	5
2	Employer branding and talent attraction	4
3	Competency-based selection and assessment process	5
4	Competency-based training	5
5	Knowledge management and succession planning	4
6	Competency-based performance appraisal	5
7	Reward and career advancement system	5
8	Leadership and organizational culture	3
9	Corporate governance and professional ethics	6
10	Reform of structural and legal foundations	4
11	Data-driven management, institutional monitoring, and public accountability	5
12	Equality of opportunity and employment justice	4
13	Inclusion, diversity, and monitoring	3
14	Culture and deviant behaviors	3
15	Weaknesses in monitoring systems	3
Total		63

Subsequently, in the next phase, a thematic matrix was developed based on the themes extracted from the preceding table. This matrix represents the frequency of each theme in relation to the other themes. Table 5 presents the frequency of organizing themes based on their interrelationships in matrix form.

Table 5

Thematic Network

Organizing Theme	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Design of an indigenous competency model	*														
Employer branding and talent attraction	9	*													
Competency-based selection and assessment process	10	9	*												

Competency-based training	10	9	10	*													
Knowledge management and succession planning	9	8	9	9	*												
Competency-based performance appraisal	10	9	10	10	9	*											
Reward and career advancement system	10	9	10	10	9	10	*										
Leadership and organizational culture	8	7	8	8	7	8	8	*									
Corporate governance and professional ethics	11	10	11	11	10	11	11	9	*								
Reform of structural and legal foundations	9	8	9	9	8	9	9	7	10	*							
Data-driven management, institutional monitoring, and public accountability	10	9	10	10	9	10	10	8	11	9	*						
Equality of opportunity and employment justice	9	8	9	9	8	9	9	7	10	8	9	*					
Inclusion, diversity, and monitoring	8	7	8	8	7	8	8	6	9	7	8	7	*				
Culture and deviant behaviors	8	7	8	8	7	8	8	6	9	7	8	7	6	*			
Weaknesses in monitoring systems	8	7	8	8	7	8	8	6	9	7	8	7	6	6	*		

After the research components and indicators had been identified and categorized in the qualitative phase using thematic analysis, Interpretive Structural Modeling (ISM) was employed to move beyond the mere description of dimensions and provide a structured explanation of the interactions among them. Although thematic analysis provides a comprehensive representation of the components as well as the basic and overarching themes of the phenomenon under investigation, it cannot determine the hierarchy, directionality of effects, or causal relationships among variables. Therefore, the final indicators derived from the thematic network were considered the input nodes for the modeling process so that, through direct interaction with the expert panel and formation of the Structural Self-Interaction Matrix (SSIM), the nature and direction of their internal relationships could be determined. Accordingly, the static system of indicators was transformed into a dynamic, multilevel network model in which the driving power and dependence of each component could be determined within the overall structure.

The first step in Interpretive Structural Modeling is to determine the internal relationships among the indicators. Expert judgments are used to identify and represent these internal relationships.

Table 6

Identified Variables and Their Symbols

Indicator	Symbol
Design of an indigenous competency model	D01
Employer branding and talent attraction	D02
Competency-based selection and assessment process	D03
Competency-based training	D04
Knowledge management and succession planning	D05
Competency-based performance appraisal	D06
Reward and career advancement system	D07
Leadership and organizational culture	D08
Corporate governance and professional ethics	D09
Reform of structural and legal foundations	D10
Data-driven management, institutional monitoring, and public accountability	D11
Equality of opportunity and employment justice	D12
Inclusion, diversity, and monitoring	D13
Culture and deviant behaviors	D14
Weaknesses in monitoring systems	D15
Design and implementation of a competency-based recruitment system	D16

The matrix obtained at this stage indicates which variables influence a particular variable and which variables exert influence on it. Conventionally, symbols such as those presented in Table 7 are used to identify the pattern of relationships among the elements.

Table 7*States and Symbols Used to Represent Relationships Among the Research Indicators*

V	A	X	O
Variable <i>i</i> influences variable <i>j</i>	Variable <i>j</i> influences variable <i>i</i>	Bidirectional relationship	No relationship exists

The Structural Self-Interaction Matrix is constructed by comparing the study dimensions and indicators using the four conceptual relationship categories. The resulting information is synthesized according to the Interpretive Structural Modeling procedure, thereby forming the final Structural Self-Interaction Matrix. Table 8 presents the SSIM.

Table 8*Structural Self-Interaction Matrix (SSIM)*

SSIM	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16
D01		A	A	A	A	A	V	A	X	A	A	V	A	X	V	V
D02			X	V	X	V	V	A	V	A	A	V	A	V	V	V
D03				V	X	V	V	A	V	A	A	V	A	V	V	V
D04					A	X	V	A	V	A	A	V	A	V	V	V
D05						V	V	A	V	A	A	V	A	V	V	V
D06							V	A	V	A	A	V	A	V	V	V
D07								A	A	A	A	A	A	A	A	V
D08									V	X	X	V	X	V	V	V
D09										A	A	V	A	X	V	V
D10											X	V	X	V	V	V
D11												V	X	V	V	V
D12													A	A	V	V
D13														V	V	V
D14															A	A
D15																V
D16																

The reachability matrix is obtained by converting the Structural Self-Interaction Matrix into a binary matrix consisting of zeros and ones. In the reachability matrix, the elements on the main diagonal are conventionally assigned a value of 1. Accordingly, the reachability matrix used in the ISM technique is presented in Table 9.

Table 9*Reachability Matrix of the Identified Indicators*

SSIM	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16
D01		0	0	0	0	0	1	0	1	0	0	1	0	1	1	1
D02	1		1	1	1	1	1	0	1	0	0	1	0	1	1	1
D03	1	1		1	1	1	1	0	1	0	0	1	0	1	1	1
D04	1	0	0		0	1	1	0	1	0	0	1	0	1	1	1
D05	1	1	1	1		1	1	0	1	0	0	1	0	1	1	1
D06	1	0	0	1	0		1	0	1	0	0	1	0	1	1	1
D07	0	0	0	0	0	0		0	0	0	0	0	0	0	0	1
D08	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1
D09	1	0	0	0	0	0	1	0		0	0	1	0	1	1	1
D10	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1
D11	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1
D12	0	0	0	0	0	0	1	0	0	0	0		0	0	1	1
D13	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1
D14	1	0	0	0	0	0	1	0	1	0	0	1	0		0	0
D15	0	0	0	0	0	0	1	0	0	0	0	0	0	1		1
D16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	

After obtaining the initial reachability matrix, the final reachability matrix is derived by incorporating transitivity into the relationships among the variables. This is a square matrix in which an element takes the value of 1 when one element can reach another through a path of any length; otherwise, its value is 0. The reachability matrix can be obtained using Euler's approach, in which the identity matrix is added to the adjacency matrix. The resulting matrix is then raised to the power of n until no further changes occur in its elements. The following equation demonstrates the procedure for determining reachability using the adjacency matrix:

Equation 1. Determination of the Final Reachability Matrix

$$[M=(A+I)^n]$$

where (A) denotes the initial reachability matrix, (I) denotes the identity matrix, and (M) denotes the final reachability matrix. Matrix exponentiation is conducted according to Boolean algebra, as presented in Equation 2.

Equation 2. Boolean Algebra Rules

$$[1 \times 1 = 1; 1 + 1 = 1]$$

Accordingly, secondary relationships must also be examined to ensure transitivity. This means that if A leads to B and B leads to C, then A must also lead to C. In other words, if a direct effect should exist according to the secondary relationships but has not been represented in the initial matrix, the matrix must be corrected to reflect the transitive relationship. The final reachability matrix of the indicators is presented in Table 10.

Table 10

Final Reachability Matrix of the Indicators

SSIM	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16
D01	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	1
D02	1	0	1	1	1	1	1	0	1	0	0	1	0	1	1	1
D03	1	1	0	1	1	1	1	0	1	0	0	1	0	1	1	1
D04	1	0	0	0	0	1	1	0	1	0	0	1	0	1	1	1
D05	1	1	1	1	0	1	1	0	1	0	0	1	0	1	1	1
D06	1	0	0	1	0	0	1	0	1	0	0	1	0	1	1	1
D07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
D08	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
D09	1	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1
D10	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
D11	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
D12	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
D13	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
D14	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0
D15	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
D16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

To determine the relationships and hierarchical levels of the criteria, the reachability and antecedent sets for each criterion must be extracted from the reachability matrix.

The reachability set (row elements, outputs, or influences) consists of the variables that can be reached through the focal variable.

The antecedent set (column elements, inputs, or influenced-by relationships) consists of the variables through which the focal variable can be reached.

The output set includes the criterion itself and the criteria influenced by it. The input set includes the criterion itself and the criteria that exert influence on it. Subsequently, the intersection of the two sets is determined.

Table 11*Output Sets (Driving Relationships) for Each Variable*

Variable	Output: Driving Relationships
D01	D1–D7–D9–D12–D14–D15–D16
D02	D1–D2–D3–D4–D5–D6–D7–D9–D12–D14–D15–D16
D03	D1–D2–D3–D4–D5–D6–D7–D9–D12–D14–D15–D16
D04	D1–D4–D6–D7–D9–D12–D14–D15–D16
D05	D1–D2–D3–D4–D5–D6–D7–D9–D12–D14–D15–D16
D06	D1–D4–D6–D7–D9–D12–D14–D15–D16
D07	D7–D16
D08	D1–D2–D3–D4–D5–D6–D7–D8–D9–D10–D11–D12–D13–D14–D15–D16
D09	D1–D7–D9–D12–D14–D15–D16
D10	D1–D2–D3–D4–D5–D6–D7–D8–D9–D10–D11–D12–D13–D14–D15–D16
D11	D1–D2–D3–D4–D5–D6–D7–D8–D9–D10–D11–D12–D13–D14–D15–D16
D12	D7–D12–D15–D16
D13	
D14	D1–D7–D9–D12–D14–D15–D16
D15	D7–D12–D15–D16
D16	D16

Table 12*Input Sets (Dependence Relationships) for Each Variable*

Variable	Input: Dependence Relationships
D01	D1–D2–D3–D4–D5–D6–D8–D9–D10–D11–D13–D14
D02	D2–D3–D5–D8–D10–D11–D13
D03	D2–D3–D5–D8–D10–D11–D13
D04	D2–D3–D4–D5–D6–D8–D10–D11–D13
D05	D2–D3–D5–D8–D10–D11–D13
D06	D2–D3–D4–D5–D6–D8–D10–D11–D13
D07	D1–D2–D3–D4–D5–D6–D7–D8–D9–D10–D11–D12–D13–D14–D15
D08	D8–D10–D11–D13
D09	D1–D2–D3–D4–D5–D6–D8–D9–D10–D11–D13–D14
D10	D8–D10–D11–D13
D11	D8–D10–D11–D13
D12	D1–D2–D3–D4–D5–D6–D8–D9–D10–D11–D12–D13–D14–D15
D13	D8–D10–D11–D13
D14	D1–D2–D3–D4–D5–D6–D8–D9–D10–D11–D13–D14
D15	D1–D2–D3–D4–D5–D6–D8–D9–D10–D11–D12–D13–D14–D15
D16	D1–D2–D3–D4–D5–D6–D7–D8–D9–D10–D11–D12–D13–D14–D15–D16

Table 13*Intersection of the Input and Output Sets of the Indicators*

Variable	Intersection
D01	D1–D9–D14
D02	D2–D3–D5
D03	D2–D3–D5
D04	D4–D6
D05	D2–D3–D5
D06	D4–D6
D07	D7
D08	D8–D10–D11–D13
D09	D1–D9–D14
D10	D8–D10–D11–D13
D11	D8–D10–D11–D13
D12	D12–D15
D13	D8–D10–D11–D13

D14	D1–D9–D14
D15	D12–D15
D16	D16

For variable (C_i), the reachability set (outputs or influences) includes the variables that can be reached through variable (C_i). The antecedent set (inputs or dependence relationships) includes the variables through which variable (C_i) can be reached.

After determining the reachability and antecedent sets, the intersection of these two sets is calculated. The first variable for which the intersection set is equal to the reachability set is assigned to Level 1. Therefore, Level 1 elements have the highest degree of dependence in the model. Once a level has been determined, the criterion assigned to that level is removed from all sets. The input and output sets are then reconstructed, and the level of the next variable is determined.

Table 14

Determination of the Hierarchical Levels in the ISM Model

Symbol	Research Variable	Level
D01	Design of an indigenous competency model	4
D02	Employer branding and talent attraction	6
D03	Competency-based selection and assessment process	6
D04	Competency-based training	5
D05	Knowledge management and succession planning	6
D06	Competency-based performance appraisal	5
D07	Reward and career advancement system	7
D08	Leadership and organizational culture	2
D09	Corporate governance and professional ethics	4
D10	Reform of structural and legal foundations	7
D11	Data-driven management, institutional monitoring, and public accountability	7
D12	Equality of opportunity and employment justice	3
D13	Inclusion, diversity, and monitoring	7
D14	Culture and deviant behaviors	4
D15	Weaknesses in monitoring systems	3
D16	Design and implementation of a competency-based recruitment system	1

Therefore, variable D16 is identified as the Level 1 variable. After identifying the Level 1 variable(s), these variables are removed, and the input and output sets are recalculated without considering the Level 1 variables. The intersection sets are then identified, and the variables whose intersection sets are equal to the relevant sets are selected as Level 2 variables.

Variable D7 is the Level 2 variable.

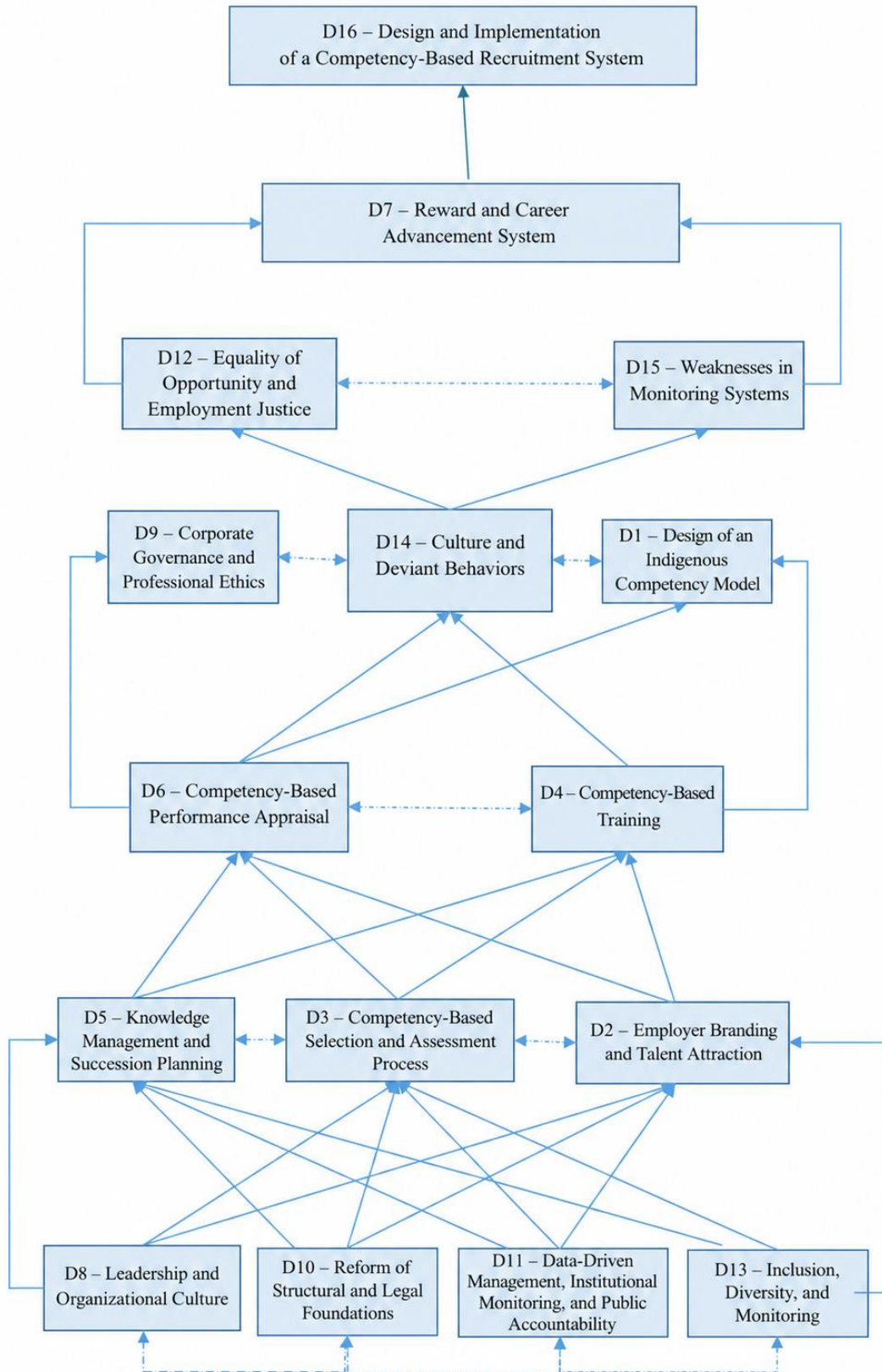
Variables D12 and D15 are Level 3 variables.

Variables D1, D9, and D14 are Level 4 variables.

The final hierarchical structure of the identified variables is presented in the figure. In this diagram, only the significant relationships between the elements at each level and those at the immediately adjacent level, as well as significant internal relationships among the elements within each row, are considered.

Figure 1

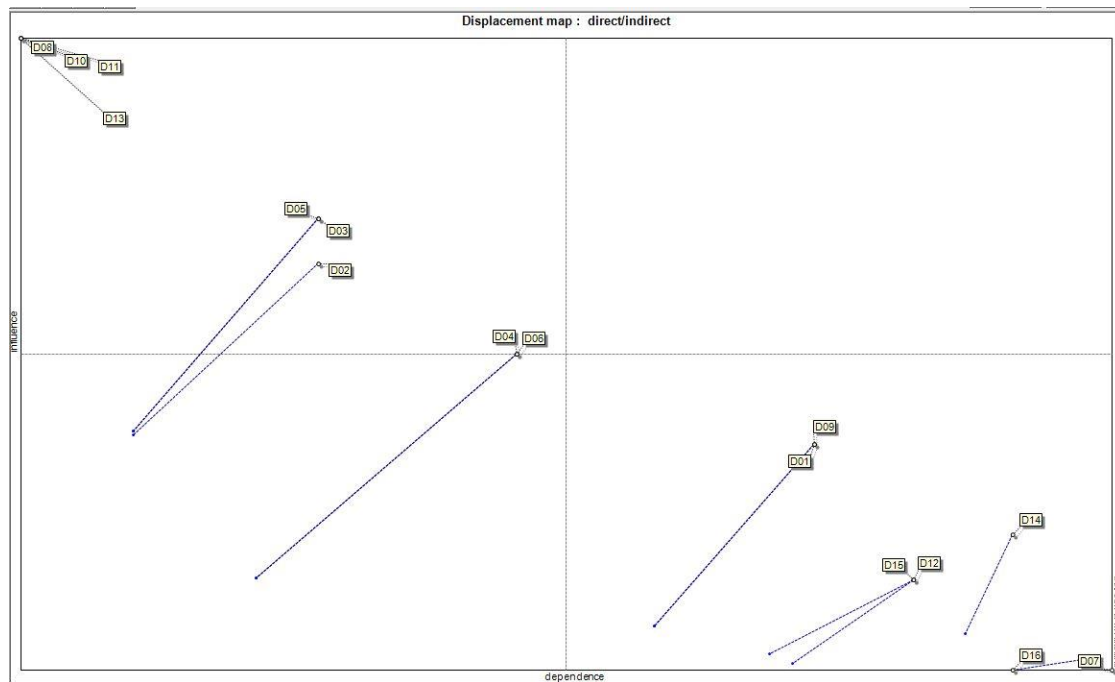
Basic Model Developed Using the ISM Method



In the Interpretive Structural Modeling (ISM) model, the mutual relationships and influences among the criteria, as well as the relationships among criteria located at different hierarchical levels, are clearly represented, thereby facilitating managers' understanding of the decision-making environment. To identify the key criteria, the driving power and dependence power of the criteria are calculated from the final reachability matrix. The driving power–dependence diagram for the variables under investigation is presented in Figure 2.

Figure 2

Driving Power–Dependence Diagram (MICMAC Output)



Based on the dependence power and driving power of the variables, a coordinate system can be constructed and divided into four equal quadrants. In the present study, one group of variables was classified within the driver-variable category. These variables possess high driving power and low dependence. Another category comprises dependent variables, which essentially represent the outcomes of the development process and have relatively little capacity to serve as antecedents or drivers of other variables.

In this analysis, the variables are classified into four groups: autonomous, dependent, linkage, and independent variables.

Autonomous variables: Autonomous variables have low dependence and low driving power. These criteria are generally relatively disconnected from the system because they have weak linkages with other system components. Changes in these variables do not result in substantial changes in the overall system.

Dependent variables: Dependent variables have strong dependence but weak driving power. These variables are generally highly influenced by other variables while exerting relatively little influence on the system.

Independent variables: Independent variables have low dependence and high driving power. In other words, these variables exert substantial influence on other variables while being relatively less affected by them.

Linkage variables: Linkage variables have both high dependence and high driving power. In other words, these criteria are simultaneously highly influential and highly influenced, and even minor changes in these variables may lead to substantial changes throughout the system.

According to the driving power–dependence diagram, the variables have high driving power and low dependence and are therefore located within the independent-variable quadrant.

Discussion and Conclusion

The present study sought to identify and hierarchically structure the components of a meritocracy-based human resource recruitment model for Qom Municipality by integrating thematic analysis with Interpretive Structural Modeling (ISM) and MICMAC analysis. The qualitative phase yielded a multidimensional framework comprising 64 basic themes, 15 organizing themes, and six overarching themes, indicating that merit-based recruitment in a municipal organization cannot be reduced to the isolated act of selecting applicants. Rather, it represents an interconnected human resource governance system encompassing competency modeling, employer branding, competency-based selection and assessment, training, knowledge management and succession planning, performance appraisal, reward and career advancement, leadership and organizational culture, corporate governance and professional ethics, structural and legal reform, data-driven management and institutional monitoring, equality of opportunity, inclusion and diversity, as well as the management of dysfunctional organizational behaviors and weaknesses in supervisory systems. This broad configuration is consistent with the contemporary view that competency-based human resource management should connect recruitment with development, performance, promotion, and organizational strategy rather than treat each HR practice as a separate administrative function [1, 4]. It also supports findings suggesting that organizational competency systems should be designed as integrated architectures in which competencies mediate the effects of human resource practices on organizational performance [2, 11]. In this sense, the study extends competency-based HRM research by demonstrating that, in a public municipal context, meritocratic recruitment is simultaneously a technical, institutional, cultural, ethical, and governance problem.

One of the most important findings was the central role assigned to the design and implementation of a competency-based recruitment system as the ultimate outcome of the modeled structure. This result indicates that a robust competency-based recruitment system does not emerge spontaneously from the existence of formal hiring procedures; rather, it is produced through the coordinated operation of several underlying mechanisms. Competency modeling provides the conceptual foundation by defining what constitutes appropriate performance for different positions, while competency-based selection, performance appraisal, and career systems operationalize those standards throughout the employment cycle. This interpretation is consistent with research emphasizing that competency should serve as the basis for workforce planning and performance optimization [5]. It also accords with studies showing that public-sector competency models need to be contextualized according to the characteristics of the specific administrative system, occupational roles, and organizational mission [10, 29]. The identification of an indigenous competency model in the present study is therefore especially important because Qom Municipality operates within a distinctive cultural, religious, legal, and service environment. A generic competency framework transplanted from another organization may neglect competencies related to public accountability, ethical conduct, responsiveness to citizens, and context-specific managerial judgment. Similar conclusions have been reached in studies that developed context-sensitive competency frameworks for managers and specialized public-service roles [6, 28].

The hierarchical results also demonstrated that reform of structural and legal foundations, data-driven management and institutional monitoring, inclusion, diversity and monitoring, and leadership and organizational culture function as major driving conditions within the overall system. The importance of structural and legal reform suggests that meritocracy cannot be institutionalized if recruitment rules, appointment procedures, job classifications, authorization systems, or employment regulations permit ambiguity, discretion without accountability, or informal influence. This finding is compatible with the argument that public employment systems are fundamentally shaped by their legal and administrative architecture and that effective public recruitment requires clear institutional rules governing access to public service [15]. It also helps explain why merit-based selection may fail even when managers formally endorse meritocratic principles. Previous research has identified barriers such as informal relationships, nonprofessional interference, and deficiencies in institutional procedures as obstacles to merit-based recruitment [17]. Accordingly, the current findings indicate that interventions focused solely on improving interviews or applicant screening will have limited effects unless deeper structural conditions are simultaneously reformed.

The strong driving position of data-driven management, institutional monitoring, and public accountability further indicates that transparent information systems are essential to transforming meritocracy from a normative aspiration into a measurable organizational practice. Recruitment data can reveal patterns of bias, unequal access, deviations from competency criteria, inconsistencies in selection outcomes, and weaknesses in promotion or retention processes. This interpretation is closely aligned with the emerging human capital analytics perspective, which emphasizes the use of workforce data for evidence-based planning, assessment, and decision-making [30]. The finding is also compatible with evidence that information technology and human resource competency jointly contribute to improved employee performance [31]. Technological transformation has increasingly enabled organizations to use advanced analytical systems, artificial intelligence, and digital platforms in recruitment and talent management [32]. However, the present study suggests that technology is valuable only when embedded within mechanisms of transparency, supervision, and accountability. This interpretation is consistent with evidence showing that transparency and HR competence can build organizational trust and commitment by signaling procedural integrity [33]. Therefore, the use of recruitment analytics in a municipality should not merely increase administrative efficiency; it should also create auditable decision pathways through which recruitment and promotion decisions can be justified.

The placement of inclusion, diversity, and monitoring among the driving components is another significant finding. This result suggests that meritocracy should not be conceptualized narrowly as competition among candidates based solely on individual scores, but rather as a system in which all qualified individuals have equitable access to employment opportunities and in which discriminatory or exclusionary mechanisms are systematically monitored. Equality of opportunity and employment justice emerged as an important outcome-oriented component, indicating that fairness is produced through prior institutional arrangements rather than through declarations of nondiscrimination alone. This conclusion is consistent with sustainable and common-good approaches to HRM, which argue that human resource systems should serve broader stakeholder interests and incorporate fairness, dignity, and social responsibility into organizational decision-making [34, 35]. It also resonates with research demonstrating that values, competencies, and organizational commitments can influence responsible employee behavior [36]. Within Qom Municipality, a meritocracy-based system therefore requires regular analysis of recruitment demographics, examination of unintended bias, transparent publication of employment criteria, and institutional mechanisms capable of correcting inequitable outcomes.

Leadership and organizational culture also emerged as a foundational condition within the modeled system. This finding is theoretically important because formal recruitment policies are implemented through managerial interpretation and daily organizational behavior. If organizational leaders tolerate favoritism, informal influence, opaque appointments, or inconsistent enforcement of competency standards, the existence of formal merit-based procedures is unlikely to generate genuine meritocracy. Conversely, leaders who model ethical conduct, insist on transparency, and support competency-based decision-making can institutionalize merit-oriented norms throughout the organization. The result is consistent with evidence that leadership competencies facilitate knowledge sharing and employee performance through social and relational mechanisms [3]. It also corresponds with research emphasizing the importance of ethical development in human resource systems [25]. The identification of corporate governance and professional ethics as an important intermediate component further supports this interpretation. Meritocracy in public organizations is not simply a matter of technical competence; it also requires ethical governance, stakeholder responsibility, internal controls, and accountability. Accordingly, leadership culture may determine whether competency frameworks are used as genuine decision criteria or merely as symbolic administrative instruments.

The intermediate placement of competency-based training and performance appraisal indicates that these components operate as linkage mechanisms between institutional foundations and eventual recruitment outcomes. Training is necessary because competency-based recruitment does not eliminate the need for development; rather, it provides more accurate information about development needs. Once competency gaps have been identified, targeted training can be designed to align employee capabilities with organizational requirements. This interpretation supports research emphasizing systematic competency development as a prerequisite for organizational performance [8, 9]. It is also compatible with the view that training quality should be systematically managed and linked to workforce requirements [24]. Moreover, contemporary work environments require continuous competency development because technological and organizational transformations alter the skills employees need over time [9]. Thus, in Qom Municipality, competency-based recruitment should be linked to post-entry training and continuous development rather than being viewed as a one-time screening mechanism.

The findings regarding performance appraisal similarly indicate that merit-based recruitment must be reinforced through later stages of the employee lifecycle. A person recruited on the basis of competency should subsequently be evaluated using criteria consistent with the same competency architecture. Otherwise, misalignment may emerge between recruitment expectations and organizational rewards. The present findings support previous research identifying performance evaluation as a key instrument for institutionalizing meritocracy [16]. They are also consistent with evidence supporting the use of structured competency models and multicriteria methods in promotion decisions [22]. Assessment and development centers are particularly relevant in this respect because they allow organizations to evaluate multiple competencies using simulations, behavioral exercises, and structured assessment processes. Previous studies in municipal and managerial settings have demonstrated the usefulness of assessment and development centers for identifying and developing managerial competencies [18, 20]. Similarly, research in Tehran Municipality has emphasized the importance of identifying and prioritizing appropriate competency assessment dimensions for managerial roles [19]. The current results therefore suggest that recruitment, appraisal, and development should share a common competency architecture to prevent fragmentation across HR processes.

Knowledge management and succession planning, employer branding and talent attraction, and competency-based selection and assessment were also positioned as important parts of the structural chain leading toward effective merit-based recruitment. This result confirms that organizations must attract competent applicants before they can select them and must retain and develop competent individuals after appointment. Employer branding can communicate organizational values, meritocratic standards, and career opportunities to potential candidates, thereby improving the quality of the applicant pool. The systematic attraction of high-potential talent has likewise been emphasized in models of elite and talented workforce recruitment [13]. From a human capital perspective, recruitment should therefore be interpreted as an investment decision in future organizational capability rather than merely a response to current vacancies [14]. Knowledge management and succession planning further ensure that organizational competencies are preserved, transferred, and renewed. This is especially important in public organizations where the departure of experienced managers can generate significant knowledge loss. The finding that these components are interconnected with assessment, training, and leadership is also consistent with competency development models that emphasize organizational learning and continuous capability building [26, 27].

The model also identified culture and deviant behaviors and weaknesses in monitoring systems as critical components requiring attention. Their inclusion demonstrates that the pathology of recruitment is as important as the design of desirable HR practices. Favoritism, relationship-based appointments, ceremonial bureaucracy, lack of accountability, weak internal controls, and disregard for formal regulations can neutralize technically sound competency systems. These dysfunctions explain why meritocracy often requires institutional reform rather than isolated procedural improvements. This interpretation reinforces prior evidence concerning barriers to merit-based recruitment [17] and underscores the importance of formal governance mechanisms. It is also compatible with the broader finding that employee behavior is influenced not only by individual competence but also by organizational and contextual conditions [38]. Therefore, reducing dysfunctional behaviors should be treated as a structural component of meritocracy rather than as a secondary ethics issue.

Overall, the ISM and MICMAC findings demonstrate that merit-based human resource recruitment in Qom Municipality should be understood as a layered system in which institutional drivers shape intermediate HR mechanisms, which in turn generate more visible recruitment and career outcomes. This structural interpretation extends previous studies that have used ISM to clarify interdependencies among competency-development indicators [21]. The present model suggests that structural reform, data governance, inclusive monitoring, and leadership culture must precede or support competency assessment, training, performance evaluation, talent management, and career systems. This sequencing is important because it provides decision-makers with a practical logic for reform: foundational institutional conditions should be strengthened before expecting improvements in dependent outcomes such as transparent competency-based recruitment, equality of opportunity, and sustainable career progression. The study therefore contributes to the literature by integrating competency management, meritocracy, governance, data analytics, justice, and organizational culture into a single hierarchical model appropriate to a municipal public-sector context.

The present study has several limitations that should be considered when interpreting its findings. First, the qualitative and structural judgments were obtained from a relatively small purposively selected group of experts, which was appropriate for an exploratory expert-based design but may limit the transferability of the resulting model to other municipalities or public organizations. Second, the research was conducted in Qom Municipality, whose organizational, cultural, legal, and

social context has distinctive characteristics; consequently, the hierarchy of components may differ in municipalities operating under different institutional conditions. Third, ISM is based on expert judgments concerning the existence and direction of relationships among variables and therefore does not estimate the magnitude of causal effects in the same manner as statistical causal models. Fourth, the cross-sectional design captures expert perceptions at a particular point in time and cannot determine how the proposed relationships may evolve after policy or technological changes. Finally, although MICMAC analysis provides a useful classification based on driving and dependence power, it simplifies complex organizational relationships into discrete categories and may not fully represent nonlinear, reciprocal, or time-dependent dynamics among the components.

Future studies should replicate the proposed model in other municipalities, governmental agencies, and public-service organizations to assess its contextual stability and identify components that are common across institutions versus those that are organization-specific. Researchers could subsequently operationalize the identified dimensions as measurable constructs and test the proposed relationships using structural equation modeling, partial least squares structural equation modeling, or longitudinal designs to estimate the strength and temporal direction of the relationships suggested by the ISM model. Comparative studies across municipalities of different sizes and administrative capacities would also help clarify whether the importance of legal reform, data infrastructure, leadership culture, and inclusion changes according to organizational maturity. Further research may integrate fuzzy ISM, DEMATEL, analytic network process, or system dynamics techniques to model uncertainty and reciprocal effects more precisely. Longitudinal intervention studies would be particularly valuable for determining whether reforms implemented in the foundational variables actually produce measurable improvements in recruitment fairness, competency fit, employee performance, retention, and public trust.

For practical implementation, Qom Municipality should adopt the proposed hierarchy as a phased reform roadmap rather than attempting to introduce all components simultaneously. Initial attention should be directed toward revising recruitment regulations, clarifying decision rights, strengthening internal controls, establishing transparent data systems, and defining measurable indicators of competency, fairness, and recruitment effectiveness. Senior managers should formally commit to merit-based appointments and ensure that informal influence, favoritism, and nontransparent exceptions are documented and controlled. An indigenous competency framework should then be developed for job families and managerial levels and linked directly to recruitment criteria, structured interviews, assessment centers, performance appraisal, training plans, promotion, compensation, and succession planning. Recruitment and promotion data should be periodically analyzed for demographic disparities, unexplained deviations from competency criteria, and potential bias. Finally, the municipality should establish a permanent governance mechanism responsible for monitoring meritocracy indicators, reviewing complaints, evaluating the effectiveness of recruitment reforms, and reporting results to senior management and relevant stakeholders.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

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

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