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Designing a Green Human Resource Management Policy-Making Model in Municipalities of the Country

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A B S T R A C T

The purpose of this study was to design a model for green human resource management (GHRM) policy-making in the country's municipalities, using a mixed-method approach. The statistical population in the design phase included faculty members specializing in public administration and urban planning in higher education institutions, mayors and senior managers of the country's municipalities, as well as experts and specialists in the research topic. In the validation phase, professors in the fields of public administration and urban planning at higher education institutions in Mashhad were included, and in the quantitative phase, all senior and middle managers from 13 municipal districts of Mashhad and 22 affiliated municipal organizations totaling 354 individuals participated. In the qualitative phase, 19 experts were selected through snowball sampling. In the validation phase, 17 experts were chosen using purposive sampling, and in the quantitative phase, 185 participants were selected by cluster random sampling based on Cochran's formula. For data analysis, the qualitative phase employed the grounded theory method following Corbin and Strauss (1998), using open, axial, and selective coding with semi-structured interviews as the data collection tool. In the validation phase, the Delphi method was applied in three stages using an expert evaluation checklist analyzed in SPSS. In the quantitative phase, structural equation modeling was conducted using a 118-item questionnaire in SmartPLS software. To ensure validity and reliability in the qualitative section, necessary checks such as credibility (expert review), confirmability (expert audit), and consensus methods were applied. During the validation stage, the content of the expert evaluation checklist was confirmed for clarity and comprehensibility by several academic and organizational experts, and its reliability was established through the test–retest method with a coefficient of 0.88. In the quantitative section, questionnaire validity was confirmed through face, content, and construct validity (with convergent validity ranging from 0.557 to 0.736 and discriminant validity greater than inter-construct correlations). Reliability was verified using factor loadings of items, Cronbach's alpha coefficients for components (ranging from 0.734 to 0.835), and composite

reliability (ranging from 0.834 to 0.893). According to the findings from the qualitative and validation phases, the final model comprised 11 main categories and 27 subcategories, as follows: causal conditions (1. value-orientation weakness, 2. policy vacuum, 3. managerial unawareness, 4. cultural resistance, 5. lack of infrastructure); contextual conditions (1. organizational structure, 2. institutional capacity, 3. municipal economic situation, 4. organizational culture, 5. influence of stakeholder groups); core category (central phenomenon) (1. the process of designing green HRM policy, 2. mechanisms for implementing green HRM policy); intervening conditions (1. top management support, 2. information technology infrastructure, 3. legal and regulatory support, 4. acceptance of organizational changes, 5. HR experts' competencies); strategies (1. green training and empowerment, 2. green recruitment and selection, 3. green performance evaluation, 4. green rewarding and motivation, 5. employee green commitment and participation); and consequences (1. effectiveness of green policy, 2. urban environmental sustainability, 3. employee organizational commitment, 4. municipal reputation and public image, 5. organizational innovation in HRM), with 118 indicators. The results of the quantitative phase confirmed that the dimensions and components of the research model were validated in the real statistical population (Mashhad Municipality).

Keywords: *policy-making, human resources, green human resource management.*

1. Introduction

The discourse surrounding sustainable development has increasingly highlighted the critical role of organizations in aligning their operational strategies with environmental responsibility and social accountability. Within this context, Green Human Resource Management (GHRM) has emerged as a strategic approach to integrate environmental considerations into human resource practices, thereby linking sustainability with organizational performance. Over the past two decades, scholars and practitioners alike have examined how GHRM can serve as a foundation for building resilient, efficient, and environmentally responsible organizations that respond to the challenges of climate change, urbanization, and policy transformation (Ahmad, 2015; Goswami & Ranjan, 2015). This scholarly focus reflects not only the pressing global sustainability agenda but also the necessity for organizations, particularly public institutions such as municipalities, to institutionalize green values within their HR systems and policies.

Green HRM emphasizes environmentally oriented recruitment, training, performance evaluation, and incentive structures designed to foster green behaviors among employees. Such practices are not merely symbolic but are vital for operationalizing sustainable strategies at the organizational level. For instance, research has demonstrated that the successful implementation of GHRM fosters improved organizational efficiency and encourages innovation in work processes, particularly when coupled with knowledge-sharing mechanisms (Duah et al., 2025). Similarly, studies on small and medium enterprises (SMEs) reveal that implementing green HR practices often faces structural and cultural hurdles, underscoring the importance of policy frameworks that can support institutional adoption (Ahmad, 2015). These findings highlight that GHRM is not only a set of operational practices but also a transformative paradigm that shapes organizational culture and strategic orientation (Chreif & Farmanesh, 2022).

In parallel, the concept of green leadership has been introduced to frame the role of decision-makers in fostering sustainability-oriented policies. Leadership plays a pivotal role in ensuring that green HR policies are not only formulated but also effectively implemented and monitored. A systematic review has emphasized that leadership commitment to environmental responsibility is a decisive factor in aligning organizational goals with sustainability, and it provides future directions for embedding green leadership into policymaking frameworks (Nurasa et al., 2025). Leadership-driven policy development ensures that environmental considerations permeate multiple levels of the organization, fostering cultural acceptance and behavioral alignment with green practices. Thus, GHRM should be studied not only as an operational HR strategy but also as part of broader governance and leadership systems that guide organizational transformation.

The literature underscores the necessity of developing comprehensive models of GHRM that can capture its

multidimensionality. Earlier efforts have conceptualized GHRM in terms of structural dimensions such as recruitment, training, and performance management (Tavakoli et al., 2018). Building on this, researchers have developed more integrative frameworks that incorporate cultural, institutional, and policy perspectives. For instance, a study conceptualized the dimensions and components of GHRM and proposed a model that links organizational culture, stakeholder influence, and institutional mechanisms to effective green HR outcomes (Janali Zadeh Ghavini et al., 2023). Similarly, another investigation categorized the dimensions of GHRM with a focus on policy-making approaches, stressing the role of institutional design in determining the success of green HR initiatives (Najati et al., 2024). These frameworks are crucial in moving beyond fragmented understandings of GHRM toward more systemic models that acknowledge its strategic significance in policy and governance contexts.

From a practical standpoint, municipalities as local governance bodies represent critical arenas for applying GHRM policies, given their direct impact on urban sustainability and citizen welfare. Research on municipal policymaking has demonstrated the effectiveness of mixed-approach models in urban service provision, emphasizing how governance structures can integrate sustainability objectives into local administrative frameworks (Sharifi et al., 2023). Municipal budgets and resource allocations also reflect the capacity of local governments to prioritize green initiatives, as illustrated in studies on budget transparency and citizen-oriented financial planning in cities such as Mashhad (Vakilzadeh et al., 2019). Embedding GHRM in municipalities therefore requires not only internal HR practices but also alignment with budgetary, governance, and policy systems that support sustainability. This convergence of HR practices and municipal governance highlights the necessity of context-sensitive models that adapt GHRM principles to the realities of local public administration.

The adoption of GHRM is further shaped by the broader institutional and cultural context. For example, cultural policy frameworks in the Iranian context emphasize the integration of Islamic and local values in organizational policies, suggesting that green HR practices must also align with cultural norms and policy traditions (Molamirzai, 2016). Similarly, the design of science and technology parks within innovation systems illustrates how policy models can serve as drivers of systemic change, providing lessons for the design of HRM systems that foster innovation and sustainability (Karimi Tararani et al., 2018). These insights suggest that GHRM should not be conceptualized solely as a managerial tool but as a socio-technical system embedded in cultural, institutional, and policy contexts that shape its implementation and effectiveness.

Empirical evidence also supports the relationship between green HR practices and organizational performance outcomes. Studies have shown that adopting green HR and manufacturing practices enhances organizational performance by improving resource efficiency, reducing waste, and fostering innovation (Rehman et al., 2016). Moreover, applying green HR practices in educational institutions has been found to support sustainable development by integrating interpretive structural modeling and analytic hierarchy processes into decision-making (Goel et al., 2022). This indicates that GHRM is adaptable across sectors, from manufacturing to education, and underscores its potential to contribute to both organizational efficiency and societal sustainability. Importantly, research also points to the mediating roles of creativity and HR practices in shaping organizational sustainability, highlighting the interplay between human capital, organizational culture, and green practices (Zahrani, 2022). Such evidence reinforces the argument that GHRM contributes to sustainability through multiple pathways—operational, cultural, and strategic.

At the same time, scholars caution that implementing GHRM faces substantial barriers and challenges. These include limited institutional capacity, lack of awareness among managers, resistance to change, and insufficient infrastructure for supporting green initiatives (Rezai et al., 2020). Structural weaknesses in HR systems, as well as gaps in policy frameworks, hinder the widespread adoption of green HR practices, especially in public organizations. Overcoming these barriers requires not only innovative policy models but also leadership commitment, stakeholder involvement, and alignment with broader sustainability agendas. Such challenges call for systematic models that can integrate these diverse factors into coherent strategies for effective GHRM implementation (Asghari Aghamashhad et al., 2024).

Recent contributions to the literature have emphasized the importance of policy-driven approaches in embedding GHRM within organizational and governance structures. Designing models that integrate HR development policies with green principles has been particularly important in sectors such as the oil industry, where sustainability concerns intersect with strategic national priorities (Akbari

et al., 2024). These sectoral models demonstrate the feasibility of embedding green HR policies in highly resource-intensive industries, offering lessons for municipalities that must similarly balance operational efficiency with sustainability objectives. Furthermore, designing strategic models for GHRM highlights the critical role of foresight and planning in ensuring that green HR practices contribute to long-term organizational resilience (Asghari Aghamashhad et al., 2024).

The global and local significance of GHRM lies in its potential to align organizational practices with sustainable development goals (SDGs). From the global perspective, GHRM supports the broader sustainability agenda by fostering environmental responsibility at the organizational level (Chreif & Farmanesh, 2022). Locally, it strengthens the institutional capacity of municipalities and other organizations to deliver sustainable services, thereby contributing to improved urban governance and citizen welfare (Sharifi et al., 2023). The convergence of these perspectives underscores the need for context-sensitive models that integrate global principles with local realities.

In light of these scholarly contributions, the present study builds upon prior models of GHRM while addressing their limitations. Specifically, it seeks to design a comprehensive policy-making model for GHRM in municipalities, integrating causal, contextual, and intervening conditions with strategies and outcomes. By situating HR practices within broader policy frameworks, the study contributes to advancing both theoretical understanding and practical applications of GHRM in local governance contexts. In doing so, it responds to the call for systematic and policy-driven approaches that can overcome the structural, cultural, and institutional barriers to GHRM adoption (Najati et al., 2024; Rezai et al., 2020).

Ultimately, this introduction has highlighted the importance of GHRM as a strategic paradigm for aligning HR practices with sustainability objectives. It has reviewed existing conceptual and empirical contributions, identified challenges and barriers, and underscored the necessity of comprehensive models that integrate HRM with policy, culture, and governance. The study's significance lies in its focus on municipalities as critical arenas for embedding GHRM, reflecting both the global sustainability agenda and local governance imperatives. By building upon prior research and situating GHRM within the broader context of policy-making and leadership, the study aims to advance a model that not only conceptualizes but also operationalizes green HRM for sustainable urban governance.

2. Methods and Materials

The research method was mixed. In the qualitative section, the grounded theory method with the systematic approach of Strauss and Corbin (1998) was applied, including open, axial, and selective coding. In the validation section, the Delphi method based on the approach of Helmer and Dalkey (1997) was employed. In the quantitative section, the structural equation modeling (SEM) technique was used. In the qualitative stage, experts and specialists were utilized to ensure that the interviews had appropriate validity.

The participants in the qualitative section consisted of: (1) academic experts (faculty members in the fields of public administration, decision-making and public policy, human resource management, and urban planning in higher education institutions), (2) organizational experts (mayors and senior managers of municipalities across the country), and (3) specialists and experts in the fields of "policy-making" and "green human resource management." To conduct sampling in the qualitative section, a spectrum of key informants in the field of the research topic was selected through snowball sampling. This process of selection and consultation continued until theoretical saturation was reached, meaning that the views of experts in the final interviews did not provide new information upon content analysis. Table 1 presents the characteristics of the 19 experts.

Table 1

Information on Interviewees

No.	Gender	Field of Study	Academic Degree	Experience (years)	Organizational Position or Job	Code in Survey
1	Male	Public Administration – Decision-Making and Public Policy	PhD Student	21	Municipality	N1
2	Female	Urban Management	PhD	17	Faculty Member, Islamic Azad University	N2

3	Male	Public Administration – Human Resource Management	PhD	22	Faculty Member, Islamic Azad University	N3
4	Male	Public Administration – Comparative and Development	PhD Student	19	Municipality	N4
5	Male	Public Administration – Human Resource Management	PhD	28	Faculty Member, Payame Noor University	N5
6	Male	Public Administration – Human Resource Management	PhD	24	Faculty Member, Islamic Azad University	N6
7	Male	Urban Planning	Master's	18	Municipality	N7
8	Male	Urban Planning	PhD	23	Faculty Member, Islamic Azad University	N8
9	Male	Public Administration – Human Resource Management	Master's	22	Municipality	N9
10	Female	Public Administration – Comparative and Development	PhD Student	19	Municipality	N10
11	Male	Public Administration – Organizational Behavior	PhD	21	Faculty Member, Ministry of Science	N11
12	Female	Public Administration – Decision-Making and Public Policy	PhD	28	Faculty Member, Ministry of Science	N12
13	Female	Public Administration – Decision-Making and Public Policy	PhD Student	26	Municipality	N13
14	Male	Public Administration – Comparative and Development	PhD	17	Faculty Member, Payame Noor University	N14
15	Male	Urban Planning	PhD	9	Faculty Member, Ministry of Science	N15
16	Male	Public Administration – Human Resource Management	PhD Student	8	Municipality	N16
17	Female	Urban Planning	PhD	11	Faculty Member, Payame Noor University	N17
18	Male	Public Administration – Human Resource Management	Master's	27	Municipality	N18
19	Male	Public Administration – Human Resource Management	PhD	23	Municipality	N19

The sampling method in the validation phase was purposive non-random sampling, where 17 experts were selected from faculty members in the fields of public administration (decision-making and public policy, and human resources), urban management, and urban planning in higher education institutions in Mashhad. In the quantitative phase, the study population consisted of 354 senior and middle managers from 13 municipal districts of Mashhad and 22 affiliated municipal organizations, including the Fire Department, Transportation Organization, Cemeteries Organization, Waste Management Organization, Construction Organization, Cultural-Social-Sports Organization, Urban Landscape and Beautification Organization, Fruit and Vegetable Markets Organization, among others.

The sampling method in the quantitative section was cluster random sampling. Each of the 13 municipal districts of Mashhad was divided into three clusters, and the municipalities within each cluster represented a sub-cluster. The questionnaires were distributed randomly in each sub-cluster proportional to the population of that sub-cluster. The sample size was determined using Cochran's formula, resulting in 185 individuals.

Semi-structured interviews were used as the data collection tool in the qualitative section, while the validation section employed an expert evaluation checklist. In the quantitative phase, data were collected using a 118-item questionnaire derived from the conceptual model developed from the qualitative study. Accordingly, the variables in the conceptual model were transformed from qualitative to quantitative form.

For determining validity and reliability in the qualitative section (semi-structured interviews), necessary checks including credibility (expert review) and confirmability (re-audit by experts) were applied. For validity, transcripts of the first five interviews, along with the initial coding derived from them, were provided to the interviewed experts to evaluate the researcher's interpretations. In cases of inconsistency, necessary corrections were made to ensure alignment with the experts' intended meaning. For reliability, in the final stage, the derived categories were returned to several initial participants for review and confirmation, with their suggestions incorporated.

For validity in the validation phase (expert evaluation checklist), the content of the checklist was reviewed by several academic and organizational experts to ensure

comprehensibility, clarity, and adequacy. Revisions were made where needed. To assess reliability, the test–retest method was applied. The checklist was distributed to 10 individuals from the statistical population in two separate rounds with a two-week interval. The correlation coefficient between the two sets of results, calculated in SPSS, was 0.88, confirming reliability. In the quantitative section, questionnaire validity was confirmed through face, content, and construct validity (convergent validity ranging from 0.557 to 0.736, and discriminant validity greater than inter-construct correlations). Reliability was verified using factor loadings of items, Cronbach's alpha coefficients for components (0.734–0.835), and composite reliability (0.834–0.893).

Data analysis was conducted in parallel with data collection, where each portion of data was analyzed immediately after collection. Grounded theory analysis consisted of three types of coding: (1) open coding, (2) axial coding, and (3) selective coding.

In the validation section, the identified components from the qualitative phase were validated by determining their importance in explaining the model, using expert surveys, the Delphi technique, and descriptive analysis in SPSS. The Delphi checklist was administered in three rounds. The Delphi method is a qualitative research approach used to reach consensus in group decision-making. It involves a series of questionnaires or iterative rounds with controlled feedback to achieve agreement among a group of experts on a specific topic. In this study, the Delphi method was completed in three rounds, and the findings from each round were reported separately. To survey experts, the components of each of the five categories—causal conditions, contextual conditions, intervening conditions, strategies, and consequences—were provided in a five-point Delphi checklist (ranging from 1 = least important to 5 = most important). Each Delphi round was conducted at one-week intervals until completion of the third round.

To analyze the data collected from the questionnaire in the quantitative section, both descriptive and inferential statistical methods were applied. To test the research model, data analysis was performed using structural equation modeling (SEM). SEM is a statistical model for examining relationships between latent (unobserved) variables and observed variables. In other words, SEM is a powerful statistical technique that simultaneously combines measurement models (confirmatory factor analysis) and structural models (regression or path analysis) in a single statistical test. Path analysis, primarily represented through path diagrams, illustrates potential causal relationships among variables.

For testing the research model, SEM was employed, and the path analysis test was used. The data from the questionnaires were analyzed using SPSS and Smart PLS software.

3. Findings and Results

The principal focus of the study concerned exploring and identifying the influencing factors related to the main category, subcategory, and criteria for the model of "green human resource management (HRM) policy-making in municipalities" as the core concept. To achieve this, the main category, subcategory, and indicators were presented with regard to (1) open coding (in two stages: initial coding and secondary coding), (2) axial coding, and (3) selective coding, based on data obtained from content analysis of in-depth, exploratory interviews with key experts and through refinement of conceptual codes. Accordingly, in the first step of open coding, the data were examined at the sentence and phrase level for each interview, and conceptual codes were extracted from the interview transcripts. In the next stage, through refinement and reduction, subcategories and indicators were organized under the main category and named through continuous review. To ensure the appropriate organization of each main category and subcategory, the interview transcripts were re-examined, and this was carried out by reviewing indicators to reach logical saturation for the main and sub categories. Open and axial coding were halted once a meaningful classification was achieved after several rounds of reviewing the interview transcripts.

A – Step One: Open Coding – Initial Coding Stage

According to the systematic approach of Strauss and Corbin (1998), open coding comprises two stages: initial coding and secondary coding. In the initial coding stage, 302 conceptual codes were identified.

Step One: Open Coding – Removal of Duplicate Codes and Final Open Codes

After reviewing and reconciling these codes, duplicate codes had to be removed; 184 codes from among the initial codes were eliminated, resulting in 118 codes in the end.

Step One: Open Coding – Secondary Coding Stage; Determination of Subcategory (Sub-Class)

According to the systematic approach of Strauss and Corbin (1998), in the second open-coding stage—known as secondary coding—the subcategory (sub-class) is determined. The purpose of secondary coding is to establish

relationships among the generated criteria, and this is typically performed based on the paradigm model. Table 2 presents the results of determining the subcategories (sub-classes). It should be noted that in the first stage of open coding, out of the 302 initial codes, after reviewing these codes and removing duplicates, 184 codes were eliminated; ultimately, the determination of the subcategories (sub-classes) was performed with the final 118 codes.

Table 2

Results of Determining Subcategories (Sub-Classes)

Criterion	Subcategory	Row
Incorporating environmental criteria in job descriptions and vacancy notices – prioritizing applicants with environmental experience or commitment in hiring – using behavioral interviews focused on sustainability values – assessing the alignment of individuals' environmental attitudes with the organization's green policies	Green recruitment and selection	1
Lack of digital infrastructure for implementing green HRM – absence of a system to monitor environmental behaviors – failure to provide technology platforms for green training – structural weaknesses in supporting green HRM implementation	Lack of infrastructure	2
Employing modern digital tools in HR processes and HR structures with a sustainability orientation – designing and implementing innovative models for green training of employees – developing performance appraisal systems aligned with green approaches – utilizing innovative technologies in urban HRM	Organizational innovation in HR	3
Centralization of decision-making at higher municipal management levels – existence of a hierarchical structure with low flexibility – precise definition of responsibilities and job descriptions – streamlining administrative processes to accelerate policy implementation – enhancing organizational flexibility to adapt to green policies	Organizational structure	4
Employee resistance to correcting environmentally harmful behaviors – implicit opposition to sustainability-based changes and the absence of norms supporting green behavior – resistance by middle managers to green HRM policies – organizational disbelief in the necessity of sustainable development	Cultural resistance	5
Defining performance indicators related to reducing resource and energy consumption – measuring employees' adherence to eco-friendly administrative procedures – including green goals in annual individual and team performance appraisals – measuring employee participation in collective environmental actions – using green feedback as a basis for performance improvement – preparing performance reports emphasizing environmental achievements	Green performance evaluation	6
Institutionalizing laws and regulations supporting green HRM – creating formal structures for green HRM policy-making – developing digital infrastructures to implement green policies – leveraging specialized knowledge in sustainable HRM – designing and implementing performance evaluation systems based on green indicators	Institutional capacity	7
Designing training programs with environmental content for employees and managers – developing sustainable decision-making skills in HR processes – institutionalizing environmental responsibility in induction training – evaluating the effectiveness of environmental training courses in improving green behavior	Green training and empowerment	8
Managers' unfamiliarity with green HRM concepts – disregarding environmental considerations in decision-making – lack of managerial motivation to implement green HRM – absence of specialized training programs for green managerial empowerment	Managerial unawareness	9
Reducing natural resource consumption by reforming HR administrative procedures – increasing the use of green technologies in organizational processes – reducing environmental pollutants from administrative activities – applying green management principles to waste and energy management	Urban environmental sustainability	10
Allocating specific financial resources to green HRM programs – financial stability and continuity for implementing long-term policies – capacity to fund environmental training and actions – prioritizing budget expenditures based on green HRM goals	Municipal economic status	11
Designing incentive systems based on participation in organizational green programs – granting financial or non-financial rewards for pro-environmental behaviors – establishing organizational competitions centered on environmental performance – using public recognition to model green behavioral patterns in the organization	Green rewarding and motivation	12
Demonstrating the practical commitment of senior managers to green HRM in macro decisions – allocating adequate financial and human resources for policy implementation – active participation of top managers in environmental meetings and programs – managerial role-modeling in observing sustainable development principles – exercising managerial influence to remove barriers to green policy implementation	Top management support	13
Creating coordination structures and cross-functional committees for policy execution – developing operational guidelines and procedures aligned with green objectives – conducting targeted training to institutionalize green policies – designing monitoring and evaluation systems to track policy implementation	Mechanisms for implementing green HRM policy	14
Improving public trust in the municipality through green performance – enhancing the municipality's social image in media and public opinion – creating a green brand for the municipality at national and local levels – increasing citizen satisfaction through the organization's environmental accountability	Municipal reputation and public image	15
Absence of a formal document for green HRM – failure to define environmental criteria in recruitment and hiring – lack of environmental training policy for employees – no program to develop green HRM capabilities – green HRM absent from policy-making priorities – failure to consider green indicators in performance evaluation	Policy vacuum	16
Developing skills for drafting and implementing green HRM policies – increasing practitioners' hands-on experience in executing environmental programs – the ability to use analytical tools to evaluate the effectiveness of green policies – strengthening HR experts' communication and training skills to secure employee participation	Competency of HR experts	17
Promoting organizational beliefs and values that support environmental sustainability – creating a supportive climate by managers toward green HRM initiatives – facilitating organizational change acceptance related to green HRM – institutionalizing eco-compatible behaviors in the workplace	Organizational culture	18

Monitoring the extent to which green HRM policy goals are achieved – measuring the alignment of HR actions with environmental standards – evaluating the efficiency of recruitment, training, and motivation processes in the green approach – examining the impact of green policies on improving HR productivity – analyzing policy implementation quality at municipal headquarters and line units	Effectiveness of green policy	19
Influence of media pressure on the approval of green HRM policies – active participation of NGOs in the green policy-making process – supervisory and oversight role of the City Council in the field of green HRM – municipal accountability to the environmental and social demands of the local community	Influence of stakeholder groups	20
Implementing e-learning platforms with environmental content – creating an integrated database to record and analyze green HRM data – using digital tools for environmental monitoring and reporting – providing stable communication infrastructure to facilitate green policy implementation	Information technology infrastructure	21
Reducing employee resistance by involving them in decision-making – raising employee awareness of the individual and organizational benefits of green HRM – gradually aligning organizational structures with the requirements of green policies – facilitating learning and adaptation to the new organizational culture	Acceptance of organizational changes	22
Comprehensive analysis of the HR situation with an environmental perspective – identifying the organization's green needs and prioritizing intervention areas – formulating measurable, sustainability-based goals – using analytical tools to select the most appropriate policy options – engaging key stakeholders in the policy-formulation process	Process of designing green HRM policy	23
Strengthening employees' sense of belonging to the organization through green policies – increasing intrinsic motivation toward sustainable development and voluntary participation in the organization's environmental projects – enhancing alignment between individual values and the organization's green goals – reinforcing an organizational loyalty culture grounded in environmental responsibility	Employee commitment to the organization	24
Failure to institutionalize environmental beliefs in organizational culture – neglect of environmental ethics in organizational behavior – omission of green values in HR policies – disregard for green motivation among employees – lack of a professional outlook on environmental responsibility	Weakness in value-orientation	25
Drafting and enforcing binding regulations in green HRM – institutionalizing legal provisions in recruitment, appraisal, and training processes – updating HR laws considering sustainability requirements – establishing legal enforcement guarantees for environmental violations by HR	Legal and regulatory support	26
Increasing employees' sense of belonging to the organization's environmental values and goals – voluntary participation in intra-organizational green campaigns and projects – encouraging employees to submit proposals for environmental improvement – creating communication channels for continuous dialogue on green behaviors	Employee green commitment and participation	27

B – Step Two: Axial Coding

According to the systematic approach of Strauss and Corbin (1998), in axial coding, the subcategories are grouped into broader categories called main classes. Table 3 presents the results of axial coding. At this stage of coding, the 118 final codes, which had been organized into 27 subcategories (sub-classes), were placed under 11 main classes.

Table 3

Results of Axial Coding

Row	Main Class	Subcategory (Sub-Class)
1	Structural and Policy Weakness	Policy vacuum – Lack of infrastructure
2	Cultural and Knowledge Weakness	Weakness in value-orientation – Managerial unawareness – Cultural resistance
3	Institutional and Structural Capacity	Organizational structure – Institutional capacity – Municipal economic status
4	Social and Policy Environment	Organizational culture – Influence of stakeholder groups
5	Green HRM Policy-Making in Municipalities	Process of designing green HRM policy – Mechanisms for implementing green HRM policy
6	Institutional Capability for Implementing Green Policy	Top management support – HR experts' competency – Information technology infrastructure
7	Structural and Legal Dynamics of Policy-Making	Legal and regulatory support – Acceptance of organizational changes
8	Executive Strategies of Green HRM	Green training and empowerment – Green recruitment and selection – Green performance evaluation
9	Motivational and Cultural Strategies of Green HRM	Green rewarding and motivation – Employee green commitment and participation
10	Intra-Organizational (Internal) Results	Effectiveness of green policy – Employee organizational commitment – Organizational innovation in HR
11	Extra-Organizational (External) Results	Urban environmental sustainability – Municipal reputation and public image
12	11 Main Classes	27 Subcategories

The final results of the qualitative analysis at the end of axial coding are presented in Table 4.

Table 4

Classification of Main Classes, Subcategories, and Indicators of the Green Human Resource Management Policy-Making Model in Municipalities

Row	Main Class	Number of Subcategories	Subcategory (Sub-Class)	Number of Indicators
1	Structural and Policy Weakness	2	Policy vacuum – Lack of infrastructure	10
2	Cultural and Knowledge Weakness	3	Weakness in value-orientation – Managerial unawareness – Cultural resistance	13
3	Institutional and Structural Capacity	3	Organizational structure – Institutional capacity – Municipal economic status	14
4	Social and Policy Environment	2	Organizational culture – Influence of stakeholder groups	8
5	Green HRM Policy-Making in Municipalities	2	Process of designing green HRM policy – Mechanisms for implementing green HRM policy	9
6	Institutional Capability for Implementing Green Policy	3	Top management support – HR experts' competency – Information technology infrastructure	13
7	Structural and Legal Dynamics of Policy-Making	2	Legal and regulatory support – Acceptance of organizational changes	8
8	Executive Strategies of Green HRM	3	Green training and empowerment – Green recruitment and selection – Green performance evaluation	14
9	Motivational and Cultural Strategies of Green HRM	2	Green rewarding and motivation – Employee green commitment and participation	8
10	Intra-Organizational (Internal) Results	3	Effectiveness of green policy – Employee organizational commitment – Organizational innovation in HR	13
11	Extra-Organizational (External) Results	2	Urban environmental sustainability – Municipal reputation and public image	8
12	11 Main Classes	27 Subcategories	27 Subcategories	118 Indicators

Step Three: Selective Coding – Placement of Subcategories within the Paradigm Model (Main Categories)

According to the systematic approach of Strauss and Corbin (1998), at the end of open and axial coding, in the stage of selective coding, the subcategories are arranged within the paradigm model. The 27 subcategories (organized under 11 main classes) were categorized into six main categories of the paradigm model, namely: causal conditions, intervening conditions, contextual conditions, core phenomenon, strategies, and consequences. Table 5 presents the results of developing the final model, which illustrates the placement of 27 subcategories within the six main categories of the paradigm model.

Table 5

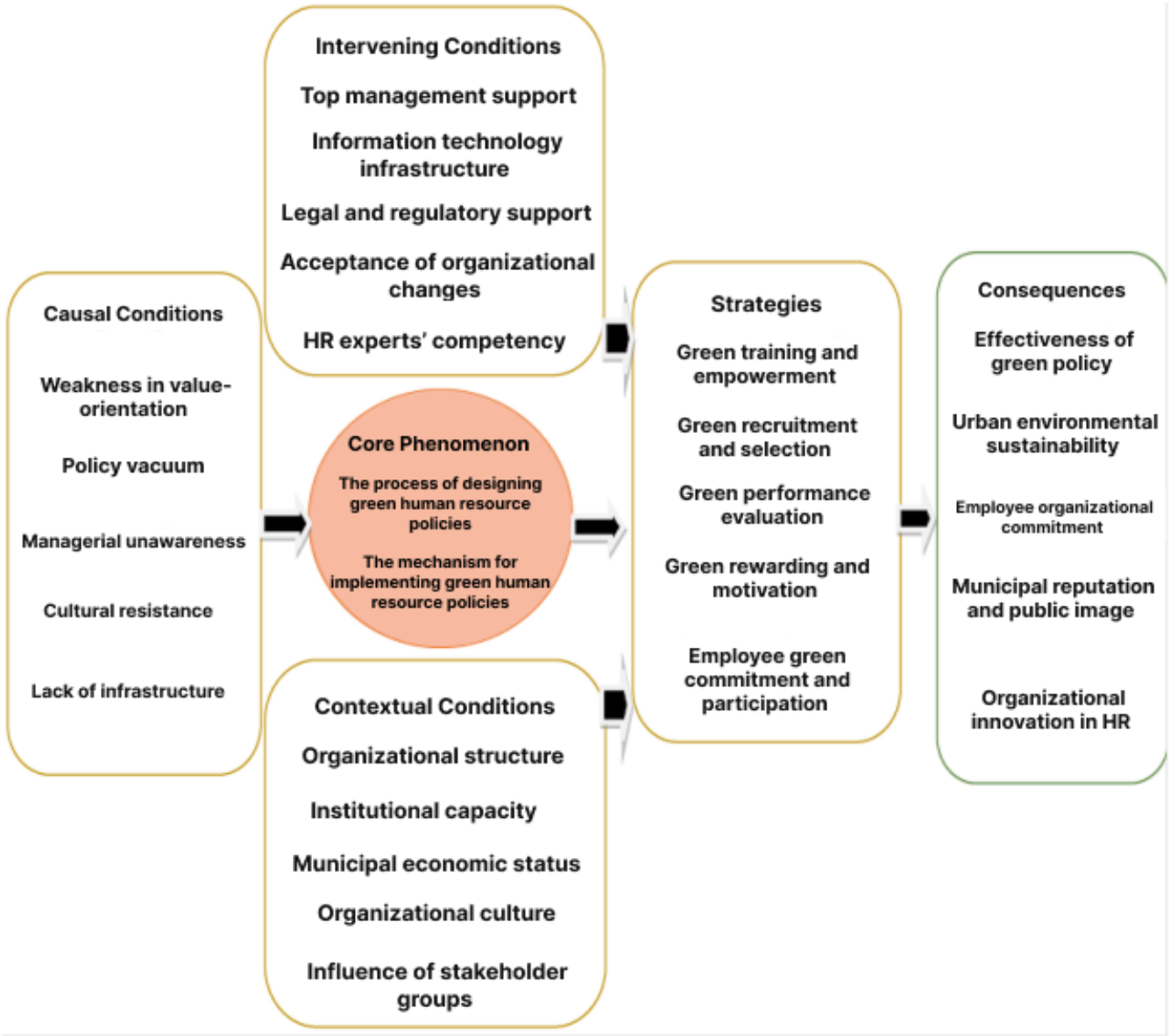
Classification of Main Categories, Classes, Subcategories, and Indicators of the Final Model

Row	Main Category	Main Class	Subcategory (Sub-Class)	Number of Indicators
1	Causal Conditions	Structural and Policy Weakness	Policy vacuum – Lack of infrastructure	10
2		Cultural and Knowledge Weakness	Weakness in value-orientation – Managerial unawareness – Cultural resistance	13
3	Contextual Conditions	Institutional and Structural Capacity	Organizational structure – Institutional capacity – Municipal economic status	14
4		Social and Policy Environment	Organizational culture – Influence of stakeholder groups	8
5	Core Phenomenon	Green HRM Policy-Making in Municipalities	Process of designing green HRM policy – Mechanisms for implementing green HRM policy	9
6	Intervening Conditions	Institutional Capability for Implementing Green Policy	Top management support – HR experts' competency – Information technology infrastructure	13
7		Structural and Legal Dynamics of Policy-Making	Legal and regulatory support – Acceptance of organizational changes	8
8	Strategy	Executive Strategies of Green HRM	Green training and empowerment – Green recruitment and selection – Green performance evaluation	14
9		Motivational and Cultural Strategies of Green HRM	Green rewarding and motivation – Employee green commitment and participation	8
10	Consequences	Intra-Organizational (Internal) Results	Effectiveness of green policy – Employee organizational commitment – Organizational innovation in HR	13
11		Extra-Organizational (External) Results	Urban environmental sustainability – Municipal reputation and public image	8
12	Main Categories of the Paradigm Model	11 Main Classes	27 Subcategories	118 Indicators

After completion of the qualitative stage and identification of main classes, subcategories, and indicators, the paradigm model of green human resource management policy-making in municipalities is presented in Figure 1.

Figure 1

Paradigm Model of the Research



B – Validation Section

Causal Conditions: In the first Delphi round, the most important factor was weakness in value-orientation with a mean of 3.88 and a standard deviation of 0.74, while the least important was lack of infrastructure with a mean of 3.69 and a standard deviation of 0.59. In the second Delphi round, the most important factor was managerial unawareness with a mean of 3.76 and a standard deviation of 0.89, while the least important was cultural resistance with a mean of 3.57 and a standard deviation of 0.78. In the third Delphi round, the most important factor was weakness in value-orientation with a mean of 3.89 and a standard deviation of 0.86, while the least important was lack of infrastructure with a mean of 3.55 and a standard deviation of 0.79. After conducting both the qualitative stage and validation, the final components explaining the causal conditions, following three rounds of the Delphi qualitative technique, included five components: (1) weakness in value-orientation, (2) policy vacuum, (3) managerial unawareness, (4) cultural resistance, and (5) lack of infrastructure. From the perspective of experts, these had acceptable and satisfactory validity.

Contextual Conditions: In the first Delphi round, the most important factor was organizational structure with a mean of 3.92 and a standard deviation of 0.59, while the least important was organizational culture with a mean of 3.62 and a standard deviation of 0.67. In the second Delphi round, the most important factor was the municipal economic status with a mean of 3.98 and a standard deviation of 0.88, while the least important was influence of stakeholder groups with a mean of 3.49 and a standard deviation of 0.71. In the third Delphi round, the most important factor was again the municipal economic status with a mean of 3.90 and a standard deviation of 0.83, while the least important was influence of stakeholder groups with a mean of 3.54 and a standard deviation of 0.58. After qualitative analysis and validation, the final components explaining the contextual conditions, following three Delphi rounds, included five components: (1) organizational structure, (2) institutional capacity, (3) municipal economic status, (4) organizational culture, and (5) influence of stakeholder groups. From the experts' perspective, these had acceptable and satisfactory validity.

Intervening Conditions: In the first Delphi round, the most important factor was legal and regulatory support with a mean of 3.82 and a standard deviation of 0.91, while the least important was HR experts' competency with a mean of 3.64 and a standard deviation of 0.84. In the second Delphi round, the most important factor was top management support with a mean of 3.98 and a standard deviation of 0.80, while the least important was HR experts' competency with a mean of 3.76 and a standard deviation of 0.61. In the third Delphi round, the most important factor was again top management support with a mean of 4.02 and a standard deviation of 0.89, while the least important was HR experts' competency with a mean of 3.75 and a standard deviation of 0.58. After conducting both qualitative analysis and validation, the final components explaining the intervening conditions, following three Delphi rounds, included five components: (1) top management support, (2) information technology infrastructure, (3) legal and regulatory support, (4) acceptance of organizational changes, and (5) HR experts' competency. From the experts' perspective, these had acceptable and satisfactory validity.

Strategies: In the first Delphi round, the most important factor was green rewarding and motivation with a mean of 3.81 and a standard deviation of 0.87, while the least important was green training and empowerment with a mean of 3.51 and a standard deviation of 0.55. In the second Delphi round, the most important factor was green performance evaluation with a mean of 3.93 and a standard deviation of 0.81, while the least important was employee green commitment and participation with a mean of 3.56 and a standard deviation of 0.93. In the third Delphi round, the most important factor was again green performance evaluation with a mean of 3.88 and a standard deviation of 0.80, while the least important was employee green commitment and participation with a mean of 3.60 and a standard deviation of 0.79. After the qualitative stage and validation, the final components explaining the strategies, following three Delphi rounds, included five components: (1) green training and empowerment, (2) green recruitment and selection, (3) green performance evaluation, (4) green rewarding and motivation, and (5) employee green commitment and participation. From the experts' perspective, these had acceptable and satisfactory validity.

Consequences: In the first Delphi round, the most important factor was organizational innovation in HR with a mean of 3.90 and a standard deviation of 0.72, while the least important was urban environmental sustainability with a mean of 3.67 and a standard deviation of 0.93. In the second Delphi round, the most important factor was again organizational innovation in HR with a mean of 3.72 and a standard deviation of 0.94, while the least important was effectiveness of green policy with a mean of 3.39 and a standard deviation of 0.59. In the third Delphi round, the most important factor was urban environmental sustainability with a mean of 3.78 and a standard deviation of 0.74, while the least important was employee organizational commitment with a mean of 3.63 and a standard deviation of 0.64. After the qualitative stage and validation, the final components explaining the consequences, following three Delphi rounds, included five components: (1) effectiveness of green policy, (2) urban environmental sustainability, (3) employee organizational commitment, (4) municipal reputation and public image, and (5) organizational innovation in HR. From the experts' perspective, these had acceptable and satisfactory validity.

Table 6 presents the results of the third Delphi round from the perspective of the experts.

Table 6

Respondents' Opinions on the Components Explaining Green Human Resource Management Policy-Making in Municipalities – Third Round of Delphi

Components	Number of Responses	Minimum	Maximum	Mean	Standard Deviation	Rank of Importance
Causal Conditions						
Weakness in value-orientation	17	2.00	5.00	3.89	0.86	1
Policy vacuum	17	1.00	5.00	3.76	0.83	3
Managerial unawareness	17	1.00	5.00	3.84	0.75	2
Cultural resistance	17	2.00	5.00	3.67	0.80	4
Lack of infrastructure	17	2.00	5.00	3.55	0.79	5
Contextual Conditions						
Organizational structure	17	2.00	5.00	3.84	0.72	2
Institutional capacity	17	1.00	5.00	3.74	0.95	3
Municipal economic status	17	2.00	5.00	3.90	0.83	1
Organizational culture	17	1.00	5.00	3.71	0.64	4
Influence of stakeholder groups	17	2.00	5.00	3.54	0.58	5
Intervening Conditions						
Top management support	17	1.00	5.00	4.02	0.89	1
Information technology infrastructure	17	1.00	5.00	3.96	0.73	2
Legal and regulatory support	17	1.00	5.00	3.86	0.61	4
Acceptance of organizational changes	17	1.00	5.00	3.89	0.90	3
HR experts' competency	17	2.00	5.00	3.75	0.58	5
Strategies						
Green training and empowerment	17	1.00	5.00	3.82	0.53	2
Green performance evaluation	17	2.00	5.00	3.88	0.80	1
Green rewarding and motivation	17	1.00	5.00	3.79	0.73	4
Employee green commitment and participation	17	1.00	5.00	3.60	0.79	5
Green recruitment and selection	17	1.00	5.00	3.81	0.88	3
Consequences						
Effectiveness of green policy	17	1.00	5.00	3.71	0.55	2
Urban environmental sustainability	17	1.00	5.00	3.78	0.74	1
Employee organizational commitment	17	1.00	5.00	3.63	0.64	5
Municipal reputation and public image	17	2.00	5.00	3.68	0.92	4
Organizational innovation in HR	17	2.00	5.00	3.73	0.83	3

In the descriptive analysis of the research respondents, out of a total of 185 participants, 146 individuals (78.92%) were male and 39 individuals (21.08%) were female. Forty-four individuals (23.78%) were single, and 141 individuals (76.22%) were married. Twenty-one participants (11.35%) were in the age group of 30 years and below, 46 participants (24.86%) were in the age group of 31–40 years, 61 participants (32.97%) were in the age group of 41–50 years, and 57 participants (30.81%) were in the age group of above 50 years. Seventeen participants (9.19%) had a bachelor's degree or below, 113 participants (61.08%) had a master's degree, and 55 participants (29.73%) had a doctoral degree or were doctoral students. Eighteen participants (9.73%) had work experience of 5 years or less, 29 participants (15.68%) had 6–10 years, 46 participants (24.86%) had 11–15 years, 41 participants (22.16%) had 16–20 years, and 51 participants (27.57%) had more than 20 years of work experience.

To assess the model, the researcher-made questionnaire, after reliability confirmation, was distributed among 185 respondents. The data were analyzed using exploratory and confirmatory factor analysis with SPSS and Smart PLS software.

To determine whether the number of data (sample size and relationships among variables) was suitable for factor analysis, the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were applied. The KMO values for causal conditions, contextual conditions, core phenomenon, intervening conditions, strategies, and consequences were 0.906, 0.896, 0.825, 0.874, 0.886, and 0.894 respectively, and the significance level of Bartlett's test was 0.0009. Therefore, in addition to

sampling adequacy, the execution of factor analysis based on the correlation matrix under study was justifiable.

According to the extracted factors and the percentage of variance explained by the components, for the causal conditions, the eigenvalues of the five extracted factors after varimax rotation were greater than 1, explaining a total of 54.96% of the total variance. Among them, the first factor explained 12.58%, the second 11.70%, the third 10.78%, the fourth 10.66%, and the fifth 9.25%. For the contextual conditions, the eigenvalues of the five extracted factors after varimax rotation were greater than 1, explaining a total of 55.46% of the total variance. Among them, the first factor explained 12.13%, the second 11.72%, the third 11.30%, the fourth 10.39%, and the fifth 9.93%. For the core phenomenon, the eigenvalues of the two extracted factors after varimax rotation were greater than 1, explaining a total of 54.54% of the total variance. Among them, the first factor explained 27.73% and the second 26.82%. For the intervening conditions, the eigenvalues of the five extracted factors after varimax rotation were greater than 1, explaining a total of 57.47% of the total variance. Among them, the first factor explained 13.08%, the second 12.45%, the third 12.12%, the fourth 10.73%, and the fifth 9.01%. For the strategies, the eigenvalues of the five extracted factors after varimax rotation were greater than 1, explaining a total of 57.22% of the total variance. Among them, the first factor explained 14.73%, the second 12.95%, the third 11.22%, the fourth 10.63%, and the fifth 7.69%. For the consequences, the eigenvalues of the five extracted factors after varimax rotation were greater than 1, explaining a total of 59.70% of the total variance. Among them, the first factor explained 17.66%, the second 12.66%, the third 12.54%, the fourth 11.37%, and the fifth 5.47%.

To examine the research model, second-order confirmatory factor analysis was applied, and the results are presented in Table 7.

Table 7

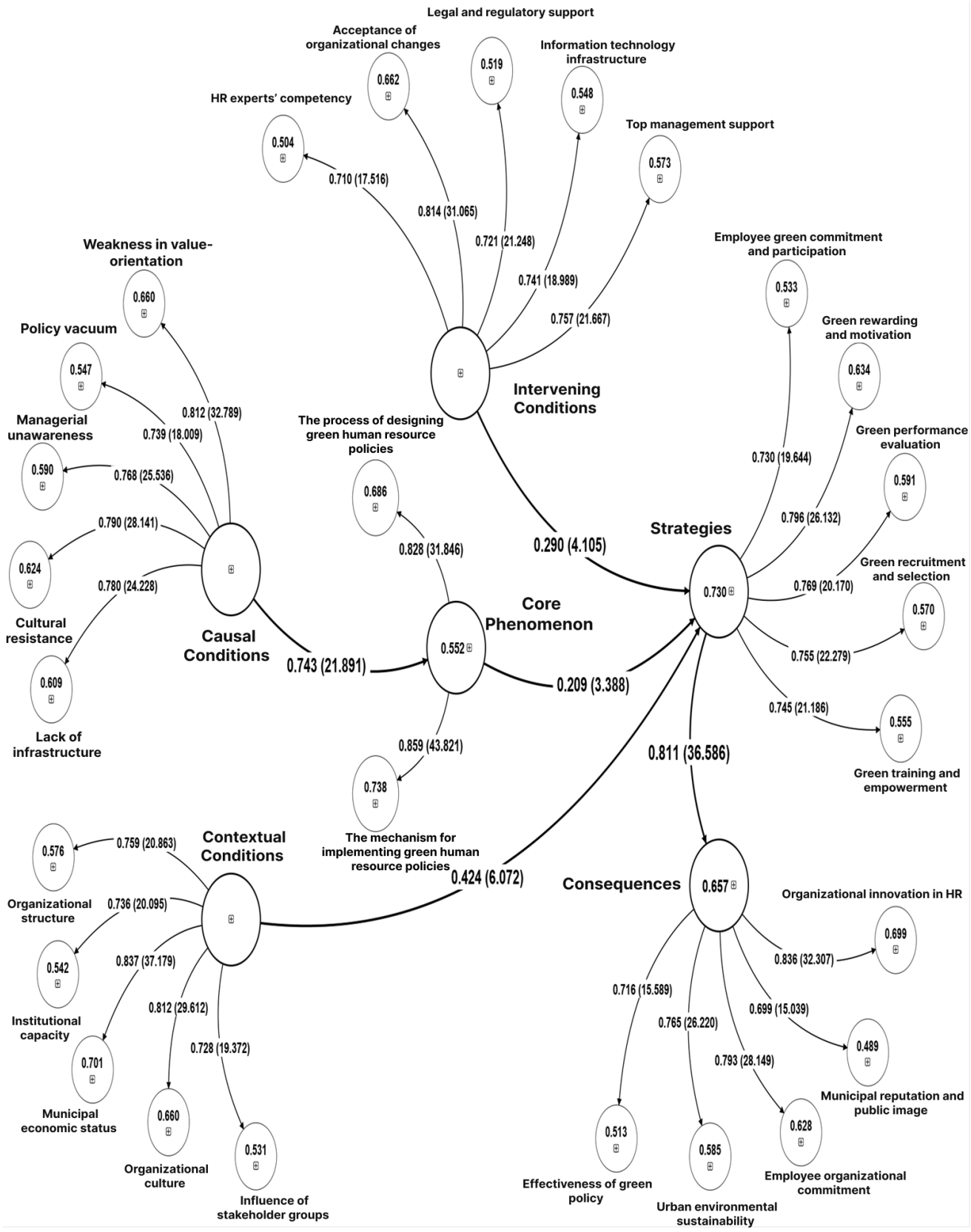
Path Coefficients and Significance Levels of the Research Model

Path Between Variables	Path Coefficient	t Statistic	p-value	Result
Causal conditions → Policy vacuum	0.743	17.492	0.0009	Significant.
Causal conditions → Weakness in value-orientation	0.808	30.191	0.0009	Significant.
Causal conditions → Lack of infrastructure	0.773	22.390	0.0009	Significant.
Causal conditions → Cultural resistance	0.787	26.482	0.0009	Significant.
Causal conditions → Managerial unawareness	0.768	25.093	0.0009	Significant.
Contextual conditions → Organizational structure	0.753	18.799	0.0009	Significant.
Contextual conditions → Institutional capacity	0.731	19.030	0.0009	Significant.
Contextual conditions → Organizational culture	0.811	28.301	0.0009	Significant.
Contextual conditions → Influence of stakeholder groups	0.724	18.379	0.0009	Significant.
Contextual conditions → Municipal economic status	0.837	36.828	0.0009	Significant.
Core category → Process of designing green HRM policy	0.835	29.989	0.0009	Significant.
Core category → Mechanisms for implementing green HRM policy	0.852	35.543	0.0009	Significant.
Intervening conditions → HR experts' competency	0.702	16.248	0.0009	Significant.
Intervening conditions → Legal and regulatory support	0.715	19.685	0.0009	Significant.
Intervening conditions → Information technology infrastructure	0.744	18.735	0.0009	Significant.
Intervening conditions → Acceptance of organizational changes	0.812	30.062	0.0009	Significant.
Intervening conditions → Top management support	0.759	21.101	0.0009	Significant.
Strategy → Green training and empowerment	0.741	20.164	0.0009	Significant.
Strategy → Green performance evaluation	0.772	19.760	0.0009	Significant.
Strategy → Employee green commitment and participation	0.722	18.341	0.0009	Significant.
Strategy → Green recruitment and selection	0.753	21.389	0.0009	Significant.
Strategy → Green rewarding and motivation	0.794	25.251	0.0009	Significant.
Results → Effectiveness of green policy	0.716	15.224	0.0009	Significant.
Results → Employee organizational commitment	0.792	27.429	0.0009	Significant.
Results → Municipal reputation and public image	0.695	14.524	0.0009	Significant.
Results → Organizational innovation in HR	0.835	30.659	0.0009	Significant.
Results → Urban environmental sustainability	0.760	23.797	0.0009	Significant.

From the participants' perspective, the findings indicated that the policy-making model for green human resource management in municipalities comprises 27 components. Figure 2 presents the model in the state of standardized coefficients and significance levels.

Figure 2

The Main Model in the State of Standardized Coefficients and Significance



The field data obtained were executed in SMART-PLS software, and the following results were achieved.

Table 8

Path Coefficients and Significance of the Research Model

Paths	Standardized Coefficients	t Values	p-value	Result
Causal conditions → Core category	0.743	21.791	0.0009	Significant.
Core category → Strategy	0.209	3.308	0.0001	Significant.
Contextual conditions → Strategy	0.424	6.072	0.0009	Significant.
Intervening conditions → Strategy	0.290	4.105	0.0009	Significant.
Strategy → Results	0.811	36.586	0.0009	Significant.

Priority of the model's categories: The highest functional priority pertains to the "core phenomenon" with a mean rank of 3.654. The second priority relates to "intervening conditions" with a mean rank of 3.600, the third to "results" with a mean rank of 3.595, the fourth to "strategy" with a mean rank of 3.476, the fifth to "causal conditions" with a mean rank of 3.400, and the lowest functional priority pertains to "contextual conditions" with a mean rank of 3.276.

Priority of the model's components: Within the components of causal conditions, the highest priority pertains to "weakness in value-orientation" with a mean rank of 3.186, and the lowest functional priority pertains to "managerial unawareness" with a mean rank of 2.781. Among the components of contextual conditions, the highest priority pertains to "organizational structure" with a mean rank of 3.159, and the lowest functional priority pertains to "organizational culture" with a mean rank of 2.997. Among the components of the core category, the highest priority pertains to the "mechanisms for implementing green HRM policy" with a mean rank of 1.551. The second priority pertains to the "process of designing green HRM policy" with a mean rank of 1.449. Among the components of intervening conditions, the highest priority pertains to "top management support" with a mean rank of 3.259, and the lowest functional priority pertains to "acceptance of organizational changes" with a mean rank of 2.773. Among the components of strategy, the highest priority pertains to "green training and empowerment" with a mean rank of 3.192, and the lowest functional priority pertains to "green rewarding and motivation" with a mean rank of 2.551. Among the components of results, the highest priority pertains to the "effectiveness of green policy" with a mean rank of 3.216, and the lowest functional priority pertains to "organizational innovation in HR" with a mean rank of 2.670.

4. Discussion and Conclusion

The findings of this study provide compelling evidence that green human resource management (GHRM) policy-making within municipalities can be conceptualized as a multidimensional paradigm shaped by causal, contextual, and intervening conditions, which subsequently guide strategies and determine outcomes. The empirical testing of the proposed model confirmed the validity of 27 components across 11 categories, which were further organized into six core paradigm-based dimensions. The results demonstrated that causal conditions such as value-based weaknesses, policy voids, managerial unawareness, cultural resistance, and infrastructure gaps play a critical role in shaping the adoption of GHRM policies. These findings are consistent with prior research that emphasized how the absence of strong environmental values and inadequate policy frameworks undermine sustainability efforts in HR systems (Rezai et al., 2020). The study revealed that when municipal organizations lack coherent policies, supporting infrastructure, and informed managerial leadership, the transition toward sustainable HR practices is hindered, echoing concerns raised by earlier studies on the barriers to GHRM implementation in both developing and developed contexts (Ahmad, 2015; Goswami & Ranjan, 2015).

Equally important were the contextual conditions identified, particularly organizational structure, institutional capacity, municipal economic status, organizational culture, and the influence of stakeholders. The validation of these factors resonates with earlier findings that institutional capacity and structural design significantly mediate the success of sustainability initiatives within HRM frameworks (Janali Zadeh Ghavini et al., 2023). In municipal contexts, the structural hierarchies and financial capacity of the organization can either enable or constrain the implementation of green policies, which aligns with the

perspective that sustainability integration requires both structural flexibility and adequate resource allocation (Sharifi et al., 2023). Moreover, the role of organizational culture and stakeholder influence corroborates research that highlighted the centrality of cultural alignment and participatory governance in advancing sustainability initiatives (Zahrani, 2022).

The intervening conditions further illuminated the dynamics that facilitate or impede GHRM policy implementation. Senior management support, IT infrastructure, legal backing, organizational change acceptance, and HR specialists' competencies emerged as critical intervening variables. This mirrors findings from earlier studies that underscored the significance of leadership commitment and legal frameworks in institutionalizing green HR practices (Asghari Aghamashhad et al., 2024; Nurasa et al., 2025). Senior management's visible commitment creates legitimacy and signals the strategic importance of GHRM to employees, while legal and policy backing ensures enforceability and continuity, reducing the risk of symbolic adoption without substantive implementation (Akbari et al., 2024). The identified role of IT infrastructure also supports arguments that technological enablers are vital for embedding sustainability metrics into HR systems and monitoring progress (Goel et al., 2022).

The strategic dimension of the model confirmed the significance of operational strategies such as green recruitment and selection, green training and empowerment, green performance evaluation, green rewards and motivation, and employee commitment and participation. These strategies demonstrated significant effects in achieving organizational alignment with sustainability objectives. The validation of these strategies is consistent with evidence suggesting that green recruitment processes—such as incorporating environmental values into job descriptions and interviews—attract employees with sustainability orientations, thereby reinforcing organizational goals (Najati et al., 2024). Similarly, studies have shown that training and empowerment initiatives are pivotal for fostering environmental awareness and enabling employees to integrate green behaviors into daily practices (Chreif & Farmanesh, 2022). The integration of performance evaluation and rewards with sustainability indicators also aligns with prior findings, which stressed the need for incentive systems that encourage proactive engagement with green initiatives (Duah et al., 2025; Zahrani, 2022).

The outcome dimension highlighted both internal and external results. Internally, the study validated that GHRM leads to effective policy implementation, increased employee commitment, and organizational innovation in HRM. Externally, it fosters urban environmental sustainability and enhances the municipality's reputation and public image. These findings resonate with earlier evidence showing that green HR practices not only improve operational efficiency but also enhance organizational legitimacy and stakeholder trust (Goel et al., 2022; Rehman et al., 2016). Moreover, innovation in HRM driven by sustainability priorities reflects the argument that GHRM acts as a catalyst for broader organizational creativity and process improvement (Zahrani, 2022). The emphasis on reputation and image is also consistent with studies highlighting the branding effects of sustainability practices in public organizations, where legitimacy and citizen trust are crucial (Sharifi et al., 2023).

When comparing the study's findings with previous conceptual models, it is evident that the present research offers a more comprehensive and policy-oriented framework. For example, while Tavakoli et al. (Tavakoli et al., 2018) developed a structural model of GHRM focused on HRM systems, this study integrates policy-making dimensions such as causal, contextual, and intervening factors, providing a broader governance perspective. Similarly, while Najati et al. (Najati et al., 2024) categorized GHRM dimensions from a policy-making approach, the present study operationalized these dimensions within municipal governance, emphasizing real-world applicability. In this way, the research addresses gaps identified in earlier studies, particularly the need for models that connect GHRM practices to broader institutional and policy contexts (Asghari Aghamashhad et al., 2024).

Furthermore, the findings underscore the importance of leadership and governance in embedding GHRM within municipal systems. This echoes Nurasa et al.'s (Nurasa et al., 2025) argument that green leadership is crucial in ensuring that policy commitments are translated into action. The integration of leadership and policy-making dimensions reflects a holistic approach, aligning with calls for frameworks that bridge micro-level HR practices with macro-level governance systems (Molamirzai, 2016). Similarly, the study's emphasis on stakeholder influence confirms earlier findings that collaborative governance and the involvement of civil society are critical to legitimizing and sustaining green HR initiatives (Sharifi et al., 2023).

Another important contribution of this study lies in its confirmation of IT infrastructure and digital enablers as essential elements in facilitating GHRM implementation. While previous studies on GHRM in educational institutions and corporate contexts emphasized technological tools for performance monitoring (Goel et al., 2022), this study extends the argument to municipal governance, highlighting how digital systems can support recruitment, training, and performance evaluation in line with sustainability goals. The findings thus position digitalization as a cross-cutting enabler that strengthens the link between strategy and outcomes in GHRM.

The comparative analysis of priority rankings also provided novel insights. For instance, while strategies such as training and empowerment and recruitment and selection were confirmed as highly significant, rewards and motivation received lower priority. This finding diverges from some earlier studies that emphasized financial and non-financial incentives as critical enablers of green behavior (Duah et al., 2025; Zahrani, 2022). In the municipal context, however, intrinsic motivation and cultural alignment may outweigh extrinsic rewards, reflecting the specific institutional dynamics of public organizations. This highlights the need to contextualize GHRM strategies according to organizational type and sectoral environment.

The study also confirmed the external significance of GHRM in enhancing municipal reputation and public trust. This resonates with Vakilzadeh et al. (Vakilzadeh et al., 2019), who emphasized the role of transparent and citizen-oriented policies in strengthening public legitimacy. By demonstrating how green HR practices improve public image, the findings illustrate that GHRM extends beyond internal organizational performance to influence the broader social contract between municipalities and citizens. This perspective aligns with Karimi Tararani et al. { Karimi Tararani, 2018 #283655}, who argued that policymaking models must integrate both innovation and legitimacy dimensions to ensure sustainable governance.

Despite its comprehensive approach, the study has certain limitations. First, the empirical testing was limited to the municipality of Mashhad, which may constrain the generalizability of findings to other municipal contexts with different cultural, economic, and structural characteristics. Second, the study relied on self-reported data through questionnaires and Delphi panels, which may be subject to biases such as social desirability or selective recall. Third, while the model included causal, contextual, and intervening factors, it did not explicitly account for dynamic external pressures such as national environmental policies, international climate commitments, or global sustainability trends that may influence GHRM at the local level. Finally, the study primarily employed cross-sectional data, which limits the ability to capture the evolving nature of GHRM practices and their long-term outcomes.

Future research could extend this study by applying the validated model in different municipal contexts across Iran and internationally, enabling comparative analysis and improving generalizability. Longitudinal studies would be particularly valuable in capturing how GHRM practices evolve over time in response to institutional reforms, leadership changes, or shifts in public policy. Additionally, future research could integrate external macro-level variables such as national environmental regulations, global sustainability indicators, or inter-municipal collaborations to better understand the multilevel governance dynamics of GHRM. Methodologically, the use of mixed-methods designs that combine quantitative surveys with ethnographic or case study approaches could provide deeper insights into the cultural and behavioral dimensions of GHRM. Finally, exploring the role of emerging technologies such as artificial intelligence, big data, and digital platforms in enabling and scaling GHRM practices offers an important avenue for advancing both theory and practice.

From a practical standpoint, municipalities should prioritize leadership development programs that equip senior managers with the knowledge and commitment necessary to champion green HR practices. Building robust IT infrastructures can serve as a foundation for integrating sustainability metrics into HR processes, enabling more effective monitoring and evaluation. Municipalities should also foster stakeholder engagement by involving civil society organizations, employee representatives, and citizens in the design and monitoring of GHRM policies, thereby enhancing legitimacy and public trust. Additionally, aligning recruitment, training, and performance evaluation with sustainability indicators can institutionalize green values within the workforce, while embedding green HR practices into broader municipal governance systems ensures continuity and long-term impact.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were considered.

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