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Enhancing Organizational Resilience: The Transformative Influence of Strategic Human Resource Management Practices and Organizational Culture

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Abstract: In an era characterized by rapid changes and uncertainty, organizational resilience emerges as a critical factor for the survival and prosperity of businesses. Confronted with a progressively volatile and unpredictable organizational landscape, an organization's capacity to swiftly and effectively address challenges and adapt to changes becomes indispensable. This paper investigates the role of strategic human resource management (SHRM) practices and organizational culture (OC) in enhancing organizational resilience (OR). The research employed a questionnaire distributed to 501 employees within public institutions, with data analysis conducted using structural equation modeling. The study assesses the direct effects of SHRM practices on organizational resilience while also investigating the mediating effects of organizational culture on the relationship between these practices and resilience. The primary findings highlight both the direct and indirect impacts of SHRM practices on organizational resilience. The study underscores the importance of adopting an integrated approach, wherein SHRM practices and organizational culture are strategically aligned to bolster organizational resilience and secure sustainable success in a dynamic and turbulent organizational landscape.

Keywords: organizational resilience; strategic human resource management practices; recruitment and selection; employee training; performance management; work environment; organizational culture



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1. Introduction

Organizational resilience (OR) embodies an organization's capacity to adapt and respond effectively to unforeseen changes and crises while maintaining its purpose and functioning optimally [1]. Whereas organizational flexibility pertains to the ability to adapt to environmental changes, and organizational adaptability swiftly refers to the capacity to adjust and develop when facing challenges, resilience encompasses more [2]. It involves the ability to absorb shocks and return to normal functioning, to learn from past experiences, and to strengthen oneself against future challenges [3].

OR is a vital element for the survival and success of a company amidst various threats and changes in its organizational environment [4]. Understanding and developing resilience capacity can fortify organizational position and maintain viability even in the

most challenging circumstances [5]. OR is essential in the context of an increasingly unpredictable and turbulent organizational environment [6–8]. An organization's ability to adapt and respond rapidly to unexpected changes can make the difference between success and failure [9]. A variety of factors influence the dynamics of resilience, such as the level of preparedness and available human resources, the quality of infrastructure, and the degree of solidarity and collaboration among involved actors [10]. Therefore, research and practices aimed at understanding and supporting the development of OR are particularly relevant and valuable in risk management and in promoting the long-term success of organizations [11,12].

Understanding and implementing SHRM practices not only improves organizational performance but can also strengthen an organization's ability to cope with changes and challenges sustainably. A strategic approach enables recruitment and selection programs to identify and attract the right talents to support long-term organizational objectives [5]. These practices can promote the continuous development of employees, preparing them to navigate a dynamic and unpredictable work environment successfully.

The main objective of this paper is to investigate the role of SHRM practices and organizational culture (OC) in the development of OR. The study aims to identify the direct influences of SHRM practices on OR, as well as the mediating effects of OC in the relationship between these practices and resilience. The gaps addressed by the paper include the need to better understand how SHRM practices and OC contribute to the development of OR in a context characterized by rapid changes and uncertainty. Moreover, the paper seeks to explore how these two aspects can be strategically integrated to enhance OR and ensure the long-term success of the organization in an ever-changing organizational environment. The research question derived from the identified gap is: How do SHRM practices and OC contribute to the enhancement of OR in public institutions?

We undertook this study to address the growing need to understand the way in which SHRM practices and OC influence OR, particularly in the context of public institutions facing rapid changes and uncertainty. With organizational resilience becoming increasingly crucial for organizational survival and success, investigating the role of SHRM practices and OC in enhancing resilience is essential for effective management and long-term sustainability. Through this study, we aim to contribute to the existing body of knowledge by offering practical implications for public institutions aiming to bolster their resilience and ensure sustained success amidst evolving challenges.

The elements of originality and novelty of the paper include the use of structural equation modeling to investigate the complex relationships between SHRM practices, OC, and OR. Furthermore, the paper highlights the importance of an integrated and strategically aligned approach between SHRM practices and OC to maximize OR and ensure the long-term success of the organization.

The structure of the paper comprises six distinct sections. Section 1 shows the research context and the research purpose. Section 2 provides a literature review examining previous research and relevant theories and proposes the research hypotheses. Section 3 describes the details of the research design. Section 4 presents and interprets the results, while Section 5 analyzes the implications and explanations for these results. Finally, Section 6 summarizes the findings and suggests directions for future research.

2. Literature Review and Hypotheses

2.1. Organizational Resilience

Organizational resilience (OR) is a complex and significant concept in the study of organizational behavior and performance. It not only reflects an organization's ability to adapt and survive but also to strengthen and evolve as a result [11]. Organizational resilience is about an organization's capacity to learn from negative experiences and continuously improve its results and functioning in the future [13]. Therefore, it is essential to understand that organizational resilience is not just about passive resistance but also about adaptability and growth [5,14,15].

When applied to the organizational level, the concept of resilience shows that a company's ability to manage and adapt to uncertainty and change is crucial for its long-term survival and success [16]. While some organizations may choose to use centralized control procedures to manage risks and uncertainties, others may opt for innovative solutions that allow them to adapt and transform according to the changing requirements of their environment.

OR is a crucial ability for organizations, particularly in a volatile and unpredictable organizational environment. It involves the ability to not only adapt to changes in the external environment but also to react quickly and efficiently to internal or external crises that could affect the organization's activities and objectives [13]. While flexibility and adaptability are essential, resilience is often considered a superior ability because it involves not only coping with changes but also overcoming obstacles and strengthening as a result [17]. Therefore, the development and encouragement of OR are essential for the long-term success of a company.

A resilient organization can not only adapt to changes in the environment but also maintain its functionality and thrive despite disruptions and stress [18]. This action requires not only flexibility and adaptability but also a capacity for continuous learning and innovation, as well as a focus on developing and improving organizational processes and capabilities [19]. Integrating adaptive and transformative processes can strengthen organizations' resilience and prepare them to successfully face the challenges and opportunities in their ever-changing organizational environment [20]. Thus, OR is not just about survival but also about long-term prosperity and growth.

Various studies [1,5,15,21–25] highlight an increasing concern for OR and underline the diversity of approaches and application domains in which it is relevant. From developing conceptual frameworks and measurement methods to practical strategies for improving and managing OR, research in this field is essential for understanding and promoting this vital ability for organizational success in an increasingly complex and unpredictable organizational environment.

While earlier research predominantly concentrated on the theoretical and conceptual dimensions of OR, there is now a growing interest in understanding how human resource management (HRM) practices can impact and enhance an organization's capacity to navigate challenges and adapt effectively to dynamic changes [13,26]. This fact underscores the importance of practical research and managerial interventions in promoting OR and supporting the long-term success of the organization in an increasingly dynamic and unpredictable organizational environment [5].

For McManus et al. [27], OR is not just about the ability to cope with crises but also about the ability to understand and manage the organization's risks and vulnerabilities proactively. A resilient organization can not only survive and recover from challenges but also thrive and prosper despite them [28]. These essential characteristics of OR are fundamental for building a robust and sustainable organizational environment facing challenges and uncertainties in the contemporary organizational environment.

Researchers have proposed various systems to measure OR. McManus et al. [27] suggested three dimensions to assess and analyze an organization's resilience level and to identify areas requiring improvement to strengthen the organization's ability to face future challenges: situation awareness, vulnerability management, and adaptability. Situation awareness refers to the organization's capacity to accurately perceive and understand its internal and external environment, including potential risks, challenges, and opportunities. Vulnerability management involves the organization's ability to identify and mitigate vulnerabilities that may undermine its resilience. Adaptability refers to the organization's agility and flexibility in responding to changes and disruptions effectively.

Lengnick-Hall et al. [13] classified the dimensions of OR as follows: cognitive dimension, behavioral dimension, and contextual dimension. The cognitive dimension pertains to how organization members understand and interpret crisis or change situations, as well as how they perceive and evaluate associated risks and opportunities. The behavioral

dimension focuses on the actual actions and reactions of the organization to challenges, including the strategies adopted and how team members interact and respond to challenging situations. Lastly, the contextual dimension refers to external and internal influences that may affect the organization's resilience, such as economic, legislative, cultural, or competitive environment.

Lee et al. [16] proposed a model with four dimensions: resilience ethos, situation awareness, adaptability, and critical vulnerability management. Identifying and defining specific dimensions, such as resilience ethos and key vulnerability management, enables researchers to provide a clear and comprehensive framework for analyzing and evaluating OR. These dimensions allow for the assessment of critical aspects of the organization's capacity to cope with challenges and changes, as well as identify areas requiring improvement to strengthen the overall OR [16].

Kantur and Say [26] emphasize the complexity and multidimensionality of this concept. While some aspects, such as employees' cognitive and behavioral capabilities, may be influenced by specific organizational practices and processes, others, such as leadership and operational environment awareness, require intervention and actions at the management and organizational strategy levels. Thus, developing OR requires an integrated and coordinated approach that addresses the multiple aspects and dimensions of this concept. Understanding and managing these factors enables organizations to enhance their ability to adapt and survive facing challenges and changes in their organizational environment [29,30]. In this context, Kantur and Say [24] proposed a three-dimensional model: robustness, agility, and integrity. Robustness refers to the resilience of an organization's systems, processes, and infrastructure against various disruptions and uncertainties. Agility is the ability of an organization to adapt and respond quickly and effectively to changes in its environment. Integrity refers to the adherence to ethical principles, values, and standards in all aspects of organizational conduct.

Chen [31] developed a model with five essential elements for building OR: shared vision, cooperative awareness, willingness to learn, enthusiasm for work, and adaptability. These elements represent the pillars of a robust OC, capable of coping with challenges and adapting to environmental changes. A common vision ensures clear direction and a shared purpose for the entire organization, while cooperative awareness promotes collaboration and solidarity among team members. Willingness to learn encourages an open and flexible mindset that allows adaptation to new conditions and changes. Enthusiasm for work and commitment are motivational factors that contribute to morale boosting and mobilization of resources. Lastly, adaptability is crucial for the organization's survival and success in a continuously changing environment, indicating flexibility and the ability to adjust rapidly to new market conditions and requirements. Integrating these elements into strategic human resource management practices and organizational culture enables organizations to develop sustainable resilience and enhance their ability to adapt.

Identifying and analyzing these critical dimensions of resilient organizational behavior allows organizations to assess and develop their capabilities to adapt and cope with challenges and changes in their organizational environment. Therefore, using these models can help organizations identify and promote practices and cultures that support resilience and long-term success when facing challenges and changes in the organizational environment.

2.2. Strategic Human Resource Management Practices

Chaabouni et al. [30] have distinguished human resource management (HRM) and strategic human resource management (SHRM), highlighting that HRM predominantly deals with the day-to-day operational facets of human resource management. In contrast, SHRM adopts a broader strategic outlook, centering on how HRM practices can align with and advance strategic goals while enhancing the organization's competitive standing. Grasping this differentiation is paramount for crafting and executing efficacious HRM strategies that underpin the organization's sustained prosperity amid a competitive and constantly evolving business landscape. Sareen [32] defined SHRM practices as recruitment

and personnel selection, employee training and development, performance evaluation, and reward.

HRM is not only about recruitment and personnel administration but also about developing and encouraging employees to harness their potential and contribute to the organization's objectives in a dynamic and unpredictable environment [29]. Therefore, HRM plays an essential role in promoting OR and creating an OC that fosters adaptability and innovation [33].

When HRM aligns with the organization's objectives and strategies, it can lead to a significant improvement in organizational performance and resilience, creating distinct competitive advantages [33,34]. Integrating HRM into strategic planning not only ensures that human resources are used efficiently and effectively but also aligns employees with the organization's vision and values, which can improve cohesion and engagement within the team. Organizations need to invest in developing an organizational culture that supports this integration by providing continuous training and development for managers and employees and promoting communication and collaboration across different departments and levels of the organization [35].

In Lengnick-Hall's [13] view, an essential aspect of strategic human resource management is its adaptation to the organization's long-term strategy and objectives, thus providing a framework that enables the organization to efficiently and sustainably cope with changes and challenges. This adaptation involves not only human resource policies and procedures but also a change in mentality and organizational culture so that employees are encouraged and supported in developing the qualities necessary to contribute to the organization's resilience. For example, this may involve offering personal development programs, promoting trust-based and collaborative work relationships, or even restructuring the organizational structure to enable more efficient and flexible communication and decision making. Therefore, SHRM is not limited to managing the practical aspects of employees but is a fundamental component in building and maintaining a resilient and competitive organization in the long term [35].

2.3. Impact of SHRM Practices on Organizational Resilience

OR involves the ability to learn and adapt to changes in the organizational environment continuously. Bouaziz and Smaoui Hachicha [33] underline the importance of implementing effective and well-directed strategic human resource management practices to enhance OR. Managers now have the opportunity to identify SHRM practices that have the most significant impact on the organization's ability to cope with changes and challenges, allowing them to focus their efforts and resources in those critical areas. Implementing human resource practices and policies that support the continuous development of employees, promote collaboration, and improve customer relationships can strengthen OR and ensure its long-term success in a competitive organizational environment [13].

Investments in strategic human resource management practices can generate significant benefits for the organization, contributing to building a stronger and more resilient organizational capacity [36]. Recruiting and developing talented employees, boosting their engagement and job satisfaction, fostering a culture of learning and innovation, and strategically aligning human resource practices with organizational objectives are ways through which organizations can bolster their market position and improve their adaptability to changes in the organizational environment. Therefore, investments in strategic human resource management can contribute not only to improving organizational performance but also to OR.

SHRM emphasizes the importance of aligning human resource objectives and strategies with broader organizational objectives and strategies [37]. SHRM can contribute to strengthening organizational capacity and creating a solid foundation for the organization's long-term success. Formulating a strategy based on human resource strengths enables the organization to leverage its human resources and strengthen its market position efficiently.

Thus, SHRM not only facilitates the development and management of employees but also contributes to achieving organizational objectives and resilience overall [38].

Simultaneously addressing individual and OR through SHRM practices brings multiple benefits to organizations, from improving performance and stress resilience to increasing employee engagement and productivity [12,39,40]. Such practices contribute to creating a healthy and stimulating work environment that promotes innovation, collaboration, and adaptability. Integrating individual and organizational resilience not only strengthens the organization's ability to survive but also enhances its cohesion and effectiveness in achieving its long-term goals [41,42].

Based on the review of previous research, the study proposes the first research hypothesis:

Hypothesis H1. *There is a significant relationship between strategic human resource management (SHRM) practices and the level of organizational resilience (OR), such that an improvement in SHRM practices leads to an increase in OR.*

2.4. Mediation Effects of Organizational Culture

Employees who demonstrate resilience can contribute to creating an organizational culture (OC) that promotes collaboration, trust, and creativity, all of which are essential elements in developing OR [33]. SHRM plays a crucial role in cultivating and supporting employees' psychological capital through recruitment, selection, training, and development policies and practices [11]. Therefore, to enhance their resilience and competitiveness, organizations should pay special attention to OC and ensure proper alignment between their human resource strategy and their environment.

By developing an OC that promotes adaptability, innovation, and efficiency, organizations can strengthen their ability to cope with changes and difficulties in their organizational environment [34]. An OC oriented toward flexibility and innovation can encourage employees to be proactive in identifying and addressing challenges, exploring new solutions, and quickly adapting to changes. Fostering such a culture enables organizations to enhance their resilience and maximize their performance potential in an increasingly dynamic and unpredictable organizational environment.

In this study, we see OC as the bedrock upon which OR relies, serving as both a guiding force and a source of strength during times of change and adversity. OC encompasses not only explicit manifestations such as mission statements and corporate rituals but also implicit aspects like communication patterns, power dynamics, and employee perceptions. It is the invisible fabric that binds individuals together, fostering a sense of belonging and purpose while also influencing organizational outcomes. Moreover, we believe that organizational culture is not static but instead dynamic and adaptive, evolving in response to internal and external pressures. A healthy OC encourages innovation, collaboration, and continuous learning, enabling organizations to navigate uncertainties and seize opportunities in today's rapidly changing business landscape.

Shafer et al. [43] highlight the crucial importance of aligning human resource practices with organizational values and objectives in supporting OR and adaptability to challenges and changes. Personnel policies, training and development programs, and talent management play an essential role in shaping a learning and innovation-oriented OC that enables the organization to quickly adapt to environmental changes and efficiently manage risks and crises. Thus, these studies [13,43] emphasize the need for a strategic and integrated approach to human resource management to support OR and achieve long-term competitive advantage.

Neves et al. [44] emphasized the importance of human resource practices in shaping OC and influencing employee behaviors. Selection practices are fundamental for identifying and recruiting the right people for critical positions in the organization, contributing to forming a talented and diverse team. Through reward practices, organizations can reward and motivate employees for their performance, promoting commitment and loyalty to the company. Training and development practices enable employees to develop their skills and

abilities, enhancing their contribution to the organization's success. Therefore, a strategic and well-managed approach to human resources can create a stimulating and motivating work environment that encourages employees to make their maximum contribution to achieving organizational goals. Thus, selection, compensation, and training practices become essential tools in developing and maintaining a motivating OC and a committed and high-performing workforce.

Based on the review of previous research, the study proposes the second research hypothesis:

Hypothesis H2. *Organizational culture (OC) acts as a mediator in the relationship between strategic human resource management (SHRM) practices and the level of organizational resilience (OR).*

Figure 1 exposes the research model.

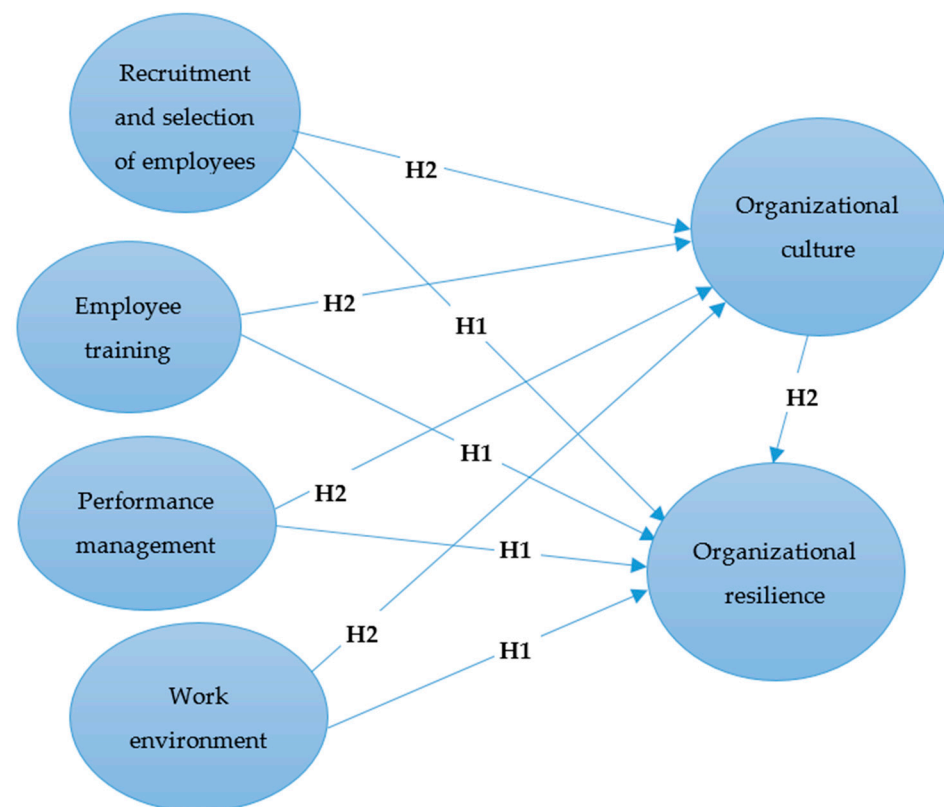


Figure 1. Theoretical model. Source: Developed by the author.

The theoretical model illustrates that OC acts as a mediator in the relationship between SHRM practices and the level of OR. This model is essential in understanding how SHRM practices influence an organization's ability to cope with and adapt to changes and challenges in its external and internal environment. Organizational culture is a crucial factor in determining how employees perceive and behave within the organization and influences how they carry out their tasks and interpersonal relationships. A resilient organization is capable of responding promptly and efficiently to challenges, adapting to changes, and maintaining performance and success over time. Therefore, the model suggests that investing in human resource practices that promote a healthy and adaptable organizational culture can enhance the organization's resilience and its ability to cope with challenges and maintain performance in constantly changing business environments.

3. Materials and Methods

The study of the impact of SHRM practices on OR is a complex process that involves several distinct stages. These stages typically include defining the research objectives,

developing a theoretical and conceptual framework, data collection, analysis of relevant data, interpretation of results, discussions, and conclusions. Figure 2 illustrates how each stage of the process contributes to understanding the impact of SHRM practices on the organization.

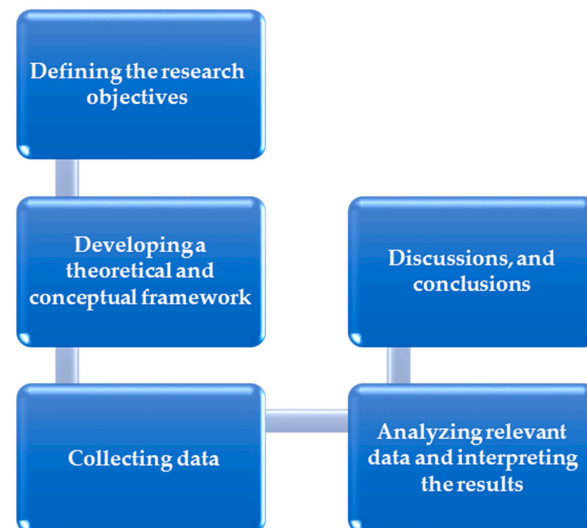


Figure 2. Research process steps. Source: Developed by the authors.

The study was conducted on a population comprising employees from various sectors, including education, healthcare, culture, and public administration, working within public institutions. From the total population of 1,289,540 employees in public institutions, the research sample was selected using a stratified sampling method. Data collection occurred through the distribution of questionnaires to 784 employees from public institutions across Romania during the timeframe of September 2023 to December 2023. Out of the distributed questionnaires, a total of 501 valid responses were received from employees of public institutions, resulting in a response rate of 63.9%. This sample size provides a confidence level of 95% with a margin of error of 4.38%. While the sample represents a significant portion of the target population, it is essential to acknowledge that the findings are based on the responses of employees from specific sectors within public institutions in Romania and may not be universally applicable across all contexts or sectors.

The utilization of a validated questionnaire and an established scale for measuring OR ensured the consistency and reliability of the research results. The scale developed by Kantur and Say [26] is well known and widely used in the academic literature for assessing OR in various organizational contexts, proposing a three-dimensional model: robustness, agility, and integrity.

These three dimensions can be overlaid with the dimensions of OR proposed by Lengnick-Hall et al. [13]: cognitive dimension, behavioral dimension, and contextual dimension. Another three-dimensional model by McManus et al. [27], which may overlap with the models proposed by Lengnick-Hall et al. [13] and Kantur and Say [26], involves considering awareness of the situation, vulnerability management, and adaptability. Table 1 illustrates the convergence of the three models. The proposed model utilizes three items for OR, each item falling into one of the convergent dimensions.

Table 1. Convergence of organizational resilience models.

	Kantur şı Say [26]	Lengnick-Hall et al. [13]	McManus et al. [27]
OR1	Integrity	Behavioral dimension	Situation awareness
OR2	Agility	Contextual dimension	Adaptive capacity
OR3	Robustness	Cognitive dimension	Management of vulnerabilities

Source: Developed by the authors based on Kantur şı Say [26], Lengnick-Hall et al. [13], and McManus et al. [27].

Building upon previous research [13,33,38,45], the investigation opted for four SHRM practices: personnel recruitment and selection, employee training and development, performance evaluation and reward, and the work environment. Personnel recruitment and selection are crucial processes aimed at ensuring that the organization attracts, secures, and retains individuals who possess the requisite skills, potential, and qualifications necessary for the roles within the organization. Employee training and development help employees improve their skills and adapt to changes in the work environment. Performance evaluation and reward provide incentives for performance and recognize employees' contributions to the organization's success. Creating a positive and stimulating work environment encourages employee involvement and commitment and contributes to building a strong and resilient OC. Through the adoption of these practices, the organization can strengthen its capabilities and ensure that human resources are prepared to face challenges and opportunities.

Table 2 presents the frequencies of sociodemographic variables.

Table 2. Frequencies of sociodemographic variables.

Gender	Frequency	Position Held	Frequency
Male	42.1%	Managerial position	13.6%
Female	57.9%	Subordinate position	86.4
Age	Frequency	Work experience	Frequency
18–30 years old	14.8%	0–10 years	14.8%
31–40 years old	29.3%	11–20 years	31.7%
41–50 years old	21.8%	21–30 years	23.6%
51–60 years old	25.1%	31–40 years	24.4%
Over 60 years old	9.0%	over 40 years	5.6%
Education	Frequency	Organizational seniority	Frequency
High school	8.8%	Less than one year	2.6%
Post-high school education	22.4%	1–5 years	19.4%
Bachelor's degree	38.7%	6–10 years	23.8%
Master's degree	28.1%	11–20 years	28.3%
Doctoral degree	2.0%	over 20 years	25.9%

Source: Developed by the authors based on data collected.

The variables describing SHRM practices, OC, and OR are illustrated in Table A1 in the Appendix A. For these items, a Likert scale with five levels is used: 5—strongly agree, 4—agree, 3—neutral, 2—disagree, 1—strongly disagree.

The use of self-administered questionnaires may be accompanied by a problem called common method bias (CMB) [46]. This phenomenon occurs when respondents' answers are influenced by factors unrelated to the research variables of interest but are common to all questions in the questionnaire or the measurement process itself. To assess the presence of this bias, we employed the Harman single-factor test (in SPSS v.27), which analyzes the extent to which a single component explains the majority of the variation in responses to questions. In our analysis, the total variance extracted was less than 50% (46.622%), indicating the absence of significant bias effects in our data [46]. This methodological

approach adds credibility and validity to our results, ensuring that the conclusions drawn are based on reliable and unbiased data.

The investigation employs structural equation modeling (SEM) for data processing and interpretation. SEM provides a holistic and comprehensive approach to analyzing the complex relationships between variables involved in a theoretical model [47,48]. This fact is essential in the context of studying the impact of SHRM practices on OR, as these domains involve a variety of interconnected factors. SEM can thoroughly examine reciprocal influences as well as mediating variables such as OC [49].

Furthermore, the successful use of SEM in previous research in the field of OR highlights the validity and relevance of this analytical instrument for analyzing the complex dynamics of organizational systems [5,35]. These previous studies have demonstrated the effectiveness of SEM in managing organizational variability and complexity, confirming its suitability for studying the interactions between SHRM practices, OR, and OC [10,33,36].

4. Results

The SEM model used the consistent partial least squares (PLS) algorithm within the SmartPLS v3.0 software [50]. Several researchers advocate for the use of the consistent PLS algorithm (PLSc) to enhance the understanding of structural relationships [49,51,52]. PLSc algorithms are used in structural equation modeling analysis to assess complex relationships between variables [49]. They are considered particularly useful for complex models or when data have non-normal distributions. The PLSc algorithm ensures the consistency and validity of results in SEM analysis [52]. This method can be efficient in addressing issues related to missing data or non-normal distributions, thus providing more precise and robust results in investigating structural relationships [53].

The latent variables of the PLSc model are recruitment and selection of employees, employee training, performance management, work environment, OC, and OR. We chose the formative PLSc model in which the items (observable, exogenous variables) are characteristics that form the latent variables (endogenous) of the model. Figure 3 illustrates the theoretical model applied to the collected data.

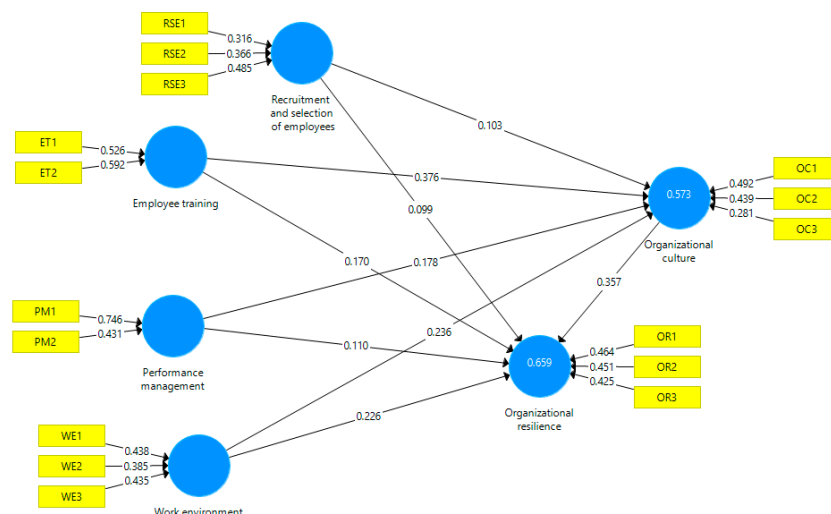


Figure 3. PLSc model. Source: Developed by the authors using SmartPLS v3.0.

Variance inflation factor (VIF) is a measure used to assess collinearity among exogenous variables in an SEM model calculated using SmartPLS software [48]. Evaluating VIF is essential to ensure that exogenous variables in the model are not firmly collinear and that the results of SEM analysis are reliable and interpretable [47]. If some variables have high VIFs (above 5), it is recommended to take measures to reduce collinearity, such as removing or transforming them in some other way, to avoid adverse effects on model

interpretation [48]. The VIF values for variables in our model are generally acceptable, indicating that there is no significant collinearity among most of these variables (Table 3).

Table 3. Variance inflation factor.

Variable	VIF
ET1	1.557
ET2	1.556
OC1	1.554
OC2	1.521
OC3	1.471
OR1	1.107
OR2	1.352
OR3	1.323
PM1	1.190
PM2	1.190
RSE1	2.689
RSE2	2.400
RSE3	1.523
WE1	1.352
WE2	1.379
WE3	1.416

Source: Developed by the authors based on data using SmartPLS v3.0.

Analysis of outer weights is crucial for evaluating the impact of each variable on latent constructs within the model. Employing the bootstrapping technique allows us to obtain a more precise estimation of the significance of outer weights and the validity of the formative model [48]. The bootstrapping procedure, which involves generating repeated random samples (10,000 in our model) from the original dataset, allows us to assess the distribution and uncertainty of external weight estimations. Using a significance level of 0.05 and conducting two-tailed tests, we can determine if the outer weights are statistically significant [47]. This information is essential for understanding the contribution of each variable to the construction of latent constructs and for validating the formative model within SEM analysis.

The data in Table 4 present the estimated outer weights for each exogenous variable within the SEM model. T-values and *p*-values are used to evaluate the significance of regression coefficients. A high T-value (above 1.6) indicates greater significance, and a low *p*-value (below 0.05) indicates statistical significance [45].

Table 4. Outer weights.

	Original Sample	Sample Mean	Standard Deviation	T Statistics	<i>p</i> -Values
ET1 → Employee training	0.526	0.526	0.053	9.914	0.000
ET2 → Employee training	0.592	0.591	0.049	12.010	0.000
OC1 → Organizational culture	0.492	0.490	0.045	10.862	0.000
OC2 → Organizational culture	0.439	0.440	0.045	9.802	0.000
OC3 → Organizational culture	0.281	0.281	0.043	6.584	0.000
OR1 → Organizational resilience	0.464	0.464	0.040	11.636	0.000
OR2 → Organizational resilience	0.451	0.451	0.050	9.073	0.000
OR3 → Organizational resilience	0.425	0.425	0.044	9.746	0.000
PM1 → Performance management	0.746	0.745	0.044	16.937	0.000
PM2 → Performance management	0.431	0.432	0.056	7.639	0.000
RSE1 → Recruitment and selection of employees	0.316	0.318	0.082	3.854	0.000
RSE2 → Recruitment and selection of employees	0.366	0.363	0.073	5.041	0.000
RSE3 → Recruitment and selection of employees	0.485	0.484	0.058	8.308	0.000
WE1 → Work environment	0.438	0.438	0.056	7.856	0.000
WE2 → Work environment	0.385	0.384	0.049	7.913	0.000
WE3 → Work environment	0.435	0.435	0.061	7.073	0.000

Source: Developed by the authors based on data using SmartPLS v3.0.

In Table 4, all p -values are 0.000, indicating that all external weights are statistically significant.

To assess the model fit, we calculated the SRMR and NFI. SRMR (root mean square error of approximation) and NFI (normed fit index) are measures used to evaluate model fit. For SRMR, a low value indicates a good model fit, with a value below 0.08 considered acceptable in many research studies [46]. For NFI, a value close to 1 indicates a good model fit, with values above 0.90 considered satisfactory. In our model, SRMR is 0.043, and NFI is 0.900, indicating a good fit for the model. These data suggest that our model fits the data well and is suitable for the analysis conducted.

The bootstrapping procedure provides the path coefficients and the opportunity to evaluate their significance by estimating their sampling distribution and calculating standard errors. This method enables reliable estimates of coefficients and determines if they are statistically significant [46]. Table 5 shows the path coefficients of the model.

Table 5. Path coefficients.

	Original Sample	Sample Mean	Standard Deviation	T Statistics	p -Values
Employee training → Organizational culture	0.376	0.376	0.047	7.932	0.000
Employee training → Organizational resilience	0.170	0.169	0.041	4.148	0.000
Organizational culture → Organizational resilience	0.357	0.355	0.046	7.746	0.000
Performance management → Organizational culture	0.178	0.177	0.045	3.973	0.000
Performance management → Organizational resilience	0.110	0.109	0.043	2.568	0.010
Recruitment and selection of employees → Organizational culture	0.103	0.104	0.050	2.057	0.040
Recruitment and selection of employees → Organizational resilience	0.099	0.102	0.038	2.636	0.008
Work environment → Organizational culture	0.236	0.239	0.041	5.712	0.000
Work environment → Organizational resilience	0.226	0.227	0.041	5.501	0.000

Source: Developed by the authors based on data using SmartPLS v3.0.

The path coefficient analysis highlights the essential role of SHRM practices in enhancing OR, emphasizing the importance of investments in employee skill development, efficient performance management, appropriate recruitment and selection of personnel, and creating a favorable and healthy work environment. These findings support hypothesis H1, suggesting that improving SHRM practices can significantly contribute to enhancing OR, thereby supporting the adaptability and success of the organization.

Within the bootstrapping procedure, in addition to analyzing direct path coefficients, it is also possible to calculate specific indirect effects and assess their significance. This action involves examining how a mediation variable may influence the relationships between independent and dependent variables, thereby providing a more detailed perspective on the underlying mechanisms that drive the relationships observed in the SEM model. Table 6 presents the coefficients representing the specific indirect effects within the model.

Table 6. Specific indirect effects.

	Original Sample	Sample Mean	Standard Deviation	T Statistics	p -Values
Performance management → Organizational culture → Organizational resilience	0.063	0.063	0.019	3.399	0.001
Employee training → Organizational culture → Organizational resilience	0.134	0.134	0.026	5.185	0.000
Recruitment and selection of employees → Organizational culture → Organizational resilience	0.037	0.037	0.018	2.059	0.040
Work environment → Organizational culture → Organizational resilience	0.084	0.085	0.018	4.775	0.000

Source: Developed by the authors based on data using SmartPLS v3.0.

According to the results shown in Table 5, we can observe that all indirect effects are statistically significant, with p -values lower than the conventional significance level of 0.05. This finding indicates a significant positive influence of SHRM practices on OR, mediated by OC. The most pronounced mediating effect exerted by OC is observed between the variables employee training and OR (0.134), suggesting that employee training significantly and positively influences OC, which in turn enhances OR. Therefore, the data support the hypothesis that OC acts as a mediator in the relationship between SHRM practices and the level of OR, validating hypothesis H2. This finding underscores the importance of a healthy OC in improving organizational performance and resilience, highlighting the crucial role of SHRM practices in shaping this culture and, implicitly, in promoting OR. The total effects exerted within the model are depicted in Figure A1 in the Appendix B.

To test and validate the reliability and validity of the model overall, as well as to assess its effectiveness in predicting future behavior or outcomes, we used the PLS predict feature within the Smart PLS v3.0 software. PLS predict allows us to assess how well our model can be used to make predictions based on new data, which is crucial for validating and practically applying the model in various research contexts. Table 7 presents PLS predict for the two latent variables, OC and OR, influenced by SHRM practices.

Table 7. PLS predict.

	RMSE	MAE	Q ² _Predict
Organizational culture	0.666	0.527	0.560
Organizational resilience	0.640	0.523	0.593

Source: Developed by the authors based on data using SmartPLS v3.0.

RMSE (root mean square error) and MAE (mean absolute error) are measures of the average error between the model-predicted values and the observed values. The lower these values, the better the model's performance. In the case of our model, both measures are relatively small, indicating a good fit of the model to the observed data.

Q²_predict is the coefficient of determination for the validation (predictive) dataset. It provides a measure of the model's ability to explain and predict variability in the validation data. A higher Q²_predict indicates a more significant predictive capacity of the model. The Q²_predict values for both variables are relatively large, indicating that the model has an excellent capacity to predict variability in OC and OR. In conclusion, the data from Table 7 suggest that the model has an excellent predictive capacity for OC and OR, with relatively small errors between predicted and observed values and a significant capacity to explain and predict variability in these variables.

5. Discussion

Understanding and promoting both the individual resilience of employees and organizational resilience is essential to developing a workplace resilience culture [53,54]. Addressing these aspects enables organizations to cultivate a work environment that fosters adaptability, mutual trust, and resilience. This action contributes to bolstering organizational resilience and overall performance [55–64].

A profound understanding of the role of SHRM in promoting OR can provide a new perspective on why some organizations outperform others. Analyzing the connections between SHRM practices, OC, and OR helps identify the factors contributing to an organization's success or failure in navigating challenges. Therefore, SHRM becomes a crucial element in creating and maintaining a resilient OC and ensuring adequate adaptability to cope with changes and uncertainties in the organizational environment.

The main objective of the study was to investigate the role of SHRM practices and OC in the development of OR. In this regard, two hypotheses were examined: the first hypothesis aimed to identify the direct influences of SHRM practices on OR, while the second hypothesis investigated the mediating effects of OC in the relationship between these practices and resilience.

The research on the H1 hypothesis led to conclusions similar to those of Bouaziz and Smaoui Hachicha [33], stating that by clearly understanding the link between human resource practices and resilience dimensions, managers can develop more effective and outcome-oriented strategies for risk management and long-term organizational performance improvement. Thus, these findings not only make significant contributions to the literature on HRM and OR but also provide a solid basis for practical actions within organizations.

In the context of SHRM practices, the investigation of hypothesis H1 yielded results analogous to those of Kooij and Boon [65], who asserted that SHRM practices, particularly employee training and development, are essential elements in strengthening the organization's capacity to cope with challenges and changes in its organizational environment. Studies highlight that investment in training can significantly contribute to improving OR, both at the individual and organizational levels [66]. Employee training and development provide essential opportunities for enhancing their skills and abilities, preparing them to deal with the challenges and requirements of the workplace [67–71]. Through innovative training programs, organizations can enhance employees' adaptability and resilience to change, thereby improving organizational performance and the ability to succeed in an increasingly competitive and volatile organizational environment. Investing in employee training and development not only supports their individual and professional growth but also contributes to strengthening OR and increasing market competitiveness [5]. This finding underscores the essential importance of investing in innovative training programs to enhance the organization's capacity to adapt and respond to changes in its organizational environment [72,73]. Providing training that stimulates creative thinking, problem-solving skills, and innovation, organizations can better prepare employees for the challenges and opportunities encountered in their daily activities.

The results of the research on the H2 hypothesis underline the importance of adopting an integrated approach in HRM to support OR through a robust OC. OC serves as a crucial intermediary factor that influences how SHRM practices impact organizational resilience. It shapes the way employees perceive and respond to these practices, ultimately affecting the organization's overall resilience level. Understanding the mediating role of OC provides valuable insights into the complex mechanisms through which SHRM practices contribute to enhancing organizational resilience.

Individual SHRM practices, such as recruitment, training, or performance evaluation, are interconnected and complement each other in promoting OR. Integrating these practices into HR strategies, the organization can strengthen its capabilities and create an OC that fosters adaptability and innovation. Adopting a resilience-oriented approach in HRM and OC can help the organization prepare more effectively for crises and adapt to changes in the organizational environment, thereby consolidating its long-term competitive position. Therefore, these findings provide a solid foundation for the development and implementation of SHRM practices that contribute to enhancing OR and improving overall organizational performance.

Similar to Kantur and Iseri-Say [24] and Bouaziz and Smaoui Hachicha [33], we conclude that by creating a culture that promotes strategic thinking in HRM departments, managers can encourage the adoption of HRM practices and systems that support adaptability and innovation. Furthermore, integrating strategic human resource management into organizational strategies can help strengthen the organization's capabilities and enhance performance in a complex and unpredictable organizational environment. Such a recommendation provides an essential direction for managers in their efforts to improve OR and ensure the long-term success of their firms in a dynamic organizational environment.

Developing and promoting resilient behavior among employees enables the organization to cultivate a culture that fosters adaptability and innovation amidst challenges and changes. The findings of the study offer a helpful perspective on how SHRM can influence OR through OC. Encouraging and supporting a resilient culture can strengthen organizational capabilities and increase resilience to challenges and changes in the organizational environment.

5.1. Theoretical Implications

The implementation of SHRM can offer significant long-term advantages to the organization, including increased resilience, adaptability, and the ability to respond efficiently to changes in the organizational environment. Through a strategic approach to human resources, organizations can maximize their potential and strengthen their market position while ensuring a healthy and motivating work environment for employees. Thus, SHRM is not only a necessity to address current challenges but also an investment in the sustainable and competitive future of the organization.

SHRM can address shifts and sustain performance amidst disruptions, thereby fostering the advancement of more effective strategies and practices within the realms of HRM and organizational governance. It is essential to develop and validate appropriate measurement tools to assess the impact of SHRM practices on OR in various contexts and industries. Furthermore, the integration of SHRM practices into organizational strategies can foster a culture of innovation, collaboration, and continuous improvement. Aligning human resource strategies with the organization's goals and objectives, SHRM can enhance employee engagement, productivity, and satisfaction, thereby improving organizational performance.

Moreover, SHRM plays a crucial role in talent management, recruitment, and retention, ensuring that the organization has the right people with the right skills in the right positions. This proactive approach to human resource management enables the organization to build a skilled and resilient workforce capable of navigating challenges and seizing opportunities in a dynamic and turbulent landscape.

5.2. Practical Implications

Developing and promoting resilient behavior among employees enables the organization to build a culture that supports adaptability and innovation. This paper contributes to a deeper understanding of the factors underlying OR and provides practical guidance for managers and organizational leaders to enhance organizations' adaptability and survival capacity when facing unpredictable and volatile environmental conditions. The findings of the study provide a helpful perspective on how SHRM practices can influence OR through OC. Encouraging and supporting a resilient culture enables the organization to strengthen its capabilities and enhance its resilience to challenges and changes in the organizational environment.

SHRM practices aligned with critical dimensions of OR can strengthen organizational adaptive and survival capacities when facing challenges in their organizational environment. Assessing OR in terms of cognitive, behavioral, and contextual dimensions allows researchers and practitioners to acquire a deeper understanding of how human resource management can contribute to establishing a resilient and sustainable organization amidst uncertainties and challenges. Identifying and examining the role of OC as a mediator between SHRM practices and OR, this research significantly contributes to understanding the mechanisms by which SHRM practices can impact OR. This understanding enhances managers' ability to develop and implement effective HRM practices and to strengthen the organization's capacity to cope with changes and challenges in the organizational environment.

This research contributes to the broader body of knowledge by offering actionable insights into the practical implications of integrating SHRM practices with the pursuit of organizational resilience. Elucidating the role of OC as a mediator in this relationship, the study provides a roadmap for organizations aiming to harness the power of their workforce and culture to drive resilience initiatives forward. The research equips practitioners with a comprehensive framework for evaluating and enhancing their organization's resilience capabilities, emphasizing the importance of assessing OR across multiple dimensions. Ultimately, this study serves as a valuable resource for managers and HR professionals seeking to develop and implement strategies that not only withstand the tests of time but also propel their organizations toward sustained success in an increasingly turbulent world.

5.3. Limitations and Further Research

The combined approach of theoretical deduction and empirical research in this study allows exploration of both conceptual and applied aspects of OR, thus providing a deeper and more holistic understanding of this phenomenon. However, it is essential to recognize that this approach may encounter specific difficulties and limitations, such as time and resource constraints, challenges in generalizing results, or possible biases in the research process. The exclusive use of the questionnaire method may not provide a complete picture of the situation and may fail to capture all relevant aspects of the studied phenomenon. Therefore, in future studies, we propose the incorporation of mixed methods approaches that combine subjective measures, such as questionnaires, with objective measures. The fact that the data are based on employee self-reports may be subject to subjectivity and errors in interpretation. Common method bias was addressed using Hartman's test. This statistical technique helps mitigate the potential influence of common method variance by examining the pattern of correlations among variables. The cross-sectional nature of the research may be a limitation in identifying the effects of SHRM on OR. This limitation undermines the ability to draw causal inferences and understand the long-term effects of SHRM on OR.

Future research could adopt a mixed-method approach to overcome these limitations, combining multiple data collection methods to obtain a more comprehensive and diversified perspective on the studied phenomenon. It is also essential for future studies to pay attention to temporal changes and to use suitable methods to assess the evolution and dynamics of the phenomenon over time. Investigating other variables related to OR and SHRM can bring a deeper and more complete understanding of the processes and mechanisms involved in developing OR in the context of SHRM. This investigation could lead to the development of more effective strategies and practices for strengthening OR and successfully managing challenges in the continuously changing organizational environment. Extending research in this direction could contribute to improving human resource management practices and enhancing overall organizational performance.

Exploring the role of technology and digitalization in fostering OR within the framework of SHRM could offer valuable insights into leveraging technological advancements for organizational resilience. Examining the influence of organizational culture, leadership styles, and employee engagement on OR in the context of SHRM can provide further clarity on the interplay between these factors and their impact on organizational resilience outcomes. Furthermore, exploring the moderating effects underlying the relationship between organizational resilience and strategic human resource management can unveil critical insights into how specific organizational factors or interventions influence the development and maintenance of resilience capabilities over time. Finally, longitudinal studies tracking the implementation of OR strategies and their effects on organizational performance over time can offer valuable insights into the sustainability and effectiveness of such approaches in the long term.

6. Conclusions

The study underscores the critical importance of cultivating a resilient OC that fosters both individual employee and organizational resilience. The research findings emphasized the pivotal role of SHRM practices in nurturing OR. Specifically, the study highlights the significance of investing in employee training and development programs to enhance employees' competencies and readiness to confront the dynamic demands of the organizational landscape. Moreover, the research underscores the necessity of adopting an integrated approach within HRM to bolster OR. By aligning individual SHRM practices with overarching organizational strategies, companies can fortify their capabilities and bolster performance amidst the turbulence of the organizational ecosystem. Encouraging resilient behaviors among employees and cultivating a resilient organizational culture emerge as indispensable strategies for augmenting an organization's adaptive capacity and navigating the complexities of change and challenge.

These conclusions lay a robust foundation for the advancement of SHRM practices geared towards augmenting OR and ameliorating overall organizational performance. The study advocates for strategic investments in human capital development and the cultivation of a resilient organizational ethos as pivotal levers for sustainable success in today's volatile business landscape.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Questionnaire.

Variable	Items	
Socio-demographic variables	Gender	
	Age	
	Education	
	Work experience	
	Organizational seniority	
	Position held	
Recruitment and selection of employees	RSE1	Internal recruitment is based on merit and competencies.
	RSE2	Selection criteria focus on the knowledge, skills, and abilities of candidates.
	RSE3	There is no discrimination based on gender or other criteria in the recruitment and selection process.
Training and development of employees	ET1	Employee training is based on identified training needs in a formalized needs analysis process.
	ET2	Employee development is based on career management.
Performance management	PM1	Human resources evaluation is conducted according to clear and well-known objectives and criteria by all.
	PM2	Financial and non-financial rewards for employees are fair, equitable, and satisfactory.
Work environment	WE1	Working conditions are adequate in the organization.
	WE2	There are good interpersonal relationships among employees in the organization.
	WE3	Management encourages innovation, creativity, and performance and is concerned about the health and well-being of employees.
Organizational culture	OC1	Improvement-oriented change is encouraged in your organization.
	OC2	There is a work culture in your organization.
	OC3	Teamwork is valued in your organization.
Organizational resilience	OR1	When faced with a problem, all members of the organization are involved in solving it.
	OR2	Your organization can respond to challenges quickly.
	OR3	People in your organization are committed to working on a problem until it is resolved.

Source: Developed by the authors based on Kantur şı Say [26], Lengnick-Hall et al. [13], McManus et al. [27], Bahrami et al. [38], Chen şı Huang [45], and Bouaziz şı Smaoui Hachicha [33].

Appendix B

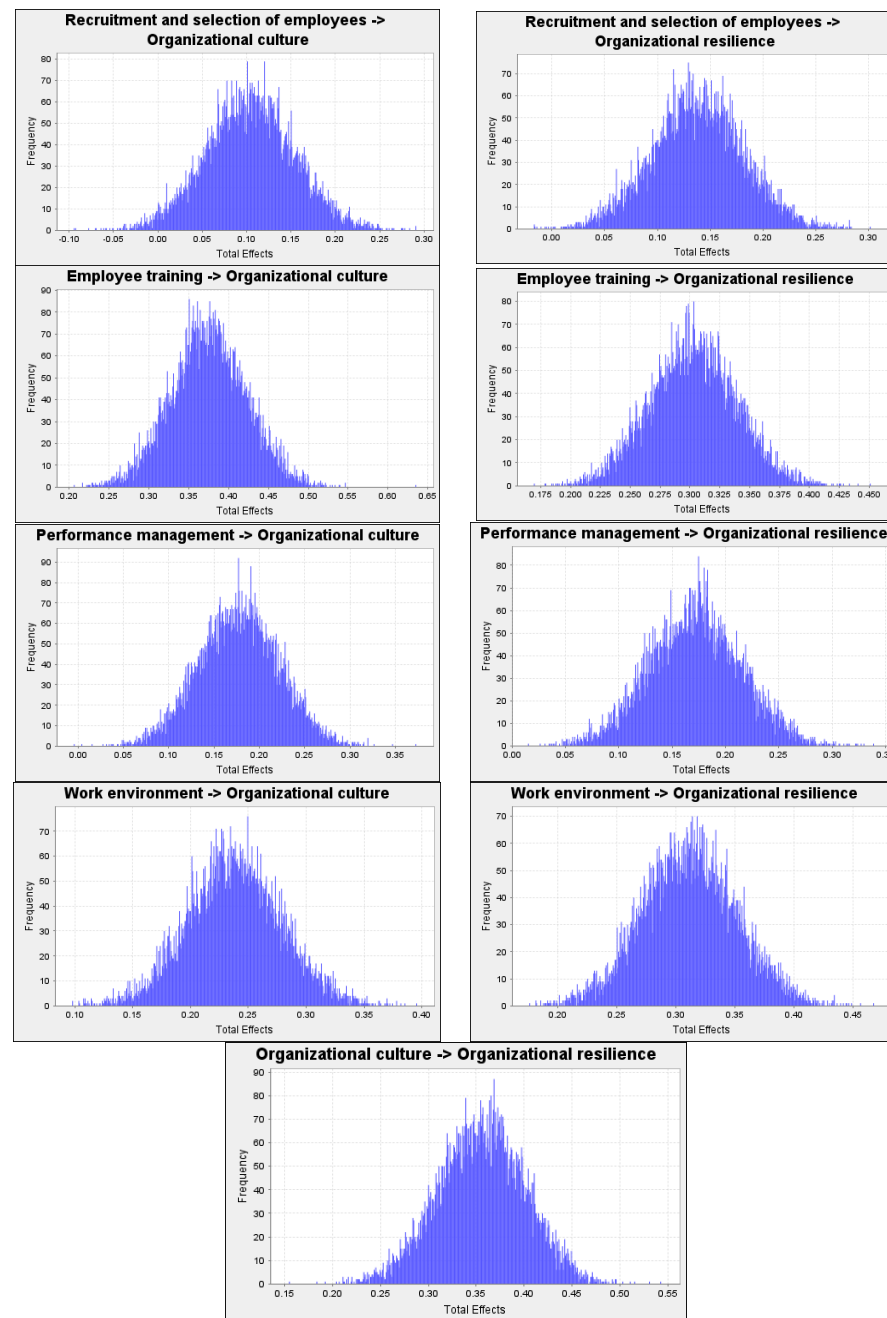


Figure A1. Total effects.

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