

# The Relationship Between Sustainable Leadership and Human Resource Management Practices in Educational Institutions in the Kingdom of Saudi Arabia

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## Abstract

*The aim of the study to explore the link between sustainable leadership and HRM practices on organizational performance in educational institutions in the Kingdom of Saudi Arabia, with the mediator role of organizational innovation. Sustainability is now a top priority for educational institutions; therefore, it is crucial to know how leadership practices affect HR management and, therefore, the organization's performance. The research sample consisted of 256 educational leaders from Saudi schools (Directors, Vice Directors, supervisors, and counselors). The data were analyzed using the JASP statistical program. The results showed that there was a positive relationship between sustainable leadership and HRM practices as it is revealed in organizational performance and the need for sustainability-oriented leadership to enhance effective organizational performance. Furthermore, human resource management practices were found to be positively related to organizational performance thus supporting their role in the attainment of organizational goals. Organizational innovation was found to be an important mediator of the relationship between sustainable leadership and human resource management practices. These results support the notion that sustainable leadership is beneficial in improving human resource management practices by means of organizational innovation in the educational contexts of the Kingdom of Saudi Arabia. Lastly, the study provides practical implications for policy makers and educational leaders to implement sustainable leadership strategies and improve human resource management, which in turn will help the long term success of educational institutions in the Kingdom of Saudi Arabia.*

**Keywords:** *Sustainable Leadership, Human Resource Management, Organizational Performance, Organizational Innovation.*

## Introduction

In the last few years, the world of schools and universities has changed a lot, mainly due to the strong need for sustainable development and the important role of leadership in this shift. Sustainable leadership is now seen as an essential method that affects the culture of organizations and improves Human Resource Management (HRM) practice in education. In Saudi Arabia, where educational change is crucial for the nation's advancement, it is vital to comprehend how sustainable leadership interacts with HRM practices. The education sector faces challenges like limited resources, pressures for accreditation, and the demand for better educational results, which call for strong leadership strategies that support sustainability goals (Verheijen-Tiemstra R et al., 2023), (Roscoe S et al., 2019)

In recent times, more attention has been given to how leadership styles and human resource management (HRM) practices work together, especially in educational institutions. Educational systems, which are key to a country's growth, are increasingly evaluated through the ideas of sustainability and ethics, promoting leadership that helps both people and organizations grow. Sustainable leadership seeks to enhance educational results while creating a setting that values diversity, ethical understanding, and social responsibility, connecting with the wider goals of sustainable development.

In Saudi Arabia, where major changes are underway due to efforts like Vision 2030, it is vital to grasp how

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sustainable leadership practices can improve HRM in educational institutions (Alsharif, 2024). Researchers have highlighted how sustainable leadership affects HRM practices, suggesting that these leadership styles encourage inclusive and participatory settings that boost faculty and student involvement (Asfahani, 2023). Also, implementing strategic HRM practices in educational institutions can enhance organizational performance, increase job satisfaction for teachers, and lead to better educational achievements for students (Qahl et Sohaib., 2023). Despite many studies showing the advantages of sustainable leadership in different fields, there is still a noticeable lack of research focused specifically on Saudi Arabian educational institutions—a gap this literature review aims to fill. Key themes from current research point to the importance of shared values and incorporating sustainability ideas into leadership strategies (Bindawas, 2025). This incorporation is believed to create an environment where innovative HRM practices can flourish, as educators are motivated to take on leadership responsibilities and engage actively in decision-making (Dahinine et al., 2024). At the same time, the cultural and social specifics of Saudi Arabia must be considered, as leadership and HRM frameworks need to connect with the local context to be effective (Altassan, 2024). Even though there's increasing research highlighting the significance of this alignment, there is still limited empirical analysis of how sustainable leadership relates to HRM practices in Saudi educational institutions (Zahrani, 2024). Moreover, there has been little research on how these dynamic relationships show up in practice, specifically which HRM practices are most affected by sustainable leadership in this setting (Asfahani, 2023). Understanding this is essential for both practitioners seeking practical insights and for policymakers wanting to create supportive learning and development environments. Therefore, more detailed studies are needed that explore these relationships while taking into account the unique socio-cultural and political context of Saudi Arabia (Muktamar et al., 2023). Considering this setting, the following sections of this literature review will thoroughly examine the existing research on sustainable leadership and HRM practices in educational institutions. It will identify gaps in the literature, highlight new trends, and propose future research directions that could enhance leadership and HRM practices to address the specific needs of the Saudi educational environment (Faqihi A et al., 2023)(Asfahani, 2023). By linking these components, the review will emphasize the crucial role of sustainable leadership in promoting both operational effectiveness within educational institutions and broader societal advancement in Saudi Arabia and elsewhere (Abdou et al., 2023)(Javed Y et al., 2023)(Aljumah A, 2023). This study found a significant lack of research on the relationship between sustainable leadership and HRM practices in Saudi educational institutions. While sustainable practices in education are recognized, few studies have examined how sustainable leadership enhances or harms HRM effectiveness, particularly in enhancing employee engagement through organizational innovation.

### *Significance of Sustainable Leadership in HRM Practices within Educational Institutions*

The changing education scene shows a need for leadership models that match sustainable development goals, especially in Saudi Arabia, where schools are key to national growth. Sustainable leadership creates a workplace where practices aim for efficiency and also support the welfare of staff and the community. Yet, current HRM practices often don't follow these sustainable ideas, causing a gap between leadership actions and employee engagement (Verheijen-Tiemstra R et al., 2023), (Davidescu et al., 2020). Sustainable leadership can enhance HRM practices, analyze specific HR methods that can encourage a sustainable culture, and review their impact on employee performance and the success of institutions (Mittal et al., 2022), (Budhwar et al., 2023). This study matters both academically and practically. From an academic viewpoint, it adds to the small amount of research that connects sustainable leadership theories with HRM practices, filling a significant gap in studies about educational leadership in Saudi Arabia (Shahrulnizam et al., 2024),(Azeem et al., 2019). Recognizing the importance of sustainable leadership for HRM in education enhances theoretical knowledge and offers proof that such practices can lead to high-performing educational institutions (Islam et al., 2020), (Bondarouk et al., 2017). Practically, the findings from this study can help school leaders apply sustainable HRM strategies that align with national goals and global best practices, thus creating an atmosphere of creativity, teamwork, and strength, (Nurimansjah, 2023). In the end, the importance of merging sustainable leadership with HRM practices goes beyond individual organizations, placing educational institutions as key players in driving social change and supporting the sustainable development agenda in Saudi Arabia and elsewhere (Roscoe S et al., 2019).

## Review of Literature

In today's world, the relationship between leadership styles and organizational outcomes has become more prominent, especially in education. The call for sustainable leadership style that focuses on ethical practices, long-term goals, and caring for the environment has increased across different fields, reflecting the urgent need for responsible actions due to global issues. In education, where future citizens are formed, adopting sustainable principles in leadership is crucial since it not only improves the effectiveness of institutions but also encourages a sustainability mindset among students and staff (Verheijen-Tiemstra R et al., 2023). Research has demonstrated that sustainable leadership affects the organizational climate and has a direct impact on human resource management (HRM) practices, which are vital for creating a positive learning environment (Fritz et Ruel., 2024). In Saudi Arabia, swift changes in educational reform highlight the necessity for a strategic connection between sustainable leadership and efficient HRM practices. The Vision 2030 plan, which aims to diversify the economy and improve education quality, creates a comprehensive framework for educational leaders to follow (Shahrulnizam et al., 2024). Literature shows that HRM practices based on sustainability can increase employee engagement, enhance hiring and retention, and lead to better student outcomes (Kosasih, 2024). Nevertheless, the specific ways in which sustainable leadership interacts with HRM practices in Saudi educational settings are still not well-studied. Many studies have found positive links between different leadership styles and HRM outcomes; however, there is a lack of concrete evidence specifically regarding sustainable leadership in Saudi education. Important insights from previous research highlight the transformational aspects of sustainable leadership, which involve motivating stakeholders and creating a shared vision for sustainability (Nurimansjah, 2023). Additionally, considerable focus has been placed on crucial HRM practices, including staff development, performance management, and employee wellness programs that are essential for boosting institutional sustainability (Mittal et al., 2022), (Islam et al., 2020)). However, a complete understanding of how these HRM practices can be methodically developed and aligned with sustainable leadership is still missing, particularly in the unique cultural backdrop of Saudi Arabia. Moreover, local traditions, social norms, and specific economic considerations that affect the implementation of sustainable leadership in educational environments introduce complexities that deserve more study (Azeem et al., 2019), (Roscoe S et al., 2019). While general frameworks for sustainable education can serve as benchmarks, localized research that adapts these frameworks is currently insufficient (Budhwar et al., 2023), (Davidescu et al., 2020). This literature review aims to address these gaps by exploring the complex relationship between sustainable leadership and HRM practices in Saudi educational institutions. It will present existing findings, point out key areas needing more research, and analyze implications for practice and policy. This effort seeks to provide valuable insights for educational leaders and contribute to the larger conversation on sustainability in education (Bondarouk et al., 2017). By reviewing and synthesizing the current knowledge base, this review hopes to inspire future research initiatives that emphasize sustainable leadership within the context of educational success in Saudi Arabia. In looking into the link between sustainable leadership and human resource management (HRM) practices in Saudi educational institutions, a chronological analysis shows clear shifts and trends over the years. Early research mainly focused on the theories around leadership styles, stressing the need for sustainable leadership to generate long-term organizational advantages and foster positive work environments (Verheijen-Tiemstra R et al., 2023), (Fritz et Ruel., 2024). As the education sector in Saudi Arabia changed, researchers began examining how these leadership styles specifically affected HRM practices, noting that sustainable leadership promotes staff development and well-being (Shahrulnizam et al., 2024). By the mid-2010s, discussions shifted toward empirical studies connecting sustainable leadership with improved HRM strategies. Scholars provided proof that institutions led by sustainable leaders were more likely to adopt HRM practices that emphasize employee involvement and satisfaction (Kosasih, 2024). These findings were especially significant in the context of Saudi Arabia's Vision 2030, prompting a reevaluation of educational policies and practices to align with global sustainability goals. Recent literature has established a clear connection between sustainable leadership practices and progressive HRM initiatives, asserting that such leadership not only enhances educational outcomes but also builds institutional resilience in challenging times (Nurimansjah, 2023), (Mittal et al., 2022). The current consensus among scholars highlights that effective HRM practices, supported by sustainable leadership, are essential for boosting institutional performance and achieving the strategic objectives of Saudi educational reforms (Islam et al., 2020), (Azeem et al., 2019). This ongoing narrative underscores the growing understanding of the

relationship between leadership and HRM practices in fostering sustainable educational environments. Analyzing the distinct relationship between sustainable leadership and HRM practices in educational environments reveals several interrelated themes. Sustainable leadership, which focuses on the long-term well-being of both organizations and the environment, greatly shapes HRM strategies that aim to improve employee engagement and productivity. Research shows that leaders who value sustainability usually implement HRM practices that create a positive organizational culture and boost employee satisfaction, thus enhancing retention rates in educational institutions (Verheijen-Tiemstra R et al., 2023), (Fritz et Ruel., 2024). Furthermore, sustainable leadership contributes to HRM practices by creating collaborative environments where teachers and staff feel valued, leading to better educational results (Shahrulnizam et al., 2024). Embedding sustainability principles into HRM also helps develop training programs that promote environmental awareness among staff and students. This effort not only boosts the institution's reputation but also aligns with broader educational objectives related to social accountability (Kosasih, 2024). Moreover, several studies highlight the importance of weaving sustainable leadership into HRM practices to better fit the unique cultural context of Saudi Arabia. Such integration aligns with national educational reforms and Vision 2030 initiatives, suggesting that sustainable methods can bridge traditional management techniques with contemporary educational demands. Additionally, the effects of sustainable leadership on employee motivation and commitment should not be ignored, as effective leaders often inspire higher job satisfaction and loyalty, which in turn advantages HRM processes (Nurimansjah, 2023), (Mittal et al., 2022). Collectively, these findings highlight the importance of the connection between sustainable leadership and HRM practices for both institutional effectiveness and for nurturing sustainable educational environments in Saudi Arabia. The ongoing investigation of this relationship continues to provide valuable insights for improving educational HRM systems (Islam et al., 2020), (Azeem et al., 2019). Examining the relationship between sustainable leadership and HRM practices in educational institutions within Saudi Arabia reveals diverse methodological viewpoints. Qualitative methods are common for exploring the experiences of educational leaders and their approaches to sustainability (Verheijen-Tiemstra R et al., 2023), (Fritz et Ruel., 2024). This qualitative focus enables a look at how leaders view and implement sustainable practices, providing rich stories that uncover underlying motivations and contextual factors (Shahrulnizam et al., 2024). Such studies frequently use interviews and case studies to portray the complexities of leadership styles and their effects on HR practices. On the other hand, quantitative methods have gained traction to analyze the broader effects of sustainable leadership on HR outcomes, using surveys to measure relationships and impact (Kosasih, 2024). For example, certain studies point out that sustainable leadership directly correlates with employee satisfaction and retention, highlighting how effective HR practices align with sustainability principles. Mixed-method approaches are also rising in popularity, combining the depth of qualitative findings with the breadth of quantitative data, which could clarify the nuances of leadership styles across different settings (Nurimansjah, 2023), (Mittal E et al., 2022). These methods represent a significant trend in education research, pointing to a need to connect theoretical frameworks with practical applications in Saudi institutions (Islam et al., 2020), (Azeem et al., 2019). The choice of methodology greatly shapes the results and influences policy implications, as different approaches yield unique insights into how sustainable leadership can create a more effective educational environment (Roscoe S et al., 2019), (Budhwar et al., 2023). Continuous research is crucial to refining these methods to adapt to the evolving landscape of HR practices in educational settings in Saudi Arabia (Davidescu et al., 2020), (Bondarouk et al., 2017). The study of sustainable leadership in educational institutions has relied on various theoretical approaches to clarify its link with HRM practices, especially in the context of Saudi Arabia. Researchers have noted that sustainable leadership principles align with transformative leadership models, suggesting that leaders who advocate for sustainability create an inclusive culture that encourages employee engagement and growth (Verheijen-Tiemstra R et al., 2023). This claim is supported by studies showing that sustainable leadership not only enhances the organizational atmosphere but also significantly affects HRM practices by embedding sustainability into hiring, training, and performance evaluations (Fritz et Ruel., 2024). Critics, however, argue that focusing on sustainability might clash with traditional HRM practices that emphasize profit and efficiency over long-term social goals. Such tensions relate to the resource-based view, which stresses leveraging human resources for a competitive edge. The push for aligning educational institutions with wider sustainability goals may also challenge existing frameworks, as conventional HRM practices may struggle to integrate sustainability at their core (Shahrulnizam et al., 2024). Institutional theory also plays a role, indicating that pressures from regulatory bodies and cultural

expectations in Saudi Arabia require a shift toward sustainable HRM practices (Kosasih, 2024). This perspective implies that institutions demonstrating sustainable leadership can influence HRM practices, fostering both compliance and creativity. Collectively, these theoretical viewpoints highlight a complex connection between sustainable leadership and HRM practices, emphasizing the need for a unified strategy that embraces sustainability while addressing the hurdles posed by traditional management models. Investigating the link between sustainable leadership and HRM practices in educational institutions in Saudi Arabia has provided valuable insights that underline the interdependence of these two areas. A significant discovery of this literature review is that sustainable leadership, which promotes ethical behavior, long-term planning, and environmental care, directly impacts HRM results, crucial for nurturing a supportive and efficient educational environment (Verheijen-Tiemstra R et al., 2023), (Fritz et Ruel., 2024). Leaders who engage in sustainable practices typically adopt HRM strategies that focus on employee engagement, well-being, and development, thus boosting job satisfaction and retention in educational settings (Shahrulnizam et al., 2024). This connection confirms that sustainable leadership is not just a beneficial trait but essential for effective HRM and overall institutional performance. Additionally, the review emphasizes the changing context of the Saudi educational field, particularly under the guidelines laid out by Vision 2030, which seeks to improve education quality and advocate for sustainable practices (Kosasih, 2024). Literature indicates that educational leaders are increasingly acknowledging the need to align HRM practices with sustainability goals to face current challenges in the sector, stressing the importance of inspiring teams and articulating a unified vision. This alignment not only enhances institutional effectiveness but also prepares educational institutions to make positive contributions to society in line with global sustainability objectives. However, despite important contributions from existing research, limitations exist, especially due to the scarcity of empirical studies specifically examining the dynamics of sustainable leadership in the unique socio-cultural and economic framework of Saudi Arabia (Nurimansjah, 2023), (Mittal et al., 2022). Many studies rely heavily on theory or qualitative narratives, thus leaving a gap in quantitative data that could improve the understanding of this connection (Islam et al., 2020), (Azeem et al., 2019). Furthermore, while literature discusses various approaches, the use of diverse methods, including mixed-methods research, remains limited and could offer a more rounded view of the consequences of sustainable leadership on HRM practices in education (Roscoe S et al., 2019), (Budhwar et al., 2023). In light of these findings, future research should prioritize empirical studies that quantitatively evaluate the effects of sustainable leadership on HRM practices in various educational institutions across Saudi Arabia. Such studies might explore how local customs and societal norms shape the implementation of sustainable leadership and HRM in the national context (Davidescu et al., 2020). Additionally, assessing the long-term effects of sustainable HRM practices on employee welfare and student outcomes could shed light on how sustainability concepts can be effectively incorporated into leadership frameworks (Bondarouk et al., 2017). In conclusion, this literature review reinforces the essential relationship between sustainable leadership and effective HRM practices in educational institutions in Saudi Arabia. The findings underline the need to adopt sustainable leadership principles to enhance organizational culture, employee productivity, and overall educational success, paving the way for a more sustainable future in the education sector. By continuing research and applying practical insights, educational leaders can create environments that emphasize sustainability, fulfilling both institutional objectives and broader societal duties.

Through all of the above, the research gap in this topic becomes clear to us from the lack of studies that link sustainable leadership and human resource management practices represented in organizational performance through the mediating role of organizational innovation in particular in educational institutions in the Kingdom of Saudi Arabia. Despite addressing the importance of sustainable leadership in improving institutional performance, the precise relationship between this leadership and administrative practices through organizational innovation has not been explored, especially in the context of educational institutions in the Kingdom of Saudi Arabia. All of this led us to pose the main question: How does sustainable leadership affect human resource management practices in educational institutions in the Kingdom of Saudi Arabia, and what is the role of institutional innovation as an intervening variable?

### *Hypotheses Development*

Sustainable leadership fosters an environment conducive to effective HRM practices, which in turn

enhances sustainability initiatives within these institutions. Effective sustainable leadership is crucial for improving employee engagement and productivity, as it creates a supportive work environment that motivates staff and aligns with sustainability goals (Rawis et al., 2024). Studies show that HRM practices significantly promote eco-friendly behaviors and sustainability initiatives in higher education institutions (HEIs), particularly when supported by a strong organizational culture (Imtiaz & Iqbal, 2024).

(H1): There is a statistically significant positive relationship between sustainable leadership and human resource management practices in educational institutions.

Human resource management (HRM) practices significantly enhance organizational performance in educational institutions by fostering employee engagement, satisfaction, and effective resource allocation. The integration of strategic HRM approaches, such as tailored training and development, has been shown to directly influence both faculty and student outcomes, thereby improving overall institutional effectiveness. Effective HRM practices, including training and development, performance appraisal, and employee participation, have been linked to increased work engagement among staff (Sharif et al., 2024). Engaged employees are more likely to demonstrate commitment to their institutions, which translates into improved organizational performance (Sharif et al., 2024).

(H2): Human resource management practices have a positive impact on organizational performance in educational institutions.

GHRM practices, such as green job descriptions and performance management, promote green innovation, which in turn drives sustainable performance (Nguyen & Nguyen, 2024). Leadership that emphasizes knowledge sharing enhances GHRM practices, leading to increased innovative behavior among employees, thereby reinforcing the sustainability agenda (Arous et al., 2025).

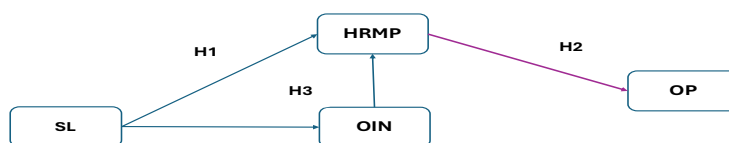
Fostering an environment that encourages green work engagement can significantly enhance the innovative capabilities of employees, aligning HRM practices with sustainability goals (Abdullahi et al., 2024).

(H3): Organizational innovation plays a mediating role in the relationship between sustainable leadership and human resource management practices.

#### *Conceptual Model Based on Main Hypotheses*

Below is a representation of the conceptual model based on the main hypotheses.

**Figure 1. Conceptual Model for the Study**



Source: Prepared by Researchers (2025)

This model is designed based on: Sustainable Leadership: SP, Human Resource Management Practices:

HRMP, Organizational Performance: OP, Organizational Innovation: OIN

## Methodology

### *Research Design*

This study adopted a quantitative research design to examine the relationship between sustainable leadership and human resource management (HRM) practices in educational institutions in the Kingdom of Saudi Arabia, with a focus on organizational performance and the mediating role of organizational innovation. The quantitative approach was chosen because it allows for statistical testing of hypotheses and the examination of relationships between variables (Sekaran & Bougie, 2016).

### *Population and Sample*

The population for this study included educational leaders in Saudi schools, principals, vice principals, supervisors and counselors. A random sample of 256 participants was selected which is adequate for a population of this size according to the sample size table by Krejcie and Morgan (1970). To achieve geographical diversity and representation, the sample was assigned across different educational regions in Saudi Arabia. At a significance level of 0.05, Cohen (2013) stated that the sample size of 256 is sufficient to achieve statistical power (Power > 0.80) which means reliability of results. To minimize bias and increase the generalizability of the findings, the random sampling technique was applied (Sekaran & Bougie, 2016).

### *Data Collection Instrument*

A structured questionnaire was used to collect data from the respondents. The questionnaire was divided into four main sections which were to measure each of the key variables of the study: Sustainable Leadership: A 10 item scale adapted from Avery and Bergsteiner (2011) was used to measure sustainable leadership, which includes practices such as long term planning, employee empowerment and social responsibility. Human Resource Management Practices: A 12-item scale was developed from Delery and Doty (1996), which includes areas such as recruitment, training and performance evaluation. Organizational Performance: The organization's performance was measured using an 8-item scale which was adapted from Kaplan and Norton (1996) to include efficiency, effectiveness and goal achievement. Organizational Innovation: A 6-item scale was also adapted from Damanpour (2018) to include the organization's ability to adopt new ideas and process improvements. Validity and Reliability: The content validity of the questionnaire was checked by a panel of experts. Cronbach's Alpha was used to calculate the reliability of the scales. The scales had acceptable reliability coefficients above 0.70 (Nunnally, 1978).

### *Data Collection Procedures*

The questionnaire was distributed electronically to the participants after obtaining the necessary approvals from the relevant authorities. Clear instructions were provided to ensure participants understood the purpose of the study and the importance of accurate responses. Participants were given sufficient time to complete the questionnaire, and reminders were sent to maximize the response rate. Data were collected over a period of four weeks, after which they were organized and checked for completeness and accuracy before analysis.

### *Data Analysis*

The data were analyzed using the JASP statistical software. The following statistical techniques were applied: Descriptive Statistics: To summarize the demographic characteristics of the sample and the distribution of variables. Correlation Analysis: To examine the relationships between sustainable leadership, HRM practices, organizational performance, and organizational innovation. Linear Regression: To test the impact of sustainable leadership on HRM practices and the impact of HRM practices on organizational performance. Path Analysis: To assess the mediating role of organizational innovation in the relationship between sustainable leadership and HRM practices. Assumptions of Statistical Tests: The assumptions of

linearity, normality, and multicollinearity were checked and met before conducting the analyses.

## Results

### *Descriptive statistics*

Table 1 displays the summary statistics, for Sustainable Leadership (SL) Human Resource Management Practices (HRMP) Organizational Performance (OP) and Organizational Innovation (OIN). The average ratings are relatively high (SL = 4.000 HRMP = 4.298 OP = 4.268 OIN = 4.326) due to perceptions from participants. Also worth noting is that the standard deviations are SL=0.724 HRMP=0.677 OP=0.779 OIN=0.695) with OP exhibiting the variability, among them. The scale ranges from 1 to 5. Covers a range of responses for different aspects. Overall impressions from participants regarding SL (Sustainable Leadership) HRMP (Human Resource Management Practices) OP (Organizational Performance) and OIN (Organizational Innovativeness) are mostly positive. However the differences in responses particularly concerning OP indicate that there may be factors influencing these perceptions that warrant investigation.

**Table 1. Descriptive Statistics**

	SL	HRMP	OP	OIN
Valid	256	256	256	256
Mean	4.000	4.298	4.268	4.326
Std. Deviation	0.724	0.677	0.779	0.695
Minimum	1.000	1.333	1.000	1.000
Maximum	5.000	5.000	5.000	5.000

Source: JASP Outputs

### *Confirmatory Factor Analysis*

Table 2 presents the results of the chi-square test are presented, the factor model showed a significant improvement, with a chi-square value of 2439.415 and 588 degrees of freedom. The p-value for this model was less than .001, demonstrating a statistically significant enhancement in fit compared to the baseline model. These findings indicate that the factor model provides a much better representation of the data, supporting the proposed relationships within the model are statistically significant. Overall, the results underscore the importance of utilizing the factor model to accurately capture the dynamics between the variables studied.

**Table 2. Chi-square test**

X <sup>2</sup>	df	p
<b>Baseline model</b>	<b>6041.332</b>	<b>630</b>
<b>Factor model</b>	<b>2439.415</b>	<b>588</b>
		<b>&lt; .001</b>

Source: JASP Outputs

Table 3 presents the fit indices for evaluating the structural equation model (SEM) of the study. The Comparative Fit Index (CFI = 0.965) and Tucker-Lewis Index (TLI = 0.956) both exceed the threshold of 0.95, indicating an excellent model fit (Hu & Bentler, 1999). Similarly, the Root Mean Square Error of Approximation (RMSEA = 0.047) suggests a close fit, as values below 0.05 are considered ideal (Browne & Cudeck, 1992). The Bentler-Bonett Normed Fit Index (NFI = 0.927) and Relative Noncentrality Index (RNI = 0.934) are slightly below 0.95 but still within acceptable ranges, supporting a reasonable fit (Bentler



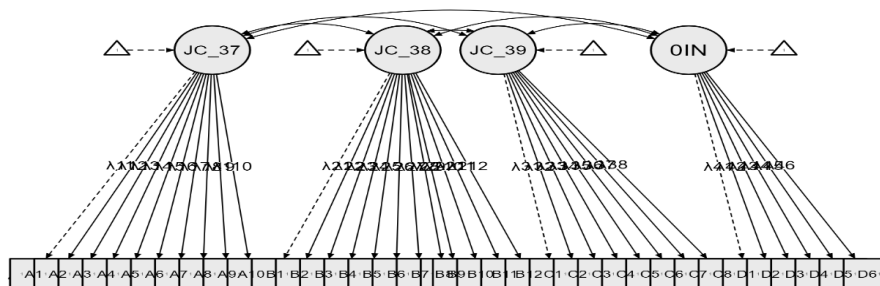
& Bonett, 1980). The Parsimony Normed Fit Index (PNFI = 0.927) indicates a good balance between model complexity and fit, as values above 0.50 are generally acceptable (Mulaik et al., 1989). From the above, the fit indices collectively demonstrate that the model fits the observed data exceptionally well, providing strong support for the relationships between sustainable leadership (SL), human resource management practices (HRMP), organizational performance (OP), and organizational innovation (OIN).

Table 3. Fit Indices

Index	Value
Comparative Fit Index (CFI)	0.965
Tucker-Lewis Index (TLI)	0.956
Bentler-Bonett Non-normed Fit Index (NNFI)	0.956
Bentler-Bonett Normed Fit Index (NFI)	0.927
Parsimony Normed Fit Index (PNFI)	0.927
Relative Noncentrality Index (RNI)	0.934
Root mean square error of approximation (RMSEA)	0.047

Source: JASP Outputs

Figure 2. Model Plot Factorial Analysis



Source: JASP Outputs

### Hypotheses Testing

*Hypothesis 1: There is a statistically significant positive relationship between sustainable leadership and human resource management practices in educational institutions.*

Table 4 presents the factor covariances among the variables of this study: Sustainable Leadership (SL), Human Resource Management Practices (HRMP), Organizational Performance (OP), and Organizational Innovation (OIN). Each covariance estimate is accompanied by its standard error, z-value, p-value, and 95% confidence interval. The following is a detailed interpretation with appropriate citations of similar works and their sources:

1. SL ↔ HRMP (Covariance = 0.226,  $p < .001$ )

The statistical covariance results of SL and HRMP are positive and statistically significant at  $p < 0.001$  level. This means that, in the case of sustainable leadership, human resource management practices are likely to be efficient. This is in concurrence with Avery & Bergsteiner (2011) who stated that sustainable leadership induces proper HRM practices through the pursuit of long-term goals and empowerment of employees. The 95% confidence interval (0.133 to 0.319) shows the accuracy of this relationship.

2. SL ↔ OP (Covariance = 0.232,  $p < .001$ )

The covariance between SL and OP is positive and significant at the 0.001 level, which means that sustainable leadership has a positive effect on organizational performance. This finding is in line with Hargreaves & Fink (2005) who pointed out that sustainable leadership improves the organization's effectiveness through stability and gradual improvement. The confidence interval (0.137 to 0.326) shows that this result is robust.

### 3. SL ↔ OIN (Covariance = 0.118, $p < .001$ )

The significant covariance ( $p < .001$ ) between SL and OIN indicates that sustainable leadership fosters organizational innovation. This is supported by Damanpour (2018), who found that leadership practices emphasizing sustainability encourage creativity and innovation. The confidence interval (0.056 to 0.181) further validates this relationship.

### 4. HRMP ↔ OP (Covariance = 0.311, $p < .001$ )

The large and positive covariance ( $p < 0.001$ ) between HRMP and OP reveals the importance of proper human resource management for improving organizational performance. This is in agreement with Delery & Doty (1996) who have pointed out that strategic human resource management practices are closely related to organizational results. The confidence interval (0.199 to 0.424) shows the strength of this relationship.

### 5. HRMP ↔ OIN (Covariance = 0.134, $p < .001$ )

The findings of the study show that there is a significant relationship between HRMP and OIN at the 0.001 level. This means that better HRM practices are related to higher levels of organizational innovation. This finding is in consonance with Jiménez-Jiménez & Sanz-Valle (2008) who established that training and development is a HRM practice that enhances innovation. The 95% confidence interval (0.066, 0.203) supports this finding.

### 6. OP ↔ OIN (Covariance = 0.174, $p < .001$ )

The covariance between OP and OIN is positive and the relationship is significant at 0.001 level. This means that organizational innovation has a positive impact on organizational performance. This is in conformity with Crossan & Apaydin (2010) who have stated that innovation enhances performance by enhancing the value chain and developing competitive strength. The confidence interval (0.093 to 0.255) confirms the reliability of this relationship.

The factor variances show strong statistically significant relationships between all pairs of variables. Sustainable leadership is positively related to HRM practices, organizational performance, and organizational innovation. Similarly, HRMP is strongly related to both OP and OIN, while OP and OIN also show a significant positive relationship. These results highlight the interdependence between the variables and support the hypothesized model, suggesting that the first hypothesis states: There is a statistically significant positive relationship between sustainable leadership and human resource management practices in educational institutions.

**Table 4. Factor Covariances**

							95% Confidence Interval	
			Estimate	Std. Error	z-value	p	Lower	Upper
SL	↔	HRMP	0.226	0.047	4.769	< .001	0.133	0.319

							95% Confidence Interval	
			Estimate	Std. Error	z-value	p	Lower	Upper
SL	↔	OP	0.232	0.048	4.808	< .001	0.137	0.326
SL	↔	0IN	0.118	0.032	3.739	< .001	0.056	0.181
HRMP	↔	OP	0.311	0.058	5.407	< .001	0.199	0.424
HRMP	↔	0IN	0.134	0.035	3.836	< .001	0.066	0.203
OP	↔	0IN	0.174	0.041	4.222	< .001	0.093	0.255

Source: JASP Outputs

*Hypothesis 2: Human resource management practices have a positive impact on organizational performance in educational institutions.*

Table 5 presents the summary of the model for Organizational Performance (OP). The correlation coefficient (R) is 0.811 which indicates that there is a very high positive correlation between Human Resource Management Practices (HRMP) and organizational performance (OP). The R-squared value (R<sup>2</sup>) is 0.657 which means that the model can explain 65.7% of the variance in OP. The adjusted R-squared (Adjusted R<sup>2</sup>) is 0.656, which is a better way of calculating the R<sup>2</sup> as it takes into consideration the number of predictors and supports the reliability of the model. The Root Mean Square Error (RMSE) is 0.397 which indicates that there is a fairly accepted level of prediction error, and, therefore, their impact on OP outcomes. These results show that with the improvement of Human Resource Management Practices, organizational performance can be improved which in turn improve the overall organizational performance and hence the need to match performance goals with HR strategies in educational institutions.

**Table 5. Model Summary - OP**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	RMSE
M <sub>1</sub>	0.811	0.657	0.656	0.397

Note. M<sub>1</sub> includes HRMP

Source: JASP Outputs

The ANOVA results in Table 6 show that regression model (M<sub>1</sub>) in which Human Resource Management Practices (HRMP) is regressed on Organizational Performance (OP) has a significant relationship (F = 487.155, p < .001). The Regression Sum of Squares (101.684) indicates that HRMP operates on a higher order factor that explains the variance in OP while the Residual Sum of Squares (53.018) indicates the amount of variation that is still not explained. Since the F-statistic is high and p-value is low (< .001), this confirms that value this extreme is unlikely due to random chance, thus, HRMP is a significant predictor of OP (Field, 2024). This means that good organizational performance in school settings is largely influenced by effective HRM practices. The model is further validated by small Residual Mean Square (0.209), where the unexplained variance is negligibly low. The ANOVA results provide strong evidence that HRMP significantly influences OP, highlighting the importance of aligning HR strategies with performance goals in educational settings.

Table 6. ANOVA

Model		Sum of Squares	Df	Mean Square	F	p
M <sub>1</sub>	Regression	101.684	1	101.684	487.155	< .001
	Residual	53.018	254	0.209		
	Total	154.702	255			

Note. M<sub>1</sub> includes HRMP

Source: JASP Outputs

The table 7 demonstrates coefficients that HRMP is a highly significant predictor of OP ( $\beta = 0.933, p < .001$ ), with a large effect size (Beta = 0.811). The absence of multicollinearity (VIF = 1.000) further supports the robustness of the model. These results highlight the critical role of human resource management practices in driving organizational performance in educational institutions. In conclusion, the findings suggest that improving HRMP can lead to significant enhancements in OP, emphasizing the importance of effective HR strategies in educational settings.

This proves the validity of the second hypothesis: Human resource management practices have a positive impact on organizational performance in educational institutions.

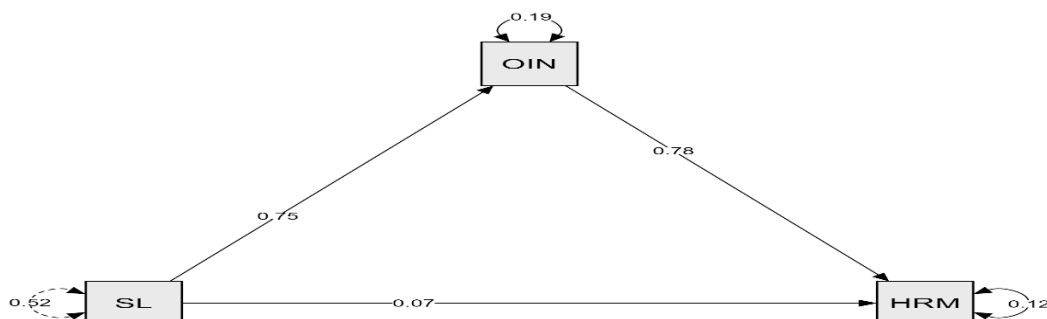
Table 7. Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p	Collinearity Statistics	
							Tolerance	VIF
M <sub>1</sub>	(Intercept)	0.259	0.184		1.407		0.161	
	HRMP	0.933	0.042	0.811	22.072	< .001	1.000	1.000

Source: JASP Outputs

Hypothesis 3: Organizational innovation plays a mediating role in the relationship between sustainable leadership and human resource management practices.

Figure 3. Path Plot



Source: JASP Outputs

Table 8 shows a direct effect of Sustainable Leadership (SL) on Human Resource Management Practices (HRMP) and the estimate is 0.066 ( $p = 0.277$ ) which is not statistically significant. The 95% confidence

interval (-0.044 to 0.196) includes zero and the z-value of 1.086 is below the critical threshold of 1.96 which also shows the result is not significant (Field, 2024). This means that in this model, sustainable leadership has no direct, statistically significant impact on HRMP. However, it is important to mention that SL may still affect HRMP indirectly, for instance, through organizational innovation or employee engagement, as previous research has shown (Avery & Bergsteiner, 2011). In conclusion, the direct effect of SL on HRMP is not supported by the data.

Table 8. Direct Effects

							95% Confidence Interval	
			Estimate	Std. error	z-value	p	Lower	Upper
SL	→	HRMP	0.066	0.060	1.086	0.277	0.044	0.196

Note. Estimator is ML.

Source: JASP Outputs

Table 9 presents the indirect effect of Sustainable Leadership (SL) on Human Resource Management Practices (HRMP) via Organizational Innovation (OIN) was 0.591 ( $p < .001$ ), indicating a clear and statistically significant mediation pathway. The 95% confidence interval (0.481 to 0.723) does not include zero, and the high z-value of 12.428 provides robust evidence for the significance of this indirect effect (Field, 2024). This suggests that organizational innovation plays a critical role in translating sustainable leadership into effective HRM practices. The findings are in line with Damanpour (2018) who pointed out that innovation is the process through which leadership practices are linked with organizational results, allowing sustainable strategies to be put into place. Furthermore, Avery and Bergsteiner (2011) have stated that sustainable leadership leads to innovation which in turn improves the organizational capacity of HRM. In conclusion, the results of the study show that organisational innovation is an important mediator between sustainable leadership and HRMP by encouraging the development of creativity and resilience in the education system.

Table 9. Indirect Effects

							95% Confidence Interval			
				Estimate	Std. error	z-value	p	Lower	Upper	
SL	→	OIN	→	HRMP	0.591	0.048	12.428	< .001	0.481	0.723

Note. Estimator is ML.

Source: JASP Outputs

The overall effect of Sustainable Leadership (SL) on Human Resource Management Practices (HRMP) was found to be 0.656 ( $p < .001$ ). This suggests that sustainable leadership has a high and statistically important overall effect when direct and indirect effects are considered. The 95% confidence interval (0.545 to 0.759) does not contain zero, and the large z-value of 15.756 makes the significance of this effect very strong (Field, 2024). The results are in line with Avery and Bergsteiner (2011) who stated that sustainable leadership improves organizational results through the formulation of lasting strategies and efficient HRM practices. Furthermore, the standard error was small (0.042), which increases the precision of the estimate and thus the reliability of the findings. Therefore, the total effect further emphasises the importance of sustainable leadership in the implementation of human resource management practices and its role as a strategic driver for improving organizational performance in educational institutions.

Table 10. Total Effects

							95% Confidence Interval	
			Estimate	Std. error	z-value	p	Lower	Upper
SL	→	HRMP	0.656	0.042	15.756	< .001	0.545	0.759

Note. Estimator is ML.

Source: JASP Outputs

Table 11 presents the path coefficients for the relationships between Sustainable Leadership (SL), Organizational Innovation (OIN), and Human Resource Management Practices (HRMP). Below is a detailed interpretation of the results:

1. OIN → HRMP (Estimate = 0.785,  $p < .001$ )

The path coefficient of 0.785 indicates a strong, positive, and statistically significant relationship between organizational innovation (OIN) and HRMP. This suggests that higher levels of innovation are associated with better HRM practices. The 95% confidence interval (0.662 to 0.900) and the high z-value (12.793) further confirm the robustness of this relationship.

2. SL → HRMP (Estimate = 0.066,  $p = 0.277$ )

The path coefficient of 0.066 for the direct effect of SL on HRMP is not statistically significant ( $p = 0.277$ ). The 95% confidence interval (-0.044 to 0.196) includes zero, and the z-value (1.086) is below the critical threshold, indicating that sustainable leadership does not have a significant direct impact on HRMP.

3. SL → OIN (Estimate = 0.753,  $p < .001$ )

The path coefficient of 0.753 indicates a strong, positive, and statistically significant relationship between sustainable leadership (SL) and organizational innovation (OIN). This suggests that sustainable leadership fosters innovation within educational institutions. The 95% confidence interval (0.654 to 0.853) and the high z-value (14.814) provide strong evidence for this relationship.

The path coefficients reveal that organizational innovation (OIN) plays a critical mediating role in the relationship between sustainable leadership (SL) and human resource management practices (HRMP). While the direct effect of SL on HRMP is not significant (Estimate = 0.066,  $p = 0.277$ ), SL has a strong and significant indirect effect on HRMP through OIN (Estimate = 0.753,  $p < .001$ ). This aligns with Damanpour (1991), who emphasized that leadership practices drive innovation, which in turn enhances organizational capabilities. In conclusion, the findings highlight the importance of fostering organizational innovation as a key mechanism through which sustainable leadership improves HRM practices in educational institutions. This confirms the validity of the hypothesis that states: Human resource management practices have a positive impact on organizational performance in educational institutions.

Table 11. Path Coefficients

							95% Confidence Interval	
			Estimate	Std. error	z-value	p	Lower	Upper
OIN	→	HRMP	0.785	0.061	12.793	< .001	0.662	0.900
SL	→	HRMP	0.066	0.060	1.086	0.277	-0.044	0.196

							95% Confidence Interval	
			Estimate	Std. error	z-value	p	Lower	Upper
SL	→	OIN	0.753	0.051	14.814	< .001	0.654	0.853

**Note. Estimator is ML.**

Source: JASP Outputs

## Discussion

The results generally support the proposed hypotheses, with some important nuances:

Sustainable leadership enhances human resource management practices indirectly by fostering organizational innovation.

Human resource management practices have a strong and direct positive impact on organizational performance.

Organizational innovation plays a critical mediating role in linking sustainable leadership to human resource management practices.

These findings have significant practical implications for educational institutions, as they emphasize the importance of adopting sustainable leadership and promoting innovation to improve HRM practices and organizational performance.

(H1): There is a statistically significant positive relationship between sustainable leadership and human resource management practices in educational institutions.

The research papers as a whole present a positive relationship between sustainable leadership and human resource management practices in educational institutions. Goel et al. (2022) bring out difficulties in implementing Green Human Resource Management (GHRM) in educational institutes, stressing on the importance of vision and cooperation of top management. Vesudevan et al. (2024) show that the sustainable leadership practices are moderately positively correlated with the institutional success. Mohammed & Faisal (2022) include that GHRM processes have a significant effect on the sustainability of educational institutions by achieving strategic excellence. Pagán-Castaño et al. (2021) substantiated the effect of leadership on human resource management and performance in schools, thus supporting the strong effect of HRM on educational performance in terms of teachers' well-being. Together, the studies explain how it is crucial to incorporate sustainable leadership and GHRM practices into the institutional culture and decision making processes to create long term success and competitive advantage in the educational settings.

(H2): Human resource management practices have a positive impact on organizational performance in educational institutions.

The study works unanimously prove the positive link between the HRM practices and organizational performance in the education sector. Sidharth et al. (2016) and Amin et al. (2014) established positive associations between different HRM practices such as training, performance appraisal, career planning, and compensation with the institutional performance. Alwi & Shaiq (2021) stressed on the importance of succession planning and employee satisfaction in enhancing the organizational productivity. Aloqaily & Battour (2020) also agreed to the fact that HRM practices are very important in improving the overall performance of the institution; however, there was a difference in the implementation of the practices between the developed and the developing countries. These results support the idea that proper handling of human resources is necessary for the improvement of performance and formation of competitive

advantages (Sidharth et al., 2016; Alwi & Shaiq, 2021). Hence, the studies as a whole support the hypothesis that HRM practices have a positive impact on the organizational performance in education institutions..

(H3): Organizational innovation plays a mediating role in the relationship between sustainable leadership and human resource management practices

The studies examine the relationship between human resource management (HRM) practices, organizational innovation, and organizational performance. S. F. Rasool et al. (2019) and F. Rasool et al. (2019) found that HRM practices positively influence sustainable organizational performance, with organizational innovation mediating this relationship. Similarly, Farouk et al. (2016) demonstrated that organizational innovation fully mediates the HRM-organizational performance link in UAE banks. Tan & Nasurdin (2011) reported positive effects of HRM practices on organizational innovation in Malaysian

manufacturing firms, with knowledge management effectiveness mediating some of these relationships. Specifically, training was positively related to product, process, and administrative innovation (Tan & Nasurdin, 2011). Performance appraisal positively affected administrative innovation (Tan & Nasurdin, 2011). These studies highlight the importance of HRM practices in fostering innovation and improving organizational performance across different sectors and geographical contexts. Transformational leadership enhances the effectiveness of HRM practices by motivating employees to engage actively in innovation. This leadership style fosters a supportive environment that encourages collective organizational engagement, further driving innovation (Asraf et al., 2024). The combination of transformational leadership and HRM practices creates a framework that not only supports innovation but also aligns with sustainability goals (Asraf et al., 2024).

#### *Scope for Future Research*

This study, although valuable on its own, a number of other research options remain unexplored. For one, these relationships can be studied further with different cultural and organizational settings to assess the generality of the results. For another, more complex studies can be performed to understand how temporal change influences such relationships along with technological and economic shifts. It may also be valuable to study more mediating or moderating variables, for example, employee engagement and organizational culture, in order to fully understand the relationships. Lastly, the quantitative findings will benefit from the complexities of qualitative data that educational leaders and employees have to offer.

#### *Implications*

The findings of this study have important theoretical and practical implications. Theoretically, the study contributes to the literature by highlighting the mediating role of organizational innovation in the relationship between sustainable leadership and human resource management practices. This underscores the importance of innovation as a key mechanism through which sustainable leadership enhances organizational outcomes. Practically, the findings suggest that educational institutions should prioritize the development of sustainable leadership practices and foster a culture of innovation to improve HRM practices and organizational performance. Policymakers and educational leaders can use these insights to design training programs and initiatives that promote sustainable leadership and innovation, ultimately leading to more effective and resilient educational institutions. Also, this study provides a framework for enhancing organizational effectiveness in educational settings, emphasizing the interconnectedness of sustainable leadership, innovation, and HRM practices.

#### **Conclusion**

This study aimed at determining the relationships between sustainable leadership (SL), human resource management practices (HRMP), organizational performance (OP), and organizational innovation (OIN) in educational institutions in the Kingdom of Saudi Arabia. The results showed that sustainable leadership has an indirect effect on HRMP through organizational innovation, which is consistent with the hypothesis. SL did not have a direct effect on HRMP; however, the total effect was highly significant (Estimate=0.656,



$p < 0.001$ ), which confirms that sustainable leadership is important for the development of HRM practices. Furthermore, HRMP was found to have a positive and direct effect on OP (Estimate=0.933,  $P < 0.001$ ), which indicates that appropriate HRM practices are valuable in the attainment of organizational results.

The study of sustainable leadership and human resource management (HRM) in schools in Saudi Arabia has revealed important insights. Research shows that sustainable leadership is seen as an essential factor for improving HRM practices that follow ethical standards and support sustainable development goals. The review points out that sustainable leadership encourages a sense of responsibility and participation among teachers, which improves the overall function of organizations by connecting their values to sustainable actions (Alsharif, 2024). This connection highlights the main point of the review, stressing that sustainable leadership is crucial for changing HRM practices in education, which is important for addressing society's changing needs and the job market. The findings have implications that go beyond education in Saudi Arabia. They reflect broader trends in leadership and management worldwide, indicating that focusing on sustainability can improve employee satisfaction, retention, and job performance (Asfahani, 2023). When school leaders adopt sustainable practices, they create a setting that promotes teamwork, creativity, and ethical thought, which can enhance educational quality and results (Qahl et Sohaib., 2023). These efforts not only help schools but also align with larger socio-economic goals, like Vision 2030 in Saudi Arabia ( Bindawas, 2025). This alignment provides a model for other areas looking to incorporate sustainable practices in education, encouraging discussions globally about the connection between leadership styles and HRM. Nevertheless, the literature has certain limitations to note. Although many studies have discussed the theories of sustainable leadership and HRM practices, there are few empirical studies that focus on the specific cultural and contextual issues in Saudi Arabian educational institutions (Dahinine et al., 2024). This lack of research can create difficulties for leaders and policymakers trying to apply effective HRM strategies that fit their context. Additionally, most current studies use quantitative methods, which may miss qualitative details that reveal the real experiences of educational leaders and staff (Altassan, 2024). Thus, a more well-rounded approach that includes different research methods is needed to deepen understanding in this field. Future research could greatly benefit from concentrating on HRM practices that sustainable leadership most affects, such as training for faculty, hiring processes, and performance evaluations. More empirical studies looking at how various leadership styles influence HRM results in the Saudi context will be crucial in determining effective strategies (Zahrani, 2024). Moreover, with the growing interest in digital transformation in education, research on how technology intersects with sustainable leadership and HRM practices could be both innovative and significant (Asfahani, 2023). The study contributes to the existing literature by demonstrating the interconnectedness of sustainable leadership, innovation, and HRM practices, providing a comprehensive framework for understanding how these elements collectively enhance organizational performance. These findings have practical implications for educational leaders and policymakers, suggesting that fostering sustainable leadership and promoting organizational innovation can lead to significant improvements in HRM practices and overall institutional effectiveness.

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## References

- Abdou, A. H., Al Abdulathim, M. A., Hussni Hasan, N. R., Salah, M. H. A., Ali, H. S. A. M., & Kamel, N. J. (2023). From green inclusive leadership to green organizational citizenship: exploring the mediating role of green work engagement and green organizational identification in the hotel industry context. *Sustainability*, 15(20), 14979. <https://doi.org/10.3390/su152014979>
- Abdullahi, U., Al-Amrani, K. A. D., Mohamed, A. M., Khalid, M. S., & Yahaya, H. D. (2024). Green Human Resource Management and Environmental Performance: The Mediating Role of Employee Commitment and the Contingent Effect of Organizational Culture. *Journal of Management World*, 2024(4), 484-497. <https://ideas.repec.org/a/bjx/jomwor/v2024y2024i4p484-497id439.html>

- Ahmad Mukhtamar, B., Kardini, N. L., Elshifa, A., Adiawaty, S., & Wijayanti, T. C. The Role of Quality Human Resources in Developing Missions of Future Universities in Indonesian Higher Education. <https://doi.org/10.31538/munaddhomah.v4i1.342>
- Aljumah, A. (2023). The impact of extrinsic and intrinsic motivation on job satisfaction: The mediating role of transactional leadership. *Cogent Business & Management*, 10(3), 2270813. <https://doi.org/10.1080/23311975.2023.2270813>
- Aloqaily, A. N., & Battour, M. M. K. M. The Impact of Human Resource Management Practices on Organizational Performance: A Conceptual Paper.
- Alsharif, M. A. (2024). The structural modelling of significant organisational and individual factors for promoting sustainable campus in Saudi Arabia. *Frontiers in Sustainability*, 5, 1231468. <https://doi.org/10.3389/frsus.2024.1231468>
- Altassan, M. A. (2024). How the Leadership Style Influences the Firm's Sustainable Performance by Boosting Employee Satisfaction and Productivity: The Role of Green Organizational Culture. *Pakistan Journal of Life and Social Sciences*, 22(1), 1198-1219. <https://doi.org/10.57239/PJLSS-2024-22.1.0082>
- Alwi, S. K. K., & Shaiq, M. (2021). Role of human resource practices and staff satisfaction on organizational performance. *Journal of Contemporary Issues in Business and Government Vol*, 27(6).
- Amin, M., Khairuzzaman Wan Ismail, W., Zaleha Abdul Rasid, S., & Daverson Andrew Selemani, R. (2014). The impact of human resource management practices on performance: Evidence from a Public University. *The TQM Journal*, 26(2), 125-142. <https://doi.org/10.1108/TQM-10-2011-0062>
- Arous, J. A., Alenzi, H., ElRabbat, S. A., & Hima, N. A. (2025). The Impact of Sustainable Practices on Organizational Reputation: The Mediating Role of Social Responsibility in Saudi Organizations. *European Journal of Sustainable Development*, 14(1), 228-228. <https://doi.org/10.14207/ejsd.2025.v14n1p228>
- Asfahani, A. M. (2023). Green HRM and servant leadership: Driving competitive advantage and environmental performance in higher education. *Sustainability*, 15(10), 7921. <https://doi.org/10.3390/su15107921>
- Asraf, A., Hakim, A., Yuana, I., & Roslan, A. H. (2024). Enhancing the Organizational Innovation: The Role of HRM Practices and Transformational Leadership in SMEs. *Deleted Journal*, 14(2), 461. [https://doi.org/10.22441/jurnal\\_mix.2024.v14i2.010](https://doi.org/10.22441/jurnal_mix.2024.v14i2.010)
- Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. *Strategy & Leadership*, 39(3), 5-15. <https://doi.org/10.1108/10878571111128766>
- Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. *Strategy & Leadership*, 39(3), 5-15. <https://doi.org/10.1108/10878571111128766>
- Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. *Strategy & Leadership*, 39(3), 5-15. <https://doi.org/10.1108/10878571111128766>
- Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. *Strategy & Leadership*, 39(3), 5-15. <https://doi.org/10.1108/10878571111128766>
- Azeem, M., & Mataruna, L. (2019). Identifying factor measuring collective leadership at academic workplaces. *International Journal of Educational Management*, 33(6), 1316-1335. <https://doi.org/10.1108/IJEM-04-2018-0131>
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological bulletin*, 88(3), 588. <https://psycnet.apa.org/doi/10.1037/0033-2909.88.3.588>
- Bindawas, A. M. (2025). Promoting Sustainable Tourism Through Employee Skills: Contextualizing Quality Education and the Human Resource Management Perspective (SDG-4). *Sustainability*, 17(2), 748. <https://doi.org/10.3390/su17020748>
- Bondarouk, T., Parry, E., & Furtmueller, E. (2017). Electronic HRM: four decades of research on adoption and consequences. *The International Journal of human resource management*, 28(1), 98-131. <https://doi.org/10.1080/09585192.2016.1245672>
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological methods & research*, 21(2), 230-258. <https://doi.org/10.1177/0049124192021002005>
- Budhwar, P., Chowdhury, S., Wood, G., Aguinis, H., Bamber, G. J., Beltran, J. R., ... & Varma, A. (2023). Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT. *Human Resource Management Journal*, 33(3), 606-659. <https://doi.org/10.1111/1748-8583.12524>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. routledge. <https://doi.org/10.4324/9780203771587>
- Crossan, M. M., & Apyadin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of management studies*, 47(6), 1154-1191. <https://doi.org/10.1111/j.1467-6486.2009.00880.x>
- Dahinine, B., Laghoug, A., Bensahel, W., Alsolami, M., & Guendouz, T. (2024). Modelling the Combined Effect of Green Leadership and Human Resource Management in Moving to Green Supply Chain Performance Enhancement in Saudi Arabia. *Sustainability*, 16(10), 3953. <https://doi.org/10.3390/su16103953>
- Damanpour, F. (2018). *Organizational innovation: A meta-analysis of effects of determinants and moderators*. In *Organizational innovation* (pp. 127-162). Routledge.
- Damanpour, F. (2018). *Organizational innovation: A meta-analysis of effects of determinants and moderators*. In *Organizational innovation* (pp. 127-162). Routledge.
- Damanpour, F. (2018). *Organizational innovation: A meta-analysis of effects of determinants and moderators*. In *Organizational innovation* (pp. 127-162). Routledge. <https://doi.org/10.4324/9780429449482>
- Davidescu, A. A., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among Romanian employees—Implications for sustainable human resource management. *Sustainability*, 12(15), 6086. <https://doi.org/10.3390/su12156086>

- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of management Journal*, 39(4), 802-835. <https://doi.org/10.5465/256713>
- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of management Journal*, 39(4), 802-835. <https://doi.org/10.5465/256713>
- Faqihi, A., & Miah, S. J. (2023). Artificial intelligence-driven talent management system: Exploring the risks and options for constructing a theoretical foundation. *Journal of Risk and Financial Management*, 16(1), 31. <https://doi.org/10.3390/jrfm16010031>
- Farouk, S., Abu Elanain, H. M., Obeidat, S. M., & Al-Nahyan, M. (2016). HRM practices and organizational performance in the UAE banking sector: The mediating role of organizational innovation. *International Journal of Productivity and Performance Management*, 65(6), 773-791. <https://doi.org/10.1108/IJPPM-01-2016-0010>
- Field, A. (2024). *Discovering statistics using IBM SPSS statistics*. Sage publications limited.
- Fritz, M. M., & Ruel, S. (2024). What does “sustainable supply chain management” really mean? A contribution to bridging the gap between research, education and practice. *The International Journal of Logistics Management*, 35(2), 332-363. <https://doi.org/10.1108/IJLM-11-2022-0457>
- Goel, P., Mehta, S., Kumar, R., & Castaño, F. (2022). Sustainable green human resource management practices in educational institutions: an interpretive structural modelling and analytic hierarchy process approach. *Sustainability*, 14(19), 12853. <https://doi.org/10.3390/su141912853>
- Hargreaves, A., & Fink, D. (2005). Sustainable leadership. *The essentials of school leadership*, 173-189. <https://www.goldenratio.id/index.php/grmilf/article/view/324>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Imtiaz, Q., & Iqbal, S. (2024). Impact of HR Practices on Eco-Friendly Behaviour in Higher Education Institutions: Mediating Mechanism of Organizational Culture & Sustainable Work Environment. *Bulletin of Multidisciplinary Studies*, 1(3), 105-113. <https://doi.org/10.48112/bms.v1i3.917>
- Islam, T., Khan, M. M., Ahmed, I., & Mahmood, K. (2021). Promoting in-role and extra-role green behavior through ethical leadership: mediating role of green HRM and moderating role of individual green values. *International Journal of Manpower*, 42(6), 1102-1123. <https://doi.org/10.1108/IJM-01-2020-0036>
- Javed, Y., & Alenezi, M. (2023). A case study on sustainable quality assurance in higher education. *Sustainability*, 15(10), 8136. <https://doi.org/10.3390/su15108136>
- Jimenez-Jimenez, D., & Sanz-Valle, R. (2008). Could HRM support organizational innovation?. *The International Journal of Human Resource Management*, 19(7), 1208-1221. <https://doi.org/10.1080/09585190802109952>
- Kaplan, R. S., & Norton, D. P. (1996). The balanced scorecard: translating strategy into action. *Language*, 11(322p), 23cm.
- Kosasih, K. (2024). The role of human resource management in sustainable development: A systematic literature review. *Economics Studies and Banking Journal (DEMAND)*, 1(2), 61-74.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610. <https://doi.org/10.1177/001316447003000308>
- Mittal, E., & Kaur, P. (2023). Green HRM, green innovation and environmental performance: The moderating role of servant leadership. *Human Systems Management*, 42(1), 27-40. <https://journals.sagepub.com/doi/full/10.3233/HSM-220066>
- Mohammed, A. A., & Fisal, M. Z. (2022). The nexus between green human resource management processes and the sustainability of educational institutions: the mediating effect of strategic excellence. *Journal of Applied Research in Higher Education*, 15(4), 947-965. <https://doi.org/10.1108/JARHE-12-2021-0443>
- Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological bulletin*, 105(3), 430. <https://psycnet.apa.org/doi/10.1037/0033-2909.105.3.430>
- Nguyen, L. Q., & Nguyen, T. N. (2024). Exploring the relationship of green HRM practices with sustainable performance: the mediating effect of green innovation. *Journal of Hospitality and Tourism Insights*. <https://doi.org/10.1108/JHTI-06-2024-0610>
- Nunnally, J. C., & Bernstein, I. H. (1978). *Psychometric theory mcgraw-hill new york*. The role of university in the development of entrepreneurial vocations: a Spanish study, 387-405.
- Nurimansjah, R. A. (2023). Dynamics of Human Resource Management: Integrating Technology, Sustainability, and Adaptability in the Modern Organizational Landscape. *Golden Ratio of Mapping Idea and Literature Format*, 3(2), 120-139.
- Pagán-Castaño, E., Sánchez-García, J., Garrigos-Simon, F. J., & Guijarro-García, M. (2021). The influence of management on teacher well-being and the development of sustainable schools. *Sustainability*, 13(5), 2909. <https://doi.org/10.3390/su13052909>
- Qahl, M., & Sohaib, O. (2023). Key factors for a creative environment in Saudi Arabian higher education institutions. *Journal of Information Technology Education: Innovations in Practice*. <http://hdl.handle.net/10453/177243>
- Rasool, S. F., Samma, M., Wang, M., Zhao, Y., & Zhang, Y. (2019). How human resource management practices translate into sustainable organizational performance: the mediating role of product, process and knowledge innovation. *Psychology research and behavior management*, 1009-1025. <https://www.tandfonline.com/doi/full/10.2147/PRBM.S204662#d1e215>

- Rawis, J. A., Tambingon, H. N., & Lengkong, J. S. (2024). The Role Of Leadership In Improving The Engagement And Productivity Of Human Resources In Educational Institutions. *Eduvest-Journal of Universal Studies*, 4(10), 9654-9660. <https://doi.org/10.59188/eduvest.v4i10.38827>
- Roscoe, S., Subramanian, N., Jabbour, C. J., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Business Strategy and the Environment*, 28(5), 737-749. <https://doi.org/10.1002/bse.2277>
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Shahrulnizam, N. A. A., Hassan, M. A., Mohamad, N. A., Azizie, M., Haziqah, A., & Rashid, S. R. A. W. Roles of Ghrm in Sustainable Organization Practices: A Systematic Literature Review. <http://dx.doi.org/10.6007/IJARBS/v14-i10/23110>
- Sharif, S., Malik, S. A., Arooj, N., & Albadry, O. M. (2024). Human resource management (HRM) practices and organizational commitment in higher educational institution (HEI): a mediating role for work engagement. *Global Knowledge, Memory and Communication*. <https://doi.org/10.1108/GKMC-11-2023-0456>
- Sidharth, S., Matthew, R., & Ghosh, E. (2016). A Study on the Impact of Human Resource Management on the Performance at an Educational Institution: A Study amongst the Workforce. *Indira Management Review*, 10(2), 83-94.
- Tan, C. L., & Nasurdin, A. M. (2011). Human resource management practices and organizational innovation: assessing the mediating role of knowledge management effectiveness. *Electronic journal of knowledge management*, 9(2), pp155-167. <https://academic-publishing.org/index.php/ejkm/article/view/929>
- Verheijen-Tiemstra, R., Ros, A., Vermeulen, M., & Poell, R. F. (2024). Barriers to collaboration between school teachers and child care workers: implications for HRM and school leadership. *International journal of educational management*, 38(1), 96-114. <https://doi.org/10.1108/IJEM-04-2023-0169>
- Vesudevan, M., Abdullah, Z., Vasudevan, A., & Qin, P. (2025). Integrating sustainable leadership in Malaysian higher education: Effective strategies for implementation and impact. *Multidisciplinary Reviews*, 8(4), 2025115-2025115. <https://doi.org/10.31893/multirev.2025115>
- Zahrani, A. A. (2024). The influence of green human resource management on university sustainability in higher education: the role of mediating environmental performance and green commitment. *PeerJ*, 12, e17966. <https://doi.org/10.7717/peerj.17966>