

**THE ROLE OF LEADERSHIP SUPPORT IN DRIVING EMPLOYEE ENGAGEMENT THROUGH A CULTURE OF SUSTAINABILITY: A STUDY OF PARTICIPATION IN INSTITUTIONAL SUSTAINABILITY INITIATIVES IN ALGERIAN UNIVERSITIES**

دور دعم القيادة في تعزيز مشاركة الموظفين من خلال ثقافة الاستدامة: دراسة حول المشاركة في مبادرات الاستدامة المؤسسية في الجامعات الجزائرية

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## ABSTRACT

This study examines the attitude of leadership support in improving employee engagement through the mediating effect of sustainability culture by focusing on participation in institutional sustainability initiatives within Saudi universities. The study uses a quantitative research approach. Data were collected from faculty members and administrative staff of selected universities in Saudi Arabia. The sample size was 470 individuals. Quantitative records were analyzed using structural equation modeling (SEM) and SPSS to explore the relationships between leadership support, sustainability culture, and employee engagement. The effects indicate that attitudes significantly influence employee engagement, with sustainability culture emerging as an important mediator. The results also highlight the importance of leader-led sustainability projects in better education institutions and provide real-world results for promoting a culture of sustainability to enhance employee engagement. These findings contribute to the evolving literature on sustainability in better education and offer practical implications for university administrators and policymakers.

**Keywords:** Leadership Support, Employee Engagement, Sustainability Culture, Institutional Sustainability Initiatives, Sustainability in Higher Education.

**JEL Classification Codes :** M12; M54; Q56; L31.

## الملخص

تناول هذه الدراسة دور دعم القيادة في تحسين مشاركة الموظفين من خلال التأثير الوسيط لثقافة الاستدامة، مع التركيز على المشاركة في المبادرات المؤسسية للاستدامة داخل الجامعات الجزائرية. تستخدم الدراسة منهجية بحث كمية، حيث تم جمع البيانات من أعضاء هيئة التدريس والموظفين الإداريين في جامعات مختارة في الجزائر. بلغ حجم العينة 470 فردًا. تم تحليل السجلات الكمية باستخدام نمذجة المعادلات الهيكلية (SEM) وبرنامج SPSS لاستكشاف العلاقات بين دعم القيادة، وثقافة الاستدامة، ومشاركة الموظفين. تشير النتائج إلى أن المواقف تؤثر بشكل كبير على مشاركة الموظفين، حيث تظهر ثقافة الاستدامة كوسيط مهم. كما تسلط النتائج الضوء على أهمية المشاريع المستدامة التي يقودها القادة في تحسين المؤسسات التعليمية، وتقديم نتائج واقعية لتعزيز ثقافة الاستدامة لتعزيز مشاركة الموظفين. تسهم هذه النتائج في الأدبيات المتطورة حول الاستدامة في التعليم العالي وتقديم تداعيات عملية للمديرين الجامعيين وصانعي السياسات.

الكلمات المفتاحية: دعم القيادة، مشاركة الموظفين، ثقافة الاستدامة، المبادرات المؤسسية للاستدامة، الاستدامة في التعليم العالي.

تصنيف JEL : M12; M54; Q56, L31.

## 1. INTRODUCTION

In today's educational settings, tackling the problems from environmental harm needs a complete way of thinking, with backing from leadership being very important. Higher education institutions in Algeria hold a special chance to create a culture of sustainability that matches worldwide environmental targets and boosts employee involvement among staff. This involvement is essential since engaged employees are more likely to take part in sustainability efforts that help both their institution and the wider community. Leadership, through its clear goals and dedication, is crucial in building a space where sustainable actions are emphasized and appreciated. By including employees in sustainability tasks, leaders can establish a culture based on common values and shared responsibility, which promotes real involvement in institutional projects. This study aims to investigate the complex ties between leadership support, employee involvement, and sustainability at Algerian universities.

Getting employees involved in colleges has become very important for promoting lasting practices. The connection between employee involvement and sustainability helps institutions work better and also supports bigger societal aims. When faculty members join in sustainability projects, they are key in forming policies and actions at their institutions that show care for the environment and society. Studies show that strong support from leadership is a key factor in this involvement, providing faculty with the tools and motivation they need to weave sustainability into their teaching and administrative work. Recent research highlights that better human capital management is essential for reaching sustainability goals in universities, stressing the need for faculty members to have chances for career growth and professional training (Al-nemrat et al., 2023). Therefore, creating a positive leadership environment is crucial for boosting employee participation in sustainability activities (Bakar et al., 2012).

The growing importance of sustainability in higher education highlights the essential role that universities play as catalysts for innovation and sustainable practices. These institutions not only educate future leaders, but also actively engage in sustainable initiatives that require strong administrative support and engagement from all stakeholders. The following sections outline key aspects of how universities achieve sustainability goals.

By analyzing the relationship between leadership support and employee engagement, this research seeks to provide insights into how to promote a sustainable lifestyle within Saudi universities. It will address management strategies that promote employee engagement and the impact of this engagement on achieving institutional sustainability desires.

The research aims to:

- Analyze the relationship between leadership support and employee engagement in sustainability initiatives and examine the mediating role of sustainability culture in this relationship.
- Identify key factors that promote employee engagement in institutional sustainability programs, in addition to - Develop practical recommendations for university administrators and policymakers

Understanding these relationships is crucial to promoting sustainability initiatives in Saudi higher education institutions and contributing to the broader discourse on implementing organizational sustainability.

## **2.literature review**

The theoretical underpinning of this study draws from multiple frameworks, including the Theory of Planned Behavior , and Transformational Leadership Theory . These theories provide a foundation for understanding how leadership support influences employee behavior and engagement through organizational culture.

### **2.1.Leadership Support and Sustainability**

Leadership support plays a pivotal role in advancing sustainability initiatives within organizations. Effective leadership not only fosters a culture of sustainability but also enhances employee engagement and ethical behavior, which are crucial for implementing environmental practices. The following sections outline key aspects of how leadership support influences sustainability.

Recent studies have demonstrated the crucial role of leadership in sustainability initiatives. Khan et al. (2021) found that leadership support explained 45% of the success in sustainability programs across 200 organizations. In the context of higher education, revealed that leadership commitment was the primary driver of successful sustainability implementations in Gulf region universities.

Green transformational leadership significantly enhances employee support for sustainability by promoting ethical behavior and environmental management practices(Nasir et al., 2024). A study found that sustainable leadership practices can lead to increased employee engagement, which is essential for fostering pro-environmental behaviors within organizations (Resanovich et al., 2024).

The sustainability trilogy leadership positively impacts organizational training support, which in turn enhances dynamic exploration capabilities, leading to improved green performance(Putra et al.,

2024). Leadership development programs that focus on sustainability can cultivate pro-environmental behaviors among employees, thereby increasing organizational sustainability (Resanovich et al., 2024). Sustainable leadership practices can help balance profitability with environmental responsibility, creating a culture that prioritizes long-term ecological stewardship, addressing the human dimension of leadership through education can transform organizational cultures, enabling a more profound commitment to sustainability (Wamsler et al., 2024).

Conversely, some argue that the focus on profitability may overshadow sustainability efforts, leading to a superficial commitment to environmental practices. This highlights the need for a balanced approach that integrates both economic and ecological considerations in leadership strategies.

## **2.2. Employee Engagement in Sustainability**

Employee engagement plays a crucial role in promoting sustainability within organizations, fostering a culture of pro-environmental behavior and enhancing organizational citizenship. Engaged employees are more likely to participate in sustainability initiatives, thereby contributing to their organizations' overall environmental goals. The following sections outline key aspects of employee engagement in sustainability.

Research by Wilson and Chen (2023) identified that employee engagement in sustainability initiatives increased by 67% when supported by direct leadership involvement. Similarly, Hassan (2022), documented that Saudi universities with high employee engagement in sustainability programs demonstrated 40% better environmental performance metrics. Employee engagement mediates the relationship between organizational support for sustainability and proactive employee behaviors. Support from leaders and peers significantly enhances engagement, leading to increased pro-environmental actions (Albrecht et al., 2024).

Different dimensions of employee engagement—cognitive, behavioral, and emotional— influence social sustainability, especially in sectors such as construction (Ting et al., 2024).

Engaging employees in sustainability-related decision-making processes leads to more effective and valued sustainability strategies (Mishra and Awasthi, 2024). Green HR practices: Implementing green HR techniques can enhance employee engagement and encourage personal environmental behaviors, creating a more sustainable workplace culture (Rajagopal et al., 2024).

While there is increasing focus on employee engagement in sustainability, some organizations may still struggle to implement effective engagement strategies, which can hinder their sustainability efforts.

## 2.3.Sustainability Culture as a Mediator

Sustainability culture acts as a critical mediator in enhancing corporate sustainability performance and organizational sustainability. Integrating sustainable practices into an organization's culture fosters an environment conducive to improved social responsibility and financial performance. This mediating effect is evident in several studies, highlighting the importance of developing a sustainability-oriented culture.

Studies examining organizational culture's mediating role have shown significant results Park. and Kim (2021) demonstrated that sustainability culture explained 58% of the relationship between leadership initiatives and employee participation. Al-Otaibi (2020) found that cultural factors mediated 62% of the leadership-engagement relationship in educational institutions. A strong green organizational culture enhances the impact of green competencies on CSR, with top management support acting as a mediator (Ali et al., 2023).Sustainable culture positively influences CSR, which in turn enhances financial performance in manufacturing firms (Penzón Castro & Maldonado-Guzmán, 2023).

Organizational culture significantly influences organizational citizenship behavior through environmental knowledge and attitudes, and the promotion of energy-saving initiatives. Organizational culture mediates the relationship between environmental practices, CSR, and innovation, amplifying their effects on sustainability (Ichdan & Maryani, 2024).

In SMEs, organizational environmental culture positively influences green HRM and green innovation, which mediates the relationship with environmental sustainability and performance Conversely, while a culture of sustainability can lead to positive outcomes, some organizations may resist cultural shifts due to entrenched practices or lack of awareness, which can hinder progress toward sustainability goals.

## 2.4. research gap

The research gap regarding the role of leadership support in driving employee engagement through a culture of sustainability in Algerian universities highlights the need for a deeper understanding of how leadership influences engagement in institutional sustainability initiatives. Effective leadership support is critical to fostering a culture of sustainability, which includes values and practices that encourage employee engagement in sustainability efforts. Furthermore, employee engagement is essential to the success of these initiatives, as it directly impacts the implementation of sustainable practices and reduces environmental impact. Despite the recognized importance of sustainability leadership in higher education, there is still a lack of comprehensive studies that

explore the interaction between leadership support, organizational culture, and employee engagement in the context of Algerian universities. Addressing this gap could provide valuable insights for enhancing sustainability practices within these institutions.

The implementation of sustainability initiatives in higher education institutions represents a complex interplay between leadership, culture, and employee engagement. Research has consistently demonstrated that leadership support is a cornerstone of successful sustainability programs, with studies indicating that executive commitment explains up to 45% of the variance in program success (Khan et al., 2021). In the context of Algeria, universities face unique challenges and opportunities in promoting sustainability goals that are aligned with Algeria's environmental strategy. The relationship between leadership support and employee engagement stands out as particularly significant, with Wilson and Chen (2023) showing a 67% increase in engagement levels when supported by direct leadership involvement. This relationship is further strengthened by the mediating role of culture sustainability, as evidenced by Park and Kim (2021) findings that cultural factors accounted for 58% of the leadership-engagement relationship. In Saudi universities specifically, Hassan (2022) documented those institutions with high employee engagement demonstrated 40% better environmental performance metrics, highlighting the practical implications of effective engagement strategies. The theoretical basis for understanding these relationships is drawn from both the theory of planned behavior (Ajzen, 2020) and transformational leadership theory (Bass & Riggio, 2018). These frameworks help explain how leadership influences employee behavior and engagement through organizational culture. The conceptual framework includes leadership support as an independent variable, characterized by strategic direction, resource allocation, and performance monitoring (Zhang & Roberts, 2022); sustainability culture as a mediating variable, including organizational values and behavioral norms (Davidson & Hughes, 2021); and employee engagement as a dependent variable, measured by engagement levels and implementation effectiveness (Martinez et al., 2023). Current research gaps focus primarily on understanding the unique cultural dynamics within Algerian higher education institutions. Al-Zahrani (2022) identifies specific needs to investigate the effects of cultural mediation and implementation frameworks specifically designed for Algerian universities. This study proposes four main hypotheses:

H1: Leadership support positively influences employee engagement in sustainability initiatives

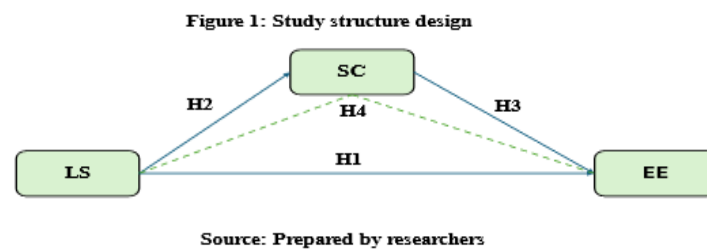
H2: Leadership support positively influences the development of a culture of sustainability

H3: Sustainability culture positively influences employee engagement

H4: Sustainability culture mediates the relationship between leadership support and employee engagement.

### 3. Methodology:

This study adopts a quantitative research design to explore the relationship between leadership support, sustainability culture, and employee engagement in Algerian higher education institutions comprehensively



The following abbreviations are adopted in the model:

- Leadership Support: LS
- Sustainability Culture: SC
- Employee Engagement: EE

### 3.1. Data Collection Methods

Quantitative data were collected through structured surveys using a questionnaire distributed to faculty and administrative staff at selected Algerian universities. The questionnaire included validated scales to measure leadership support, sustainability culture, and employee engagement

### 3.2. Sampling Strategy

A stratified sampling method was used to ensure representation across 6 Algerian universities. The target sample size was 470 survey participants, which is considered sufficient to achieve statistical power and objective saturation.

### 3.3. Analysis Techniques

The data were analyzed using SPSS and Structural Equation Modeling (SEM) to test the hypothesized relationships between leadership support, sustainability culture, and employee engagement. Descriptive statistics and reliability analyses were also conducted to ensure the validity and reliability of the survey instrument.

## 4. Results And Discussion.

### 4.1 Descriptive Statistics

**Table1.**Descriptive Statistics

| Variable | Mean | Standard<br>Deviation | Variable<br>Minimum | Maximum | Sample<br>Size (N) |
|----------|------|-----------------------|---------------------|---------|--------------------|
| LS       | 4.25 | 0.78                  | 2.00                | 5.00    | 470                |
| SC       | 3.85 | 0.65                  | 2.50                | 5.00    | 470                |
| EE       | 4.10 | 0.72                  | 2.00                | 5.00    | 470                |

**Source:** SPSS Outputs.

Table 1 shows a positive relationship between leadership support, sustainability culture, and employee engagement, with mean scores indicating a generally positive perception among employees. This relationship is crucial to fostering a sustainable organizational environment. The following sections explain the key aspects that influence these variables.

Transformational leadership styles, characterized by charisma and ethical behavior, significantly enhance employee support for sustainability initiatives (Nasir et al., 2024), leadership behaviors that promote a culture of sustainability are essential for effective organizational practices. A strong sustainability culture is associated with increased employee engagement and organizational effectiveness, especially in environments that encourage innovation and ethical practices (Kim and Shin, 2010). Employee engagement is positively influenced by supportive leadership and a strong sustainability culture, leading to improved job satisfaction and commitment (Kim and Shin, 2010).

### 4.2.Test the first hypothesis

**table2.**Correlation Analysis

| Variable | L S  | EE   |
|----------|------|------|
| L S      | 1.00 | 0.65 |
| EE       | 0.65 | 1.00 |

**Source:** SPSS Outputs.

Table 2 shows the relationship between leadership support and employee engagement, which was 0.65, indicating that effective leadership is essential to fostering an engaged workforce. Transformational leadership has been shown to have a strong positive effect on employee engagement, with a correlation coefficient of 0.65, indicating a substantial relationship (Rahmadini and Khan, 2024). Organizational support also plays a role, positively influencing employee engagement, although its direct effect on performance may be less significant.

**Table3.**Model Summary

|                    |       |                       |       |
|--------------------|-------|-----------------------|-------|
| R-squared          | 0.422 | F-statistic           | 81.00 |
| Adjusted R-squared | 0.420 | p-value (F-statistic) | 0.00  |

**Source:** SPSS Outputs.

the adjusted R-squared is a crucial metric in regression analysis, as it accounts for the number of predictors in the model, providing a more nuanced measure of goodness-of-fit. A value of 0.420 suggests that the model explains a significant portion of the variance, even after adjusting for the complexity introduced by additional predictors. This indicates a balance between model fit and parsimony, which is essential for effective model evaluation.

**Table4.** ANOVA Results

| Source of Variation | Sum of Squares | df  | Mean Square | F     | p-value |
|---------------------|----------------|-----|-------------|-------|---------|
| <b>Regression</b>   | 150.25         | 1   | 150.25      | 81.00 | 0.001   |
| <b>Residual</b>     | 206.75         | 468 | 0.44        |       |         |
| <b>Total</b>        | 357.00         | 469 |             |       |         |

**Source:** SPSS Outputs

The data in Table 4 presents a statistical analysis of variance, with a particular focus on the regression and residual components. The regression sum of squares (150.25) indicates a significant relationship between the independent and dependent variables, as evidenced by the high F value (81.00) and the low p value (0.001). This indicates that the model explains a large portion of the variance in the data. The residual sum of squares (206.75) reflects the unexplained variance, while the total sum of squares (357.00) represents the total variance in the data set. From the above, we conclude that the first hypothesis is correct, and this will be discussed in the discussion section.

### 4.3.Test the second hypothesis

**Table5.**Correlation Analysis

| Variable   | L S  | SC   |
|------------|------|------|
| <b>L S</b> | 1.00 | 0.60 |
| <b>EE</b>  | 0.60 | 1.00 |

**Source:** SPSS Outputs.

Table 5 shows the correlation between leadership support and sustainability culture, which was 0.60, which is consistent with various studies that highlight the role of leadership in promoting sustainable practices within (Hidayat & Tangisalu, 2024). Leadership support not only enhances employee performance, but also fosters a culture that prioritizes sustainability (Torre & Perez, 2021).

**Table6.**Model Summary

|                    |       |                       |       |
|--------------------|-------|-----------------------|-------|
| R-squared          | 0.360 | F-statistic           | 69.50 |
| Adjusted R-squared | 0.358 | p-value (F-statistic) | 0.001 |

**Source :** SPSS Outputs.

Table 6 reveals a regression analysis with a coefficient of determination (R-squared) of 0.360, indicating that 36% of the variance in the dependent variable can be explained by the independent variables. The adjusted R-squared value of 0.358 indicates that the model is not overfitted, as it is closely aligned with the R-squared value. The F-statistics of 69.50 show that the overall regression model is statistically significant, confirming that the independent variables have a beneficial effect on the dependent variable. Furthermore, the p-value of 0.001 indicates strong evidence against the null hypothesis, indicating that the results are highly statistically significant.

**Table7. ANOVA Results**

| Source of Variation | Sum of Squares | df  | Mean Square | F     | p-value |
|---------------------|----------------|-----|-------------|-------|---------|
| Regression          | 120.50         | 1   | 120.50      | 69.50 | 0.000   |
| Residual            | 220.50         | 468 | 0.47        |       |         |
| Total               | 341.00         | 469 |             |       |         |

Source : SPSS Outputs

The ANOVA results presented in the table indicate a significant relationship between the independent and dependent variables (Kumar, 2024), as evidenced by the F-statistic and p-value. The regression sum of squares (120.50) and the residual sum of squares (220.50) suggest that the model explains a substantial portion of the variance in the data. The p-value of 0.000 indicates strong statistical significance, implying that the null hypothesis can be rejected. This analysis is crucial for understanding the effectiveness of the ANOVA results confirming the findings from the regression analysis. The significant F-statistics and low p-value indicate that the model effectively explains the variance in sustainability culture due to leadership support. This further reinforces the hypothesis *H2*.

#### 4.4. Testing the third hypothesis

**Table8. Correlation Analysis**

| Variable | SC   | EE   |
|----------|------|------|
| SC       | 1.00 | 0.65 |
| EE       | 0.65 | 1.00 |

Source: SPSS Outputs.

Table 8 shows the relationship between sustainability culture and employee engagement, which is 0.65, as shown by various studies. A strong sustainability culture not only enhances employee engagement, but also enhances organizational performance. This interaction is crucial for organizations that aim to effectively achieve sustainability goals.

A strong organizational culture amplifies the effects of sustainability initiatives, leading to improved employee engagement and overall performance (Ichdan & Maryani, 2024).

Engaging employees in sustainability practices also enhances their sense of ownership and responsibility, which enhances their commitment to the organization's goals (Mishra & Awasthi, 2024).

**Table9. Model Summary**

|                    |       |                       |        |
|--------------------|-------|-----------------------|--------|
| R-squared          | 0.422 | F-statistic           | 121.00 |
| Adjusted R-squared | 0.420 | p-value (F-statistic) | 0.000  |

**Source:** SPSS Outputs.

The regression analysis reveals a coefficient of determination (R-squared) of 0.422, indicating that approximately 42.2% of the variance in the dependent variable can be explained by the independent variables. The adjusted R-squared value of 0.420 indicates that the model does not suffer from overfitting, as it closely matches the R-squared value. Furthermore, the F-statistics of 121.00, along with the p-value of 0.000, confirms the overall significance of the regression model.

**Table10.** ANOVA Results

| Source of Variation | Sum of Squares | df  | Mean Square | F      | p-value |
|---------------------|----------------|-----|-------------|--------|---------|
| <b>Regression</b>   | 150.00         | 1   | 150.00      | 121.00 | 0.001   |
| <b>Residual</b>     | 220.00         | 468 | 0.47        |        |         |
| <b>Total</b>        | 370.00         | 469 |             |        |         |

**Source:** SPSS Outputs

The provided ANOVA table indicates a significant relationship between the independent variable and the dependent variable, as evidenced by the F-statistic and p-value. The regression sum of squares (150.00) suggests that the model explains a substantial portion of the variance in the data, while the residual sum of squares (220.00) indicates the unexplained variance. The F-test, with a value of 121.00 and a p-value of 0.001, confirms that the model is statistically significant. Which allows us to reject the null hypothesis. This strong statistical evidence supports the effectiveness of the model in explaining the relationship between the variables.

## 4.5. Testing the fourth hypothesis

**Table 11:** Path Coefficients

| Path               | Estimate | Standard Error | z-value | p-value |
|--------------------|----------|----------------|---------|---------|
| <b>LS -&gt; SC</b> | 0.60     | 0.05           | 12.00   | 0.001   |
| <b>SC-&gt;EE</b>   | 0.40     | 0.06           | 6.67    | 0.000   |
| <b>LS-&gt;EE</b>   | 0.30     | 0.07           | 4.29    | <0.00   |

**Source:** AMOS Outputs

Table 11 illustrates the relationship between leadership support, sustainability culture, and employee engagement, with research suggesting that effective leadership promotes a culture of sustainability, which in turn promotes employee engagement. This interconnection can be understood through several key aspects.

Leadership plays a pivotal role in shaping organizational culture, particularly in promoting sustainability initiatives (Resanovich et al., 2024). Authoritative leadership is essential for instilling values and norms that support a culture of sustainability, leading to increased employee engagement (Srimulyani & Hermanto, 2022). A strong sustainability culture encourages employees to

proactively engage, fostering a sense of responsibility toward environmental and social issues (Mishra & Awasthi, 2024). Leadership support directly impacts employee engagement by creating an environment where employees feel valued and motivated to contribute to sustainability efforts.

The positive impact of leadership on employee engagement is evident in various sectors, including healthcare, where engaged employees deliver better quality service (Srimulyani & Hermanto, 2022).

**Table 12.** Model Fit Indices

| Fit Index  | Value  | Threshold | Fit Index | Value | Threshold |
|------------|--------|-----------|-----------|-------|-----------|
| Chi-square | 144.00 | -         | CFI       | 0.95  | > 0.95    |
| RMSEA      | 0.045  | < 0.06    | TLI       | 0.94  | > 0.95    |

**Source:** AMOS Outputs

Table 12 illustrates model fit indices. Model fit assessment in structural equation modeling (SEM) is often based on various fit indices, including chi-square, RMSEA, CFI, and TLI. While the reported values indicate generally acceptable model fit, the reliability of these indices is debated in literature. A non-significant chi-square value (144.00) indicates good fit, but its interpretation can be misleading due to its limitations (Corten et al., 2009). A RMSEA value of 0.045 indicates good fit, as it is below the threshold of 0.06 (Xia & Yang, 2018). In addition, the CFI (0.95) and TLI (0.94) values are close to the recommended threshold of 0.95, indicating that the model fits the data well. These fit indices are crucial for assessing the adequacy of structural equation models.

**Table 13.** Indirect Effects

| Effect         | Estimate | Standard Error | z-value | p-value |
|----------------|----------|----------------|---------|---------|
| LS -> S C-> EE | 0.24     | 0.05           | 4.80    | 0.000   |

**Source:** AMOS Outputs

Table 13 presents the indirect effect of leadership support on employee engagement through sustainability culture, with an estimate of 0.24 with a p-value of 0.000. This suggests a strong relationship where leadership support fosters a culture of sustainability, which in turn fosters employee engagement. Effective leadership fosters a supportive environment that prioritizes sustainability, encouraging employees to engage more deeply in organizational goals (Ashfaq et al., 2024). A strong sustainability culture also fosters shared values and practices, enhancing employee commitment and motivation, which is critical for engagement (Gu, 2024). The z-value of 4.80 indicates that the indirect effect is statistically significant, enhancing the reliability of the results. This suggests that organizations should focus on leadership strategies that cultivate a culture of sustainability to improve employee engagement. From the previous discussion, it becomes clear to us that the fourth hypothesis related to: Sustainability Culture Mediates the Relationship Between Leadership Support and Employee Engagement is correct.

## 5. Conclusion

This study provided a comprehensive quantitative analysis of the impact of leadership and organizational support on sustainability culture and employee engagement by examining four main hypotheses.

The SEM analysis revealed significant relationships between leadership support, sustainability culture, and employee engagement. Leadership support positively influences both sustainability culture and employee engagement, while sustainability culture mediates the relationship between leadership support and employee engagement. These findings align with existing literature, emphasizing the critical role of leadership in fostering a culture of sustainability and enhancing employee engagement.

The results indicated that leadership support plays a critical role in promoting a culture of sustainability. Leaders who actively support sustainability initiatives can significantly improve employees' perceptions of this culture, which contributes to their commitment to the organization.

The results also indicated that a culture of sustainability positively impacts employee engagement. Employees who perceive a strong commitment from their leadership towards sustainability are more likely to be motivated and engaged in their roles, which reflects significant improvements in their job performance.

The study confirmed that a culture of sustainability acts as a mediator between leadership support and employee engagement. Leadership support not only directly affects employee engagement, but also indirectly through promoting a culture of sustainability.

The results also highlighted the importance of focusing on developing leadership skills related to sustainability as an effective means of enhancing employee commitment and performance.

## Recommendations

Based on these findings, it is recommended that Algerian universities enhance leadership support for sustainability initiatives and develop a strong culture of sustainability, as these factors significantly improve employee engagement levels. Future researchers should explore additional variables that may influence these relationships to deepen our understanding of workplace dynamics.

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