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# Developing Sustainable Leadership Practices in Saudi Arabian Universities: A Comparative Study between Public and National Universities

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**Abstract.** This study examines sustainable leadership practices in Saudi Arabian universities, comparing public and national universities. A mixed-methods approach was employed, utilizing a questionnaire administered to 235 academic leaders (160 from public universities and 75 from national universities) and semi-structured interviews with 8 university vice presidents and deputies. The research identified key sustainable leadership practices and assessed their prevalence in both types of universities. Findings revealed that overall sustainable leadership practices were at a medium level in public universities (M=3.61, SD=0.57) and a high level in national universities (M=3.80, SD=0.50). Environmental contribution emerged as the top responsible factor in both sectors, while innovation and creativity stood as the least responsible factor. Significant differences were found between public and national universities in most dimensions, favoring national universities while there was no significant difference in social responsibility and environmental contribution made by both categories of universities. The study found out the following strategies that can build up, the practice of sustainable leadership, both sectors recognized the importance of training programs and performance evaluation standards. These findings provide important knowledge about sustainable leadership in higher education settings in the Saudi Arabian context and recommendations that can be useful to future research and practice for policymakers and university administrators to better develop sustainable leadership.

**Keywords:** Higher Education, National Universities, Public Universities, Saudi Arabia, Sustainable Leadership.

## 1. INTRODUCTION

Sustainable development remains one of the important concepts contributing to environmental conservation for future generations (Hariram et al., 2023; Kopnina, 2020; Yadav et al., 2022). It involves the capacity of organizations and societies in protecting, sustaining, creating and enhancing the durability of environmental assets for future generations (Hummels & Argyrou, 2021; Kaletnik & Lutkovska, 2020). This approach has a strategic view whereby it focuses on long-term goals to get outcomes that are both economic and environmental effects hence being environmentally profitable.

Sustainability has recently featured major prominence as an aspect of performance development following a change that has affected all facets of the education system (Cash et al., 2003; Clark, 2003; Farooq, 2019; Giesenbauer & Müller-Christ, 2020; Lozano et al., 2013; Price et al., 2021). According to Simanskiene et al. (2016) sustainability has emerged into an essential phenomenon because of the conditions under which it emerged, and the problems of which we can only now try to find new intellectual solutions. Development of sustainable leadership can be seen as a response to the tendencies of the present days that foster sustainability in dynamic and uncertain conditions (Bendell et al., 2017; Hargreaves & Fink, 2012; Sotarauta et al., 2012).

Sustainable leadership is a novel approach of administration that can replace the ineffective traditional kind of leadership which does not meet the conditions of the age and the contingencies of the twenty-first century (Di Fabio & Peiró, 2018; Okpara & Idowu, 2013). Sustainable leadership can be defined as an administrative style that seeks to achieve a balance of attention on individuals, material outcomes and the environment during a firm's operations (Hargreaves & Fink, 2004). Cooperation and encouraging participation in decision-making process provide an idea to invest in human capital and maintain harmony among its members with a sense of value commitment regarding to its knowledge (Kantabutra & Saratun, 2013; Suriyankietkaew et al., 2022).

The sustainable perspective in leadership emphasizes that organizations are part of the world and should be formed based on sustainability-related values (Baumgartner & Rauter, 2017; Egri & Herman, 2000; Linnenluecke & Griffiths, 2010). They should contribute to building these values with social, material, ethical, and financial returns. Sustainable leadership promotes a sustainable, widespread, and continuous leadership style among individuals, preserving human and material resources (Chams & García-Blandón, 2019).

Sustainable leadership takes into account the complex interconnections between society with its individuals and groups, the natural environment, and global requirements (Iqbal et al., 2020). The organization focuses on well-being, social values, and long-term strategic success by preserving the ecosystem (Millennium ecosystem assessment, 2005; Nemt-allah, M., & Darwesh, 2024). In educational institutions, the role of sustainable leadership is increasing, as the success of these organizations depends on the level of institutional performance based on sustainability (Aleixo et al., 2018; Lewandowska et al., 2023). This consequently leads to the attainment of their goals in the right manner and with the quality and sustainability of their outputs and results.

As agents of change and education, universities are taking up the mantle of sustainable leadership for the next generation leaders and decisions makers in society (Elbably & Nemt-allah, 2024). According to Findler et al.

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(2019), to maintain the challenging equation of sustainability, the universities need to aim at sustainability, embrace it, and build teaching, research, and community serve towards it. Universities are capable of developing leaders who can manage and seize on sustainability and even taking the culture of sustainability to society (Corcoran et al., 2017).

In relation to Saudi Arabia, there has been rising attention to realise sustainability in different domains based on the domains of study, including in university education (Alahmari et al., 2019; Radwan & Khalil, 2021; Singh et al., 2022). This is consistent with Saudi Arabia's Vision 2030 which is supportive of sustainable leadership principles; and has instituted a number of policies and programs that would shape the operation of mechanisms and programs that would foster the enhancement of the educational system, assimilation of utilizing the best practices that would advance leadership and management, and the sustainable human capital development. All these endeavours are aimed at increasing the level of task completion gradually, particularly among leaders of universities and improving and enriching professional practice by providing for the training and professional development of leaders.

Sustainable leadership is of vital importance in higher education institutions. This facilitates the education organizations to carry out their mission and goal amid struggles and hurdles, move forward towards enhancing commitment and bring a better working environment to get them right (Hargreaves & Fink, 2004). Furthermore, sustainable leadership in higher education can leverage university practices, reorient them, manage their duty, reverting stakeholder support towards them, generating a healthy impact on performance indicators, and strengthening institutional and community resilience (Aung & Hallinger, 2022).

Nevertheless, the importance of sustainable leadership in universities has been recognized increasingly, but no less is the challenge in its implementation and development. Universities do not have the capabilities to fully practice their role in sustainable development and their roles are limited to some research and training opportunities (Kohl et al., 2022) Furthermore, Bosanquet et al. (2008) stress that universities' capacities to ensure a quality of education and teaching in the future are undermined by paying no attention to sustainable leadership.

To fill these gaps, this paper focuses on the comparison between public and national universities, to examine sustainable leadership practices in Saudi Arabian universities. This research aims at identifying the most important sustainable leadership practices, measuring the availability of these practices, and proposing ways to develop them so that sustainable leadership in higher education could be advanced within the Saudi Arabian context.

### 1.1. Problem Statement

In the light of the growing challenges of long-term sustainability and social responsibility, due to the increasing challenges of long-term sustainability and social responsibility.However, although there is increasing recognition of the importance of sustainable leadership practices in higher education institutions, particularly in Saudi Arabian universities, actual implementation and articulated development of such practices present significant challenges.

The problem of urgency and the importance of this research problem have several factors. Firstly, in higher education, there is a worldwide trend towards sustainability, such that more universities are starting to realize that sustainability is important and using it as a starting point for all activities (Weiss & Barth, 2019). Nevertheless, Kohl et al. (2022) observed a gap between recognition and implementation, which, they claim, has not been exploited at an adequate level on the potential of universities for sustainability.

Secondly, although related to strengthening investment in universities for sustainability (Leal Filho et al., 2020), there are also incontestable obstacles to overcome. However, as universities are unequivocal places, sustainable leadership needs to play an important role (Aung & Hallinger, 2022), but the characteristics of such leadership in organizations depend on the affiliation and orientations of the leaders (Armani et al., 2020) that might differ between public and national institutions.

The lack of attention of universities to sustainable leadership was found to weaken their ability to ensure higher education and teaching in the future (Bosanquet et al., 2008). Although sustainable leadership has the potential to influence universities in the right direction towards sustainability, research relating to sustainable leadership in universities is limited and growing slowly (Aung & Hallinger, 2022). Additionally, there is a lack of comparative work that examines the sustainability practices of post-secondary institutions, especially as most of the research circulates around institutional processes that do not extend beyond themselves (Vaughter et al., 2013).

While there has been attention on making the university education in terms of sustainability compliant with Vision 2030 in Saudi Arabia (Alshuwaikhat & Mohammed, 2017; Mohiuddin et al., 2023), there is less research on how the sustainable leadership practices are executed in public and national universities all together in Saudi Arabia. From being involved in academic and leadership work, the researcher has noticed the difficulty in university administration to act in accordance with requirements of sustainable development because of the many burdens and responsibilities that the university leaders must face. Moreover, there is a lack of continuous and effective guidance and follow-up for university leadership to correct the course and adapt to deviations in work, and to deal with these challenges.

Furthermore, the differences between public and national universities in terms of their governance structures, funding models, and operational dynamics may influence the adoption and implementation of sustainable leadership practices. Understanding these differences is crucial for developing targeted strategies to enhance sustainable leadership across the higher education sector in Saudi Arabia.

Given these challenges and gaps in the existing literature, this study aims to address the following research questions:

1. What are the most important sustainable leadership practices in Saudi Arabian universities?
2. What is the degree of availability of sustainable leadership practices in Saudi Arabian public universities, from the point of view of academic leaders?
3. What is the degree of availability of sustainable leadership practices in Saudi Arabian national universities, from the point of view of academic leaders?
4. Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between the responses of academic leaders regarding the degree of availability of sustainable leadership practices in Saudi Arabian universities according to the type of university?
5. What are the ways to develop sustainable leadership practices in Saudi Arabian public and national universities from the point of view of academic leaders?

By addressing these questions, this study seeks to contribute to the understanding of sustainable leadership practices in Saudi Arabian universities, identify areas for improvement, and provide recommendations for enhancing sustainable leadership in both public and national universities. The findings of this research will have implications for university administrators, policymakers, and researchers in the field of educational leadership and sustainability in higher education.

## 2. LITERATURE REVIEW

The concept of sustainable leadership has gained significant attention in recent years, particularly in the context of higher education. This literature review investigates the state of knowledge on sustainable leadership in universities by conceptualizing knowledge of their definition, significance, dimensions, and empirical studies performed in various contexts.

### 2.1. Conceptual Framework of Sustainable Leadership in Higher Education

Sustainable leadership is a complex term which has been variously defined by different scholars. According to Hargreaves (2007), it's shared responsibility, nonhuman or material service without justification, and high respect towards the environment that is not harming the educational environment and society. As stated in Bendell and Little (2015) it plays an important role in the development of organizations by continuous learning to give them sustainable competitive advantage. Alhazmi (2022) gives a full definition in the context of higher education, e.g., as a leadership style in continuous development, caring for individuals, financial and environmental resources, society, and the preparation for the future with long term goals to achieve sustainability.

Several researchers have pointed out the importance of sustainable leadership in universities. Nazir et al. (2022) highlighted how it can help to support and boost organizational processes and procedures resulting in improved organizational processes, processes, and consequences; the organizational processes, procedures, and consequences are creative, always led him to improve, compete, and succeed. Furthermore, Harun et al. (2014) indicated that this is, especially, of special importance in educational institutions, because it plays a key role in fostering a positive university culture and high morale within the university community.

Leadership in higher education can alter university practices, steering them, performing their tasks, raising stakeholder commitment, exerting a positive influence on the performance indicators and contributing to institutional and community resilience (Aung & Hallinger, 2022). Sajjad et al. (2023) explain that sustainable leadership aims to build and instill sustainable relationships and enhance trust with beneficiaries inside and outside the educational institution.

### 2.2. Dimensions of Sustainable Leadership

Various scholars have proposed different dimensions of sustainable leadership in educational institutions. Avery & Bergsteiner (2011) identified long-term perspective, investment in people, internal leadership development, organizational culture, environmental responsibility, and ethical behavior as key dimensions. Hargreaves and Fink (2012) focused on sustainable learning, continuous success, social justice, diversity and active integration with the environment, sustainability of others' leadership, and preservation of human and material resources.

In the context of higher education, Lambert (2012) identified developing employee capabilities, strategic distribution, consolidation building long-term goals based on short-term goals, diversity, and conservation as important dimensions. Gerard (2020) emphasized incorporating sustainable leadership throughout the organization, distributed leadership, diversity, formulating short and long-term goals, considerations of all stakeholders, and individual reflexivity.

### 2.3. Empirical Studies on Sustainable Leadership in Universities

Several empirical studies have been conducted on sustainable leadership in universities across different contexts. Aung & Hallinger (2022) developed a conceptual model for sustainable leadership in higher education through a scope literature survey. Their findings highlighted the ability of sustainable leadership to influence university practices, redirect them, and enhance stakeholder commitment.

Iqbal and Piwowar-Sulej (2021) explored the impact of sustainable leadership on sustainable performance in Pakistan and China, emphasizing the mediating role of social innovation. Furthermore, the main characteristics of sustainable leadership in higher education institutions and challenges they face (Leal Filho et al., 2020). The most important skills revealed were innovation, long term thinking, and crisis management. Sustainable leadership practices at Uganda University included, developing employee capabilities, leading diversity, strategic distribution, human resource sustainability (Farooq, 2019).

In the Arab context, Al Zawahreh et al. (2018) studied the level of sustainable leadership in a public university in Jordan and found that academic leaders (leaders) of a university had a high level of sustainable leadership. O'Sullivan (2017) looked at sustainable leadership opportunities for students at a national university in the United Arab Emirates, primarily emphasizing a need for sharing and building relationships with public education institutions and establishing mentoring opportunities.

### 2.4. Comparative Studies and Gaps in the Literature

In contrast to other research on sustainable leadership in higher education, very little research is comparative between public and national universities. One of few comparative studies was conducted by Simanskiene et al. (2016) who compared Lithuanian public and national organizations and found that national organizations are more in line with sustainable leadership principles than public.

As pointed out by Vaughter et al. (2013), studies that compare post-secondary sustainability practices have been rare, and most studies have examined institutional processes without examination of their distant or external effects. Further research that is more comparative is called for, especially in settings like Saudi Arabia where both public and national universities are major players in the body of the nation's higher education.

The literature review shows that sustainable leadership is attracted in the higher education institutes. The study, however, also clarifies some gaps in existing research. This calls for more studies, particularly studies that will compare the practices for sustainable leadership in public and national universities in Saudi Arabia. Furthermore, the importance of sustainable leadership is frequently acknowledged, but its dimensions continue to be controversial and what is the best way to apply it to different university settings.

## 3. METHOD

### 3.1. Research Design

A mixed method approach was used in this study to unite quantitative and qualitative data from the units and universities to gain a full understanding on the sustainable leadership practice in the Saudi Arabian universities.

### 3.2. Participants

A total of 536 deans from Saudi Arabian public and national universities were the study population. The sample was composed of 235 academic leaders in analysis following the valid completion of questionnaires (160 were from public universities and 75 from national universities). Moreover, 8 university vice presidents and deputy presidents (5 from public universities and 3 from national universities) were selected as a purposive sample for interviews.

### 3.3. Instruments

The study used a questionnaire and semi-structured interviews for data collection. The questionnaire addressed the research questions and was structured into two parts: collecting personal data from participants and focusing on the study's axes and statements. The questionnaire had 54 items distributed across six axes, incorporating insights from previous studies such as (Alhazmi, 2022; Findler et al., 2019).

The validity and reliability of the questionnaire were verified. A review process with seven arbitrators established face validity and their recommendations were used to make modifications. Statistical analysis confirmed construct validity through item / total correlation range (0.31 - 0.69) and item / subscale correlation range (0.32– 0.96). Importantly, all correlation coefficients were statistically significant, indicating that the instrument has strong construct validity. The reliability of the questionnaire was tested by both test-retest reliability and internal consistency methods. Calculation of Pearson correlation coefficients produced test-retest reliability from 0.83 to 0.89. Reliability of subscales and the full measure was high as indicated by Cronbach's alpha coefficients of 0.89 to 0.94.

The fifth research question was addressed using semi structured interviews as part of the qualitative component of the study. The structure of the interview guide was like a questionnaire structured with two main parts. The first part of the data was collected through the personal data extracted from the interviewees and the

second one was made up of just the single, open question directed to the study's interests. The format enabled in depth explorations of participants' perspectives on sustainable leadership practices in their own institution.

Together, these instruments offered a comprehensive approach to data collection that combined quantitative instruments resulting in broad quantitative findings from the questionnaires and qualitative instruments resulting in detailed qualitative data from the interviews. A mixed methods approach was used to investigate sustainable leadership in Saudi Arabian universities.

### 3.4. Data Collection Procedures

- All deans of departments in Saudi Arabian public and national universities were asked to fill the questionnaire.
- The purposive sample of university vice presidents and deputy presidents were interviewed.

### 3.5. Data Analysis

Appropriate statistical techniques, such as descriptive statistics and inferential analyses were used to analyze the quantitative data from the questionnaires to compare public and national universities. The qualitative data were analyzed thematically to identify key themes and patterns to emerge in responses.

## 4. RESULTS

The study examined sustainable leadership practices in Saudi Arabian universities, comparing public and national universities. Results are presented for each research question.

Regarding the first research question "What are the most important sustainable leadership practices in Saudi Arabian universities?" a review of theoretical literature was conducted to develop a list of key practices. This informed the sustainable leadership scale used to address the second and third research questions. Responses were categorized as low (1.00-2.32), medium (2.33-3.66), or high (3.67-5.00).

For the second research question "What is the degree of availability of sustainable leadership practices in Saudi Arabian public universities, from academic leaders' perspectives?" Table 1 presents the means and standard deviations from academic leaders' perspectives. The table is organized by dimensions of sustainable leadership practices, with items ranked within each dimension.

**Table 1:** Sustainable Leadership Practices in Public Saudi Universities.

| Dim. | Rank | N | Items | M | SD | Degree |
|---|---|---|---|---|---|---|
| Resource Sustainability | 1 | 3 | Invests in developing and enhancing the skills and competencies of its staff. | 4,11 | 0,81 | High |
| | 2 | 4 | Creates an environment that stimulates creativity and outstanding positive results. | 4,03 | 0,85 | High |
| | 3 | 1 | Responds to changes in its resources with flexibility and awareness. | 3,86 | 0,87 | High |
| | 4 | 2 | Ensures means of continuity and safety for its resources. | 3,85 | 0,83 | High |
| | 5 | 7 | Evaluates and maintains facilities and infrastructure periodically and regularly. | 3,6 | 0,91 | Medium |
| | 6 | 8 | Invests its financial resources to achieve financial sustainability. | 3,35 | 0,95 | Medium |
| | 7 | 5 | Rationalizes the consumption of resources necessary to achieve goals. | 3,01 | 1,03 | Medium |
| | 8 | 9 | Attracts and retains distinguished individuals among its staff. | 2,85 | 1,01 | Medium |
| | 9 | 6 | Manages its resources with clean and environmentally friendly technology. | 2,84 | 1,02 | Medium |
| | Resource Sustainability dimension | | | 3.50 | 0.74 | Medium |
| Social Responsibility | 1 | 12 | Encourages volunteering for the benefit of the university and community. | 4,25 | 0,83 | High |
| | 2 | 10 | Senior management is committed to its social and environmental responsibility. | 4,19 | 0,81 | High |
| | 3 | 11 | Directs preventive and awareness campaigns for the community. | 4,17 | 1,01 | High |
| | 4 | 13 | Participates in local social events. | 4,15 | 0,87 | High |
| | 5 | 14 | Adopts environmentally and community-friendly practices. | 4,13 | 1,02 | High |
| | 6 | 15 | Develops programs and activities that provide solutions to community issues. | 4,06 | 0,95 | High |
| | 7 | 16 | Involves the community in decision-making that affects them. | 3,81 | 1,03 | High |
| | 8 | 17 | Participates with community institutions in studying its problems and providing solutions. | 3,36 | 0,85 | Medium |
| | 9 | 18 | Supports and backs non-profit purposeful work. | 3,34 | 0,91 | Medium |
| | Social Responsibility dimension | | | 3.94 | 0.75 | High |
| Environmental Contribution | 1 | 20 | Spreads awareness and guidance on environmental issues. | 4,19 | .81 | High |
| | 2 | 19 | Spreads the culture of resource consumption rationalization and future generations' rights. | 4,17 | .78 | High |
| | 3 | 21 | Offers environmental education and training programs. | 4,16 | .78 | High |
| | 4 | 22 | Supports conducting and publishing environmental scientific research. | 4,14 | .74 | High |
| | 5 | 23 | Assists other organizations in achieving their environmental goals. | 4,12 | .87 | High |
| | 6 | 24 | Provides initiatives to reduce resource consumption and waste. | 4,09 | .78 | High |
| | 7 | 25 | Contributes to reducing emissions and addressing air pollution. | 4,07 | 1.10 | High |
| | 8 | 26 | Encourages the existence and use of green technology. | 4,05 | 1.05 | High |
| | 9 | 27 | Acquires and uses environmentally friendly equipment and means. | 4,03 | 0.94 | High |
| | Environmental Contribution dimension | | | 4.11 | 0.67 | High |
| Strategic Orientation | 1 | 30 | Includes its most important orientations in its strategic plans. | 3,5 | 0,78 | Medium |
| | 2 | 34 | Achieves beneficiaries' goals within its capabilities professionally. | 3,46 | 0,77 | Medium |
| | 3 | 29 | Relies on strategic planning for future development. | 3,4 | 0,87 | Medium |
| | 4 | 31 | Adopts a clear vision in light of future aspirations. | 3,37 | 0,83 | Medium |
| | 5 | 32 | Aims to achieve long-term goals. | 3,32 | 0,97 | Medium |
| | 6 | 33 | Integrates with the visions of joint institutional work entities. | 3,29 | 0,87 | Medium |
| | 7 | 28 | Adopts a culture of change according to contemporary and future developments. | 3,25 | 0,94 | Medium |

| Dim. | Rank | N | Items | M | SD | Degree |
|---|---|---|---|---|---|---|
| and | 8 | 35 | Prepares and qualifies future leaders and their assistants. | 3,22 | 0,99 | Medium |
| | 9 | 36 | Allows everyone to contribute to future policies and decisions. | 3,2 | 0,88 | Medium |
| | Strategic Orientation dimension | | | 3.33 | 0.71 | Medium |
| | 1 | 42 | Facilitates work procedures and their flexibility to ensure efficient achievement. | 3,39 | 0,76 | Medium |
| | 2 | 43 | Uses the latest technical methods in work. | 3,28 | 0,89 | Medium |
| | 3 | 39 | Develops unconventional solutions to the problems it faces. | 3,21 | 0,86 | Medium |
| | 4 | 40 | Benefits from diversity in its various resources. | 3,14 | 0,9 | Medium |
| | 5 | 41 | Motivates its staff to be creative and innovative. | 3,09 | 0,83 | Medium |
| Innovation Creativity | 6 | 38 | Supports originality, experimentation, and new propositions. | 2,53 | 0,86 | Medium |
| | 7 | 37 | Organizes knowledge management inside and outside the university. | 2,47 | 0,87 | Medium |
| | 8 | 44 | Creates a work environment that supports and stimulates creativity and innovation. | 2,34 | 1,01 | Medium |
| | 9 | 45 | Invests in attracting the best work talents. | 2,21 | 0,89 | Medium |
| | Innovation and Creativity dimension | | | 2.85 | 0.66 | Medium |
| | 1 | 47 | Encourages commitment to professional ethics. | 4,31 | 0,79 | High |
| | 2 | 52 | Respects the ethical standards adopted by society. | 4,19 | 1,05 | High |
| | 3 | 48 | Addresses complaints and observations positively and effectively. | 3,79 | 0,93 | High |
| | 4 | 49 | Addresses complaints and observations positively and effectively. | 3,69 | 0,97 | High |
| | 5 | 50 | Prioritizes public interest over individual interest. | 3,36 | 0,89 | Medium |
| | 6 | 51 | Respects different opinions and viewpoints. | 3,17 | 0,68 | Medium |
| Ethical Practices | 7 | 46 | Practices fairness in all opportunities and grants. | 3,1 | 0,88 | Medium |
| | 8 | 53 | Adopts transparency and integrity in work and decision-making. | 3,01 | 0,49 | Medium |
| | 9 | 54 | Accepts dialogue, discussion, and constructive criticism. | 3.00 | 0,87 | Medium |
| | Ethical Practices dimension | | | 3.51 | 0.68 | Medium |
| Sustainable leadership practices in public Saudi universities | | | | 3.61 | 0.57 | Medium |

Overall, sustainable leadership practices in public universities were found to be at a medium level (M=3.61, SD=0.57). The environmental contribution dimension ranked highest (M=4.11, SD=0.67), while innovation and creativity ranked lowest (M=2.85, SD=0.66). Of the 54 scale items, 24 (44%) were above the overall mean, ranging from 4.31 to 3.69, while 30 (56%) were below, ranging from 3.60 to 2.21. By level, 24 items (44%) were rated high, 29 (54%) medium, and 1 (2%) low.

For the third research question "What is the degree of availability of sustainable leadership practices in Saudi Arabian national universities, from academic leaders' perspectives?" Table 2 presents similar data for national universities. The table follows the same structure as Table 1, allowing for easy comparison between public and national institutions.

**Table 2:** Sustainable Leadership Practices in National Saudi Universities.

| Dim. | Rank | N | Items | M | SD | Degree |
|---|---|---|---|---|---|---|
| Resource Sustainability | 1 | 5 | Rationalizes the consumption of resources necessary to achieve goals. | 4,24 | .85 | High |
| | 2 | 8 | Invests its financial resources to achieve financial sustainability. | 3,95 | .91 | High |
| | 3 | 1 | Responds to changes in its resources with flexibility and awareness. | 3,85 | .93 | High |
| | 4 | 2 | Ensures means of continuity and safety for its resources. | 3,83 | .91 | High |
| | 5 | 7 | Evaluates and maintains facilities and infrastructure periodically and regularly. | 3,76 | 1.01 | High |
| | 6 | 3 | Invests in developing and enhancing the skills and competencies of its staff. | 3,72 | .91 | High |
| | 7 | 9 | Attracts and retains distinguished individuals among its staff. | 3,69 | .89 | High |
| | 8 | 4 | Creates an environment that stimulates creativity and outstanding positive results. | 3,57 | .98 | Medium |
| | 9 | 6 | Manages its resources with clean and environmentally friendly technology. | 3,41 | .73 | Medium |
| | Resource Sustainability dimension | | | 3.78 | 0.73 | High |
| Social Responsibility | 1 | 10 | Senior management is committed to its social and environmental responsibility. | 4,19 | .82 | High |
| | 2 | 12 | Encourages volunteering for the benefit of the university and community. | 4,16 | .72 | High |
| | 3 | 15 | Develops programs and activities that provide solutions to community issues. | 4,13 | .80 | High |
| | 4 | 14 | Adopts environmentally and community-friendly practices. | 4,08 | .86 | High |
| | 5 | 13 | Participates in local social events. | 3,93 | .89 | High |
| | 6 | 18 | Supports and backs non-profit purposeful work. | 3,77 | .97 | High |
| | 7 | 17 | Participates with community institutions in studying its problems and providing solutions. | 3,39 | .91 | Medium |
| | 8 | 16 | Involves the community in decision-making that affects them. | 3,11 | 1.27 | Medium |
| | 9 | 11 | Directs preventive and awareness campaigns for the community. | 3,08 | 1.16 | Medium |
| | Social Responsibility dimension | | | 3.76 | 0.71 | High |
| Environmental Contribution | 1 | 27 | Acquires and uses environmentally friendly equipment and means. | 4,31 | .59 | High |
| | 2 | 20 | Spreads awareness and guidance on environmental issues. | 4,19 | .69 | High |
| | 3 | 23 | Assists other organizations in achieving their environmental goals. | 4,18 | .64 | High |
| | 4 | 19 | Spreads the culture of resource consumption rationalization and future generations' rights. | 4,17 | .64 | High |
| | 5 | 22 | Supports conducting and publishing environmental scientific research. | 4,17 | .77 | High |
| | 6 | 21 | Offers environmental education and training programs. | 4,15 | .73 | High |
| | 7 | 25 | Contributes to reducing emissions and addressing air pollution. | 4,14 | .65 | High |
| | 8 | 24 | Provides initiatives to reduce resource consumption and waste. | 4,12 | .66 | High |
| | 9 | 26 | Encourages the existence and use of green technology. | 4,10 | .79 | High |
| | Environmental Contribution dimension | | | 4.17 | 0.52 | High |
| Strat egic | 1 | 36 | Allows everyone to contribute to future policies and decisions. | 4,19 | 0,54 | High |
| | 2 | 33 | Integrates with the visions of joint institutional work entities. | 4,16 | 0,56 | High |
| | 3 | 32 | Aims to achieve long-term goals. | 4,15 | 0,88 | High |

| Dim. | Rank | N | Items | M | SD | Degree |
|---|---|---|---|---|---|---|
| | 4 | 34 | Achieves beneficiaries' goals within its capabilities professionally. | 4,14 | 0,71 | High |
| | 5 | 28 | Adopts a culture of change according to contemporary and future developments. | 4,12 | 0,69 | High |
| | 6 | 29 | Relies on strategic planning for future development. | 3,99 | 1,01 | High |
| | 7 | 30 | Includes its most important orientations in its strategic plans. | 3,81 | 0,96 | Medium |
| | 8 | 35 | Prepares and qualifies future leaders and their assistants. | 3,29 | 0,99 | Medium |
| | 9 | 31 | Adopts a clear vision in light of future aspirations. | 2,99 | 0,91 | Medium |
| | Strategic Orientation dimension | | | 2.99 | 0.49 | High |
| and | 1 | 39 | Develops unconventional solutions to the problems it faces. | 4,22 | .83 | High |
| | 2 | 42 | Facilitates work procedures and their flexibility to ensure efficient achievement. | 3,97 | .82 | High |
| | 3 | 43 | Uses the latest technical methods in work. | 3,82 | .79 | High |
| | 4 | 44 | Creates a work environment that supports and stimulates creativity and innovation. | 3,39 | 1,03 | Medium |
| | 5 | 38 | Supports originality, experimentation, and new propositions. | 3,37 | .94 | Medium |
| Innovation Creativity | 6 | 37 | Organizes knowledge management inside and outside the university. | 3,24 | .97 | Medium |
| | 7 | 41 | Motivates its staff to be creative and innovative. | 2,57 | 1 | Medium |
| | 8 | 40 | Benefits from diversity in its various resources. | 2,55 | .98 | Medium |
| | 9 | 45 | Invests in attracting the best work talents. | 2,39 | .99 | Medium |
| | Innovation and Creativity dimension | | | 3.28 | 0.64 | Medium |
| | 1 | 54 | Accepts dialogue, discussion, and constructive criticism. | 4,18 | 0,62 | High |
| | 2 | 53 | Adopts transparency and integrity in work and decision-making. | 4,15 | 0,77 | High |
| | 3 | 47 | Encourages commitment to professional ethics. | 4,12 | 0,96 | High |
| | 4 | 52 | Respects the ethical standards adopted by society. | 3,81 | 0,82 | High |
| | 5 | 51 | Respects different opinions and viewpoints. | 3,78 | 0,85 | High |
| Ethical Practices | 6 | 50 | Prioritizes public interest over individual interest. | 3,68 | 0,75 | High |
| | 7 | 49 | Addresses complaints and observations positively and effectively. | 3,58 | 0,85 | Medium |
| | 8 | 48 | Addresses complaints and observations positively and effectively. | 3,38 | 1,02 | Medium |
| | 9 | 46 | Practices fairness in all opportunities and grants. | 3,35 | 0,99 | Medium |
| | Ethical Practices dimension | | | 3.78 | 0.65 | High |
| Sustainable leadership practices in public Saudi universities | | | | 3.80 | 0.50 | High |

The results show that overall sustainable leadership practices in national universities were at a high level (M=3.80, SD=0.50). Similar to public universities, environmental contribution ranked highest (M=4.17, SD=0.52) and innovation and creativity lowest (M=3.28, SD=0.64). Of the 54 items, 32 (59%) were above the overall mean (4.31-3.81) and 22 (41%) below (3.785-2.39). By level, 38 items (70%) were rated high and 16 (30%) medium.

The fourth research question investigated differences between public and national universities. Table 3 presents t-test results comparing the responses from academic leaders in public and national universities across all dimensions of sustainable leadership practices.

**Table 3:** T-Test Results Between Academic Leaders' Perspectives from (Public) and (National) Universities.

| Dimension | University Type | N | M | SD | DF | T-value |
|---|---|---|---|---|---|---|
| Resource Sustainability | Public Universities | 160 | 3.50 | .74 | 233 | -2.715** |
| | National Universities | 75 | 3.78 | .73 | | |
| Social Responsibility | Public Universities | 160 | 3.94 | .75 | 233 | 1.752 |
| | National Universities | 75 | 3.76 | .71 | | |
| Environmental Contribution | Public Universities | 160 | 4.11 | .67 | 233 | -.711 |
| | National Universities | 75 | 4.17 | .52 | | |
| Strategic Orientation | Public Universities | 160 | 3.33 | .71 | 233 | -5.912** |
| | National Universities | 75 | 3.87 | .49 | | |
| Innovation and Creativity | Public Universities | 160 | 2.85 | .66 | 233 | -4.686** |
| | National Universities | 75 | 3.28 | .64 | | |
| Ethical Practices | Public Universities | 160 | 3.51 | .68 | 233 | -2.867** |
| | National Universities | 75 | 3.78 | .65 | | |
| Total | Public Universities | 160 | 3.61 | .57 | 233 | -2.443** |
| | National Universities | 75 | 3.80 | .50 | | |

**Note:** N = 235; **p < 0.01.

The results show significant differences (p<0.05) in overall sustainable leadership practices and most dimensions, favoring national universities. No significant differences were found in social responsibility and environmental contribution dimensions. These findings suggest that national universities generally demonstrate higher levs of sustainable leadership practices compared to public universities, except in areas of social responsibility and environmental contribution where they perform similarly.

For the fifth research question on ways to develop sustainable leadership practices, Table 4 summarizes responses from interviews with 8 university vice presidents and deputies. The table presents the frequency and percentage of responses for each suggested development method, comparing public and national universities.

**Table 4:** Responses of Interview Participants to the Interview Question.

| No. | Interview Items | Public Universities | | | | | | | | National Universities | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Response Freq. | | | | | Freq. | % | Rk | Response Freq. | | | Freq. | % | Rk | % | Rk |
| | | 1 | 2 | 3 | 4 | 5 | | | | 1 | 2 | 3 | | | | | |
| 1 | Organizing training programs and workshops based on the needs of implementing sustainability leadership. | * | * | * | * | * | 5 | 100% | 1 | * | * | * | 3 | 100% | 1 | 100% | 1 |
| 2 | Incorporating materials and courses that prepare sustainability leaders into programs and study plans. | | | | | | 0 | 0% | 6 | | * | * | 2 | 67% | 2 | 25% | 5 |
| 3 | Creating and adopting various technical mechanisms to exchange knowledge and experiences of sustainability leadership. | | | * | | * | 2 | 40% | 4 | * | * | | 2 | 67% | 2 | 50% | 4 |
| 4 | Providing opportunities for academic leaders to participate in sustainability projects, programs, and activities. | * | * | | * | | 3 | 60% | 3 | * | | * | 2 | 67% | 2 | 63% | 3 |
| 5 | Providing learning opportunities through work to master sustainable leadership. | * | | * | * | * | 4 | 80% | 2 | * | | * | 2 | 67% | 2 | 75% | 2 |
| 6 | Proposing and adopting guidelines for sustainable practices in all activities of academic leaders. | | | | | * | 1 | 20% | 5 | | * | | 1 | 33% | 3 | 25% | 5 |
| 7 | Establishing communication channels for academic leaders with sustainability consultants and centers of expertise. | * | * | | * | * | 4 | 80% | 2 | | * | * | 2 | 67% | 2 | 75% | 2 |
| 8 | Encouraging research and studies aimed at developing sustainable leadership. | * | * | * | * | | 4 | 80% | 2 | * | * | | 2 | 67% | 2 | 75% | 2 |
| 9 | Forming specialized sustainability teams within the university. | * | | * | | * | 3 | 60% | 3 | | * | * | 2 | 67% | 2 | 63% | 3 |
| 10 | Providing necessary resources, requirements, and support for implementing sustainability projects. | * | * | * | * | * | 5 | 100% | 1 | | | * | 1 | 33% | 3 | 75% | 2 |
| 11 | Establishing partnership agreements with sustainability-focused entities to benefit from their experiences. | | * | | * | | 2 | 40% | 4 | * | * | | 2 | 67% | 2 | 50% | 4 |
| 12 | Facilitating cooperation and contracting with stakeholders in implementing sustainability projects. | | * | | | * | 2 | 40% | 4 | * | * | * | 3 | 100% | 1 | 63% | 3 |
| 13 | Encouraging community participation in the university's sustainable activities. | * | | | | * | 2 | 40% | 4 | * | * | * | 3 | 100% | 1 | 63% | 3 |
| 14 | Facilitating the contribution of funding bodies to sustainable leadership projects. | | | * | | * | 2 | 40% | 4 | * | * | * | 3 | 100% | 1 | 63% | 3 |
| 15 | Providing systems, technologies, and applications for governing sustainable leadership activities. | * | * | * | * | | 4 | 80% | 2 | | | | 0 | 0% | 4 | 50% | 4 |
| 16 | Marketing sustainability culture in the internal and external university environment. | * | * | | * | * | 4 | 80% | 2 | * | | * | 2 | 67% | 2 | 75% | 2 |
| 17 | Setting criteria for evaluating academic leaders' performance based on sustainable leadership dimensions. | * | * | * | * | * | 5 | 100% | 1 | * | * | * | 3 | 100% | 1 | 100% | 1 |
| 18 | Evaluating university programs and activities in light of sustainability dimensions. | | * | * | | | 2 | 40% | 4 | * | * | * | 3 | 100% | 1 | 63% | 3 |
| 19 | Utilizing social media technologies for empowerment in the field of sustainability leadership. | * | * | * | * | | 4 | 80% | 2 | * | | * | 2 | 67% | 2 | 75% | 2 |
| 20 | Using educational platforms and applications to provide content on sustainability leadership | | * | * | * | | 3 | 60% | 3 | * | * | | 2 | 67% | 2 | 63% | 3 |
| 21 | Rewarding and encouraging achievements and innovations of sustainability leaders in the university. | * | * | * | * | * | 5 | 100% | 1 | | * | | 1 | 33% | 3 | 75% | 2 |

**Note:** Freq. = Frequency; Rk = Rank.

All interviewees agreed on the importance of organizing training programs and workshops based on sustainability leadership implementation needs, and establishing criteria for evaluating academic leaders' performance based on sustainable leadership dimensions. There was also agreement on the low importance of proposing and adopting guidelines for sustainable practices in all academic leadership activities. However, there were some differences in priorities, depending on the type of leaders by institution: the public university leaders and the national university leaders purporting the uniqueness characteristics of each type of institution. These results give a comprehensive view on sustainable leadership practices in Saudi universities and that of public and national universities.

## 5. DISCUSSION

The current study sought to explore how sustainable leadership practice is carried out in Saudi Arabian universities, comparing public and national universities. The results show that sustainable leadership in higher education in Saudi Arabia is situated in a specific context and provide some valuable insights about the current situation and opportunities for improvement.

Overall, the results indicate that national universities exhibit more instances of practice sustainable leadership than do public universities in Saudi Arabia. Overall, national universities scored a high level (M=3.80) of sustainable leadership practices, and public universities scored at a medium level (M=3.61). In all dimensions of sustainable leadership, national universities performed significantly better than public universities. This finding also concurs with previous research conducted by Simanskiene et al. (2016) that revealed public organizations that are less influenced by sustainable leadership principles as compared to less applicability among national organizations.

This could be due to several factors associated with higher levels of sustainable leadership in practices in national universities. Because national universities tend to have more decision-making and implementation flexibility in addressing sustainability issues than do public universities, which are subject to more bureaucratic constraints and slower decision-making processes, national universities are better positioned to advance sustainability. Further, national universities may have a bigger choice of funding sources so that they can expel additional dollars into sustainability activities. In fact, it may push these institutions to embody more sustainability as a means of differentiation and to strengthen its reputation that is so vital to engaging students, faculty, and potential investors.

Surprisingly, both public and the national universities placed the environmental contribution dimension as highest of all the dimensions of sustainable leadership. This means that whatever type of university one attended was utilizing environmental sustainability as its focus. This focus corresponds to a global trend of expanding environmental issues' attention in higher education and may be driven by, for example, national policies like Vision 2030 in Saudi Arabia, or sustainability (Alshuwaikhat & Mohammed, 2017; Mohiuddin et al., 2023).

Additionally, both types of universities ranked innovation and creativity as the lowest dimension of sustainable leadership whereby national universities outperformed public universities in this dimension. In a way, this tells us it's an area that could do with improving in Saudi higher education. According to Hargreaves & Fink (2006), the essence of a sustainable leader is to promote innovation and creativity which aids the development new solutions in solving sustainability challenges and a culture of continuous improvement. This dimension scores indicate that Saudi universities might give more importance to the creation of innovation and creativity on the path of sustainable development.

The study also finds major differences between public and national universities in most dimensions of sustainable leadership, with national universities typically performing better. Nevertheless, no differences are found in the social responsibility and environmental contribution dimensions. This indicates that although national universities are ahead in similar areas as resource sustainability, strategic orientation, and ethical responsibilities, both types of institutions take equal role in social and environmental responsibility.

The findings have important implications for policy and practice in Saudi Arabian higher education. For public universities, it could make sense to discuss how institutional barriers of the bureaucratic kind, and the financial constraints may be inhibiting the implementation of sustainable leadership practices. It might include speaking in favor of more autonomy in decision making on sustainability initiatives or trying to find other funding avenues for sustainability initiatives.

While they had more favorable performance in sustainable leadership for national universities, there is also room for improvement particularly in achieving innovation and creativity. Fostering a culture of experimentation, risk taking, in the hope of meeting sustainability goals might benefit these institutions.

The interviews with the university leaders have yielded qualitative findings about how sustainable leadership practices might be developed. There was consensus both on organizing training programs and workshops based on sustainability leadership needs and on this being a responsibility both of public and national university leaders. This is consistent with prior research about the importance of leadership development to move sustainability forward in higher education (Leal Filho et al., 2020; O'Sullivan, 2017).

Noteworthy here is the attention paid to criteria for evaluation of academic leaders' performance in terms of sustainable leadership dimensions. Therefore, this implies a need to integrate sustainability into the formal performance evaluation process to be a powerful driver for change. This approach is in line with

recommendations of past studies on embedding sustainability in university governance structures (Dalati et al., 2017).

Surprisingly, public and national university leaders indicated emphases regarding some development strategies. Instead, public university leaders rewarded and encouraged sustainability achievements and innovations, as well as ensured that adequate resources and support were put in place to implement sustainability projects. This implies the necessity of triggering the incentives and clearing the obstacles to sustainable leadership in the public university context.

However, national university leaders argued for evaluating various university programs and activities within the sustainability dimensions and engaging the community in sustainable activities as well as providing support for sustainable leadership projects to funding bodies. It may be due to the nature of national universities whose orientation towards stakeholders' engagement and diversified funding sources is greater.

Sustainable leadership development strategies should be tailored to specific contexts and needs of different types of institutions; this different emphasis indicates the importance of emphasizing the distinction. There are common parts, such as the requirement for training and training performance evaluation criteria, but most effective ways might differ between public and national universities.

The study's findings also let loose some blind spots in how sustainable leadership is developed today. For instance, in terms of incorporation of sustainability leadership into curricula and study plans, public university leaders did not consist of; and national university leaders did not concentrate of providing systems and technologies for governing sustainable leadership activities. The possibility to exchange experience between public and national universities might exist in these areas.

Support for the development of academic leaders' capabilities in sustainability reflects the increasing acknowledgment of leadership as one of the key drivers for organizational change towards sustainability in higher education (Hargreaves & Fink, 2006; Leal Filho et al., 2020). Therefore, academic leaders are the main change makers of the university environment and culture. Given that, advancing sustainability in higher education certainly requires investing in their development.

The study shows that although sustainable leadership can be implemented in universities, it is very complicated. This suggests that context specific approaches are needed to understand the differences observed between public and national universities, as well as differences in the level of emphasis in development strategies. The perspective of a one size fits all concept in sustainable leadership in higher education does not suit with the fact that this leadership is adaptable to the different characteristics and challenges of each institution (Hargreaves & Fink, 2006).

Significant limitations must be considered in the context of study. However, its cross-sectional nature does not permit us to infer policy trends, instead it gives us a snapshot of sustainable leadership practices at a single point in time. More understanding of how these practices, or variants of them, are changing over time and what is driving this change can be gained in longitudinal studies. Meanwhile, the study consisted of both a qualitative and quantitative component, and further in-depth qualitative research might bring richer insights into the challenges and opportunities of leading in sustainable institutions in Saudi Arabian universities.

## 6. CONCLUSION

This study has contributed to the knowledge of sustainable leadership practices in Saudi Arabian universities with differences between public and national institutions and areas for improvement. The findings indicate that innovation as well as creativity for sustainability is yet to be developed adequately. Additionally, the study highlights the need for customized leadership in sustainable development by various types of institutions based on a particular context and issue. The time to develop sustainable higher education has come as Saudi Arabia pushes on with its goals to achieve a more sustainable Vision 2030. Sustainable leadership practices could furthermore be explored in future research with respect to their long term impacts on university performance and their contributions to national sustainability goals.

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## REFERENCES

Alahmari, M., Issa, T., Issa, T., & Nau, S. Z. (2019). Faculty awareness of the economic and environmental benefits of augmented reality for sustainability in Saudi Arabian universities. *Journal of Cleaner Production*, *226*, 259-269. https://doi.org/10.1016/j.jclepro.2019.04.090

Aleixo, A. M., Leal, S., & Azeiteiro, U. M. (2018). Conceptualization of sustainable higher education institutions, roles, barriers, and challenges for sustainability: An exploratory study in Portugal. *Journal of cleaner production*, *172*, 1664-1673. https://doi.org/10.1016/j.jclepro.2016.11.010

Alhazmi, M. Y. (2022). A proposed vision for the development of academic leaders of Saudi universities in the light of sustainable leadership. *Journal of Educational and Psychological Sciences*, *6*(11), 155-182. https://doi.org/10.26389/AJSRP.H200122

Alshuwaikhat, H. M., & Mohammed, I. (2017). Sustainability matters in national development visions—Evidence from Saudi Arabia's Vision for 2030. *Sustainability*, *9*(3), 408. https://doi.org/10.3390/su9030408

Al-Zawahreh, A., Khasawneh, S., & Al-Jaradat, M. (2019). Green management practices in higher education: The status of sustainable leadership. *Tertiary Education and Management*, *25*, 53-63. https://doi.org/10.1007/s11233-018-09014-9

Armani, A. B., Petrini, M., & Santos, A. C. (2020). What are the attributes of sustainable leadership? *Revista Brasileira de Gestão de Negócios*, *22*(04), 820-835. https://doi.org/10.7819/rbgn.v22i4.4086

Aung, P. N., & Hallinger, P. (2022). Research on sustainability leadership in higher education: A scoping review. *International Journal of Sustainability in Higher Education*, *24*(3), 517-534. https://doi.org/10.1108/IJSHE-09-2021-0367

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

Baumgartner, R. J., & Rauter, R. (2017). Strategic perspectives of corporate sustainability management to develop a sustainable organization. *Journal of Cleaner Production*, *140*, 81-92. https://doi.org/10.1016/j.jclepro.2016.04.146

Bendell, J., & Little, R. (2015). Seeking sustainability leadership. *Journal of Corporate Citizenship*, (60), 13-26. Retrieved from https://www.jstor.org/stable/jcorpciti.60.13

Bendell, J., Sutherland, N., & Little, R. (2017). Beyond unsustainable leadership: critical social theory for sustainable leadership. *Sustainability Accounting, Management and Policy Journal*, *8*(4), 418-444. https://doi.org/10.1108/SAMPJ-08-2016-0048

Bosanquet, A., Cameron, A., Marshall, S., & Orrell, J. (2008). Ensuring sustainable leadership for quality learning and teaching. In *AARE 2008 Conference papers collection*. Retrieved from http://www.aare.edu. au/08pap/bos08405.pdf

Cash, D. W., Clark, W. C., Alcock, F., Dickson, N. M., Eckley, N., Guston, D. H., ... & Mitchell, R. B. (2003). Knowledge systems for sustainable development. *Proceedings of the national academy of sciences*, *100*(14), 8086-8091. https://doi.org/10.1073/pnas.1231332100

Chams, N., & García-Blandón, J. (2019). On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling*, *141*, 109-122. https://doi.org/10.1016/j.resconrec.2018.10.006

Clark, B. R. (2003). Sustaining change in universities: Continuities in case studies and concepts. *Tertiary education and management*, *9*(2), 99-116. https://doi.org/10.1023/A:1023538118918

Corcoran, P. B., Weakland, J. P., & Hollingshead, B. P. (2017). The role of university centers in environmental and sustainability education in envisioning futures. *Theory and Practice of Sustainable Development in Higher Education*, *2*, 131-142. https://doi.org/10.1007/978-3-319-47889-0_10

Dalati, S., Raudeliūnienė, J., & Davidavičienė, V. (2017). Sustainable leadership, organizational trust on job satisfaction: empirical evidence from higher education institutions in Syria. *Business, Management and Economics Engineering*, *15*(1), 14-27.

Di Fabio, A., & Peiró, J. M. (2018). Human capital sustainability leadership to promote sustainable development and healthy organizations: A new scale. *Sustainability*, *10*(7), 2413. https://doi.org/10.3390/su10072413

Egri, C. P., & Herman, S. (2000). Leadership in the North American environmental sector: Values, leadership styles, and contexts of environmental leaders and their organizations. *Academy of Management journal*, *43*(4), 571-604. https://doi.org/10.5465/1556356

Elbably, Y., & Nemt-allah, M. (2024). A mindfulness-based intervention on verbal insight and social problem-solving in university students. *Journal of Palestine Ahliya University for Research and Studies*, *3*(1), 164-177. https://doi.org/10.59994/pau.2024.1.164

Farooq, M. (2019). A measurement model of university staff perception towards sustainable leadership practices in the universities of the central region of Uganda. *International Journal of Quality Control and Standards in Science and Engineering (IJQCSSE)*, *7*(1), 25-41. https://doi.org/10.4018/IJQCSSE.201901010

Findler, F., Schönherr, N., Lozano, R., Reider, D., & Martinuzzi, A. (2019). The impacts of higher education institutions on sustainable development: A review and conceptualization. *International Journal of Sustainability in Higher Education*, *20*(1), 23-38. https://doi.org/10.1108/IJSHE-07-2017-0114

Gerard, L. J. (2020). *An analysis of sustainable leadership challenges and prospects in Scottish higher education* [Doctoral dissertation, Edinburgh Napier University].

Giesenbauer, B., & Müller-Christ, G. (2020). University 4.0: Promoting the transformation of higher education institutions toward sustainable development. *Sustainability*, *12*(8), 3371. https://doi.org/10.3390/su12083371

Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of education*, *42*(2), 223-233. https://doi.org/10.1111/j.1465-3435.2007.00294.x

Hargreaves, A., & Fink, D. (2004). The seven principles of sustainable leadership. *Educational leadership*, *61*(7), 8-13.

Hargreaves, A., & Fink, D. (2006). *Sustainable Leadership*. Jossey-Bass.

Hargreaves, A., & Fink, D. (2012). *Sustainable leadership*. John Wiley & Sons.

Hariram, N. P., Mekha, K. B., Suganthan, V., & Sudhakar, K. (2023). Sustainalism: An integrated socio-economic-environmental model to address sustainable development and sustainability. *Sustainability*, *15*(13), 10682. https://doi.org/10.3390/su151310682

Harun, H., Khadijah, S., Mom, M., Education, V., Tun, U., & Onn, H. (2014). Leadership development and sustainable leadership among TVET student. *Journal of Management Policies and Practices*, *2*(2), 27-38.

Hummels, H., & Argyrou, A. (2021). Planetary demands: Redefining sustainable development and sustainable entrepreneurship. *Journal of Cleaner Production*, *278*, 123804. https://doi.org/10.1016/j.jclepro.2020.123804

Iqbal, Q., & Piwowar-Sulej, K. (2021). Sustainable leadership in higher education institutions: Social innovation as a mechanism. *International Journal of Sustainability in Higher Education*, *23*(8), 1-20. https://doi.org/10.1108/IJSHE-04-2021-0162

Iqbal, Q., Ahmad, N. H., & Halim, H. A. (2020). How does sustainable leadership influence sustainable performance? Empirical evidence from selected ASEAN countries. *Sage Open*, *10*(4), 2158244020969394. https://doi.org/10.1177/2158244020969394

Kaletnik, G., & Lutkovska, S. (2020). Innovative environmental strategy for sustainable development. *European Journal of Sustainable Development*, *9*(2), 89-89. https://doi.org/10.14207/ejsd.2020.v9n2p89

Kantabutra, S., & Saratun, M. (2013). Sustainable leadership: Honeybee practices at Thailand's oldest university. *International Journal of Educational Management*, *27*(4), 356-376. https://doi.org/10.1108/09513541311316304

Kohl, K., Hopkins, C., Barth, M., Michelsen, G., Dlouhá, J., Razak, D. A., ... & Toman, I. (2022). A whole-institution approach towards sustainability: A crucial aspect of higher education's individual and collective engagement with the SDGs and beyond. *International Journal of Sustainability in Higher Education*, *23*(2), 218-236. https://doi.org/10.1108/IJSHE-10-2020-0398

Kopnina, H. (2020). Education for the future? Critical evaluation of education for sustainable development goals. *The Journal of Environmental Education*, *51*(4), 280-291. https://doi.org/10.1080/00958964.2019.1710444

Lambert, S. (2012). The perception and implementation of sustainable leadership strategies in further education colleges. *Journal of Leadership Education*, *11*(2), 102-120. https://doi.org/10.12806/V11/I2/RF6

Leal Filho, W., Eustachio, J. H., Caldana, A. C. F., Will, M., Lange Salvia, A., Rampasso, I. S., ... & Kovaleva, M. (2020). Sustainability leadership in higher education institutions: An overview of challenges. *Sustainability*, *12*(9), 3761. https://doi.org/10.3390/su12093761

Lewandowska, A., Ullah, Z., AlDhaen, F. S., AlDhaen, E., & Yakymchuk, A. (2023). Enhancing organizational social sustainability: exploring the effect of sustainable leadership and the moderating role of micro-level CSR. *Sustainability*, *15*(15), 11853. https://doi.org/10.3390/su151511853

Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, *45*(4), 357-366. https://doi.org/10.1016/j.jwb.2009.08.006

Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., & Lambrechts, W. (2013). Declarations for sustainability in higher education: becoming better leaders, through addressing the university system. *Journal of Cleaner Production*, *48*, 10-19. https://doi.org/10.1016/j.jclepro.2011.10.006

Millennium ecosystem assessment, M. E. A. (2005). *Ecosystems and Human Well-being* (Vol. 5, p. 563). Island press.

Mohiuddin, K., Nasr, O. A., Miladi, M. N., Fatima, H., Shahwar, S., & Naveed, Q. N. (2023). Potentialities and priorities for higher educational development in Saudi Arabia for the next decade: Critical reflections of the vision 2030 framework. *Heliyon*, *9*(5), https://doi.org/10.1016/j.heliyon.2023.e16368

Nazir, T. N., Nishad, N., Jayakumar, M., Vijayakumar, G., & Islam, H. (2022). A study on the impact of sustainable leadership and core competencies on sustainable competitive advantage in the information technology (IT) sector. *Sustainability*, 14(11), 6899. https://doi.org/10.3390/su14116899

Nemt-allah, M., & Darwesh, A. (2024). Fostering flexible minds: The effect of probing questions in enhancing divergent thinking in geography. *Journal of Palestine Ahliya University for Research and Studies*, *3*(2), 45-57. https://doi.org/10.59994/pau.2024.2.45

O'Sullivan, K. (2017). Student Leadership in Sustainable Development in a National University in the UAE—A Case Study. *Handbook of Theory and Practice of Sustainable Development in Higher Education*, *1*, 201-216. https://doi.org/10.1007/978-3-319-47868-5_13

Okpara, J. O., & Idowu, S. O. (Eds.). (2013). *Corporate Social Responsibility: Challenges, Opportunities and Strategies for 21st Century Leaders*. Springer Science & Business Media. https://doi.org/10.1007/978-3-642-40975-2

Price, E. A., White, R. M., Mori, K., Longhurst, J., Baughan, P., Hayles, C. S., ... & Preist, C. (2021). Supporting the role of universities in leading individual and societal transformation through education for sustainable development. *Discover Sustainability*, *2*(1), 49. https://doi.org/10.1007/s43621-021-00058-3

Radwan, A. F., & Khalil, E. M. (2021). Knowledge, attitude and practice toward sustainability among university students in UAE. *International Journal of Sustainability in Higher Education*, *22*(5), 964-981. https://doi.org/10.1108/IJSHE-06-2020-0229

Sajjad, A., Eweje, G., & Raziq, M. (2023). Sustainability leadership: An integrative review and conceptual synthesis. *Business Strategy and the Environment*, *33*(4), 2849-2867. https://doi.org/10.1002/bse.3631

Simanskiene, L., Zuperkiene, E., & Pauzuoliene, J. (2016). Sustainable leadership in Lithuanian organizations. In *New Challenges of Economic and Business Development–2016*, (pp. 653-667). University of Latvia.

Singh, A., Singh, H. P., Alam, F., & Agrawal, V. (2022). Role of education, training, and e-learning in sustainable employment generation and social empowerment in Saudi Arabia. *Sustainability*, *14*(14), 8822. https://doi.org/10.3390/su14148822

Sotarauta, M., Horlings, I., & Liddle, J. (Eds.). (2012). *Leadership and Change, in Sustainable Regional Development* (Vol. 60). Routledge.

Suriyankietkaew, S., Krittayaruangroj, K., & Iamsawan, N. (2022). Sustainable Leadership practices and competencies of SMEs for sustainability and resilience: A community-based social enterprise study. *Sustainability*, *14*(10), 5762. https://doi.org/10.3390/su14105762

Vaughter, P., Wright, T., McKenzie, M., & Lidstone, L. (2013). Greening the ivory tower: A review of educational research on sustainability in post-secondary education. *Sustainability*, *5*(5), 2252-2271. https://doi.org/10.3390/su5052252

Weiss, M., & Barth, M. (2019). Global research landscape of sustainability curricula implementation in higher education. *International Journal of Sustainability in Higher Education*, *20*(4), 570-589. https://doi.org/10.1108/IJSHE-10-2018-0190

Yadav, S. K., Banerjee, A., Jhariya, M. K., Meena, R. S., Raj, A., Khan, N., ... & Sheoran, S. (2022). Environmental education for sustainable development. In *Natural Resources Conservation and Advances for Sustainability* (pp. 415-431). Elsevier. https://doi.org/10.1016/B978-0-12-822976-7.00010-7