

A Framework for Effective Implementation of Sustainability Leadership in Saudi Arabia Higher Education

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Abstract

Sustainability leadership has become essential in education institutions worldwide as it aims to address the urgent social challenges we face today. Saudi Arabia's ambitious Vision 2030 plan has also recognised the need for sustainable development across all sectors. However, more research must be conducted on sustainability leadership within Saudi Arabia's higher education institutions (HEIs). This study seeks to develop a framework for implementing sustainability leadership through a systematic review of the literature on sustainability leadership in Saudi universities. This review aims to understand the current state of sustainability initiatives in these institutions, identify implementation challenges, and develop strategies to develop a practical framework for sustainability leadership to guide institutions' journey towards sustainability. By implementing this framework, Saudi higher education can be transformed through sustainable leadership. The framework involves reorienting missions and fostering the commitment of stakeholders. In the long run, sustainability leadership can contribute to institutional and societal resilience by positively impacting a balanced set of performance indicators.

Keywords: Sustainability Leadership, Framework, Implementation, Higher Education Institutions, Saudi Arabia Universities

INTRODUCTION

Sustainability leadership is a concept that has gained significant attention in recent years as organisations and institutions around the world recognise the urgent need to address environmental and social challenges (Alshuwaikhat et al., 2016). As a rapidly developing nation, Saudi Arabia increasingly recognises the importance of sustainability and has made significant strides in this area. However, there is a need to develop a comprehensive framework for sustainability leadership within Saudi universities to address sustainability challenges and drive positive change effectively (Ghanem & Alamri, 2023).

According to the United Nations Development Program (UNDP), sustainability leadership involves fostering a culture of environmental stewardship, social responsibility, and economic viability within an organisation or institution. It requires a holistic approach integrating sustainability principles into strategic planning, decision-making processes, and day-to-day operations (UNDP, 2019). With the increasing global focus on sustainability, Saudi universities must develop a framework that enables them to lead sustainability initiatives within their campuses and society at large.

Limited research has been conducted on sustainability leadership specifically tailored to Saudi universities. Most existing studies on sustainability in the higher education sector have focussed on Western countries, overlooking the unique cultural, social, and economic aspects of Saudi Arabia. Therefore, this study aims to fill the existing research gap by developing a comprehensive framework for sustainability leadership in Saudi universities.

This study investigated current practice challenges and potential strategies for sustainability leadership in Saudi universities. In doing so, it seeks to guide universities leaders, policymakers, and other stakeholders interested in promoting sustainability within the Saudi Arabia higher education sector. In addition, this research contributes to the broader body of knowledge on sustainability leadership, particularly within the Middle Eastern context.

This Study Aims to Answer The Following Questions

How are Saudi universities currently implementing sustainability leadership practices and initiatives? Do these align with sustainability goals and best practices?

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What obstacles and difficulties do Saudi universities encounter when implementing sustainability initiatives? Considering the social and economic aspects of the country, what strategies and approaches can be employed to establish a comprehensive framework for sustainability leadership in Saudi universities?

SUSTAINABILITY LEADERSHIP DEFINITIONS AND THEORIES

Sustainability stands for the capability of the system or entity to survive and keep their prosperity for the long run. This concept entails multi-faceted aspects such as environmental, economic, and social aspects of livelihood. Sustainability leadership is about influencing and motivating individuals and organizations to apply the sustainable modes and decision-making which can be socially, environmentally, and economically beneficial for the future. Sustainable leaders prefer renewable sources, reduce waste and pollution, and encourage social justice and equality. Moreover, they aim at promoting innovation and partnership for the sustainable challenges and endeavours to be a positive influence on generations to come (Liao, 2022).

Sustainability leadership means taking charge of guiding and implementing sustainable practices and policies. Sustainability leadership is the phenomenon of the leading and implementation of sustainable practices and policies and accepting responsibility to ensure that the system or entity can go on and on in the long term and maintain its well-being. It can be achieved by way of advocating environmental stewardship, ensuring social equity and justice and economic sustainability. Sustainability leadership can be defined as a proactive and strategic way of incorporating sustainability principles in all the activities of an organization, ranging from operational processes to decision making and organizational culture. Sustainability leadership implies an all-embracing awareness of the intrinsic links between environmental, economic, and social issues. It involves not only addressing the current ones, but also envisioning and foreseeing future needs and options. A sustainability leader must create a culture of innovation and permanent improvement that will lead to the development of technologies and practices which are sustainable (Rogers, 2011; Visser & Courtice, 2011).

Sustainability leadership is not only restricted to the organization's boundaries but also engages the stakeholders and partners in the community. It requires to support for policies which guide towards sustainability at local, national, and global scales. These actions could be taking part in public discourse, working together with others, and providing the regulatory framework that will help in sustainable development (Components of Sustainability Assessment, 2013).

Another definition provided by the Sustainability Leadership Institute (2011) states that sustainability leaders as "individuals who are compelled to make a difference by deepening their awareness of themselves in relation to the world around them. In doing so, they adopt new ways of seeing, thinking, and interacting that result in innovative, sustainable solutions".

Successful leadership in sustainability is ensured by a strong commitment to ethical values and clarifying all the stages of the process. Integrity and transparency should be the pillars of the leaders in this field as well as their proper use of this resource and communication. Thereby cultivating an attitude of sustainability adoption among individuals by acting as an exemplary role model and demonstrating the practical advantages of environmental-friendly endeavours, a sustainability leader encourages individuals to follow their example and instils a lasting personal conviction. Sustainability leadership necessitates the franchising of these policies along with their execution, holding the duty of maintenance of the long-term environmentally safe living conditions (Liao, 2022). This entails full consideration of the environmental conservation, economic viability, and social equity. Rogers (2011) suggested that sustainability leadership could be an issue of proactive strategic integration of sustainability principles into every aspect of an organization including management, decision making, and corporate culture. These activities consist of firstly, recognizing the dependent nature of human environment-economic-social factors, and trying to fathom the present-day problems with planning for the future essentials. In addition to definitions, there are also several theories on leadership. Although our aim is not to present a comprehensive analysis of these, they do establish a framework for sustainable leadership. As a result, there are three primary ways that we can comprehend leadership:

The Contingency/Interactionist school of leadership that consider framing context as the critical factor in leadership emerge (De Vries, 2001).

The Trait/Style theorem (McCall & Lombardo, 1983) has forged the way by stressing the traits or methods of a specific type of leader.

The Situational/Context school whose focus is to study and examine the actions of leadership being done due to the external environment (Hersey & Blanchard, 1999).

Goffee and Jones (2009) have proposed further, grounded principles of leadership, which are as follows:

Context determines leadership. To grab the attention of fun lovers, not only you measure the situation but, also contribute to it by the needed resources within reach.

Interpersonal Relations are the raw material for leadership and are the key component for the success of leader. It's a process in which you participate rather than you do for someone else. The simple truth is that the leader cannot function without some people who are ready to follow his/her guidance. This kind of relationship is like any other connection. For its prosperity, care and attention are vital.

Position leadership is not for this way. However, it is not only means those, who are in formal management positions or with a title of manager, who can be a leader. Every one level on the organisational chart has its quota of leaders.

SUSTAINABILITY LEADERSHIP IN HIGHER EDUCATION

Sustainability leadership in the context of higher education refers to the ability of leaders within universities to champion and drive sustainable practices and initiatives that align with the principles of sustainable development (Taşçı & Titrek, 2019). In addition, sustainability leadership refers to universities' role in driving positive change through their teaching, research, operations, and community engagement. It encompasses incorporating sustainable practices within campus operations, instilling sustainability values in students, and preparing them to become responsible global citizens (Smith & Johnson, 2020).

Several scholars have explored the concept of sustainability leadership in higher education. Sterling (2010) argues for a re-visioning of learning and change in higher education to promote sustainability. Leal Filho and Pace (2016) focussed on curriculum greening and integrating sustainability into teaching practices. Wals and Corcoran (2012) emphasised the importance of learning for sustainability in accelerating change. Barth et al. (2017) provided a comprehensive overview of higher education for sustainable development. Lozano et al. (2015) conducted a worldwide survey to assess the commitment and implementation of sustainable development in higher education.

Therefore, sustainability leadership in higher education involves various aspects. Firstly, universities should incorporate sustainable practices into their operations. This includes implementing energy-efficient technologies, reducing waste and carbon emissions, and promoting sustainable transportation options. By adopting sustainable practices, universities can be role models for their students and the wider community (Díez et al., 2018). Secondly, sustainability leadership involves integrating sustainability into the curriculum. This can be achieved by developing sustainability-focused courses, interdisciplinary programmes, and research opportunities (Liao, 2022). By providing students with knowledge and skills related to sustainability, universities can prepare them to address complex sustainability challenges in their future careers. Thirdly, universities can promote sustainability through community engagement. This can involve partnerships with local organisations hosting sustainability events and conferences and engaging in sustainability-focused research projects. By actively involving the community, universities can contribute to positive change beyond their campus boundaries (Faizi & Hussain, 2017).

Sustainability leadership in higher education encompasses incorporating sustainable practices within campus operations, integrating sustainability into the curriculum, and engaging with the community. Through these efforts, universities can drive positive change and prepare students to become responsible global citizens. Further research and collaboration are needed to enhance sustainability leadership in higher education and address the pressing sustainability challenges of our time.

IMPORTANCE OF SUSTAINABILITY LEADERSHIP IN HIGHER EDUCATION

There is a growing recognition of the need for sustainability leadership in HEIs, including those in Saudi Arabia. This is driven by several factors, including the urgent global need for sustainable development and the role of higher education in shaping future leaders and professionals (Salem, 2014).

Additionally, sustainability leadership in higher education institutions can contribute to the achievement of national and international sustainability goals, such as the United Nations Sustainable Development Goals (Taşçı & Titrek, 2019). Furthermore, sustainability leadership in higher education can enhance the reputation and competitiveness of universities, attract talented students and faculty, and foster a culture of sustainability within the institution (Pujol & Tomás, 2020).

Like many other countries, Saudi Arabia faces significant environmental and social challenges that require proactive and sustainable solutions. These challenges include water scarcity, energy dependence on fossil fuels, rapid urbanisation, and a growing population. Moreover, the Saudi Vision 2030 plan emphasises the importance of sustainability and calls for enhancing environmental protection efforts and promoting sustainable development in the country (Anis & Salameh, 2021). In accordance to the plans of Saudi Vision 2030, which will target to achieve sustainability in the whole aspects by the year 2030, the incorporation of sustainability in Higher Education Institution environments coupled with the leadership in supporting sustainability and spearheading of the country's sustainable development pursuits can be very instrumental in achieving the educational plans of Saudi Vision 2030. In this regard, universities, and colleges act as HEIs environments to produce and transfer significant knowledge on sustainability, allowing future change agents to contribute to the development of a sustainable future (Bautista-Puig et al., 2021). The Saudi Vision 2030 recognises the critical role of higher education institutions in promoting sustainable development and therefore calls for leadership of sustainability within these institutions (Jabali et al., 2023). Such acknowledgment emphasizes the necessity of embedding sustainability into the curriculum, research, and campus operations of Saudi Arabian higher education institutions (Blasco et al., 2020). In this way, these organizations can promote economic diversification, environmental conservation, and social development in accordance with the principles of Saudi Vision 2030 (Jabali et al., 2023). One-way HEIs can promote economic diversification is to present programs and courses that are designed for emerging industries and technologies such as renewable energy, sustainable agriculture, and green building. Such programs can also contribute to trained manpower and development of these areas which will in turn lead to diversification of the economy and dependence on oil revenue. Also, sustainability leadership in HEIs can complement environmental regulations by practicing sustainable practices on the campus that include energy saving, waste reduction, and water conservation, to mention but a few (Abubakar et al., 2020). These actions contribute to the environmental footprint of HEIs and set examples for other segments of the society, hence promoting sustainable practices in other sectors. In essence, higher educational institutions (HEIs) as well can help through research and innovation, develop sustainable solutions for environmental challenges and facilitate the adoption of green technologies by industries. In addition, sustainability leadership in HEIs can also cause an indirect influence on the community and society (Mohr & Purcell, 2020). Through active involvement of the local communities, HEIs can work with stakeholder in addressing critical social issues such as poverty reduction, education access, and healthcare which are the social development goals of Vision 2030.

By embracing sustainability leadership, HEIs can make a lasting impact on society. They can solve complex environmental issues such as climate change, resource depletion, and pollution while fostering social equity and economic development. Sustainability leadership in higher education can transform university practises through the reorientation and stewardship of the institutional mission and strengthening the commitment of stakeholders (Smith, 2022).

Moreover, sustainability leadership gives universities a competitive edge by attracting environmentally conscious students seeking educational opportunities aligned with their values. It also enhances institutional reputation as a forward-thinking pioneer committed to creating a better world for present and future generations (Roos et al., 2020).

University leaders and educators can shape future generations of leaders and drive change. By prioritising sustainability, HEIs can transform mindsets, influence behaviours, and develop the knowledge and skills needed for a sustainable future.

Importance Of Developing a Framework for Sustainability Leadership in Saudi Arabia Higher Education

Developing a framework for sustainability leadership in Saudi Arabia's higher education holds immense significance for several reasons. Firstly, Saudi Arabia has made substantial efforts to promote sustainable development and address environmental challenges. By focussing on sustainability leadership in higher education, the country can ensure that future leaders are equipped with the necessary knowledge and skills to drive sustainable practises across various sectors (Bataeineh & Aga, 2022; Chiang et al., 2022).

Secondly, HEIs play a crucial role in shaping the mindset and values of students who will become future decision-makers. Introducing a sustainability leadership framework will enable these institutions to instil

principles of environmental responsibility, social equity, and economic viability within their curricula and campus operations. Ultimately, this framework will build a sustainable and resilient society that aligns with Saudi Arabia's 2030 Vision. These goals include diversifying the economy, reducing dependence on oil, and implementing sustainable practices in various sectors, including higher education.

Thirdly, sustainability leadership in HEIs can contribute to developing a globally competitive workforce with the knowledge and skills necessary to tackle complex sustainability issues and contribute to achieving the United Nations Sustainable Development Goals (Hopkins et al., 2011). Furthermore, developing a framework for sustainability leadership in Saudi Arabia's higher education can help address the gap in the existing literature on this topic.

While existing studies have explored aspects of sustainability in higher education, a comprehensive framework specifically tailored to the Saudi Arabia context is needed. Therefore, a framework that considers the unique cultural and institutional factors in Saudi Arabia's higher education is needed to guide the effective implementation of sustainability leadership.

To develop a practical framework, it is crucial to consider the existing literature on sustainability leadership in higher education. A systematic literature review can comprehensively overview critical concepts, frameworks, and practises related to sustainability leadership. Additionally, assessing the current state of sustainability in Saudi Arabia higher education institutions can provide insights into areas that need improvement and inform the development of the framework (Akbar et al., 2023). This can contribute to achieving Saudi Arabia's national development vision, such as Vision 2030 (Alsubaie & Jones, 2017).

REVIEW OF THE EXISTING SUSTAINABILITY LEADERSHIP FRAMEWORK

It is essential to review existing frameworks to develop a framework for sustainability leadership in Saudi higher education. Several models define the competencies and skills required to drive sustainability and offer helpful guidance.

The 5Rs Sustainability Leadership Framework offers a powerful way to promote sustainability. By adhering to its principles, individuals and organisations can make a significant difference in creating a sustainable world. This comprehensive approach includes recording, reporting, Reducing, Recycling, and Reusing as critical actions that reduce environmental impact and improve practices in all aspects of our lives (Hopkins et al., 2011; Meier, 2023; Van Norren & Beehner, 2023).

For example, the Sustainability Leadership Competency Model outlines five key competencies: systems thinking, strategic orientation, collaboration, continuous learning, and integrity. Each includes multiple skills that leaders need to acquire, such as critical thinking, visioning, relationship building, and moral reasoning (Arizona State University, 2018; Li & Zhang, 2021; Iqbal et al., 2020; Van Norren & Beehner, 2021; Waddock, 2011)

Another well-known model is the Framework for Strategic Sustainable Development, which focuses on five sustainability principles: holistic perspective, intergenerational fairness, precautionary approach, efficiency, and sufficiency. Leaders who understand these principles will be better able to guide their institutions towards sustainability (Broman & Robèrt, 2015).

The Leadership Sustainability Aptitude Model proposes four leadership qualities: envisioning, enabling, empowering, and exemplifying. Envisioning requires articulating a sustainability vision and goals and enabling means ensuring resources and removing obstacles. Empowerment refers to engaging and motivating stakeholders. Exemplifying means "walking the talk" through sustainable behaviours and decisions (Visser & Courtice, 2011).

The Sustainability Leadership Competency Model outlines six critical roles for leaders: integrator, influencer, visionary, enabler, implementer, and learner (Metcalf & Benn, 2012). These roles encompass various skills and functions that leaders need to acquire, such as integrating sustainability across the institution, influencing, and motivating others, articulating a vision, enabling action, overseeing the implementation of solutions, and engaging in continuous learning (Metcalf & Benn, 2012).

In summary, the existing implementation frameworks point to several important leadership attributes, competencies, qualities, principles, and roles that could inform the development of a tailored model for Saudi higher education. The specific cultural context and sustainability priorities of Saudi Arabia will shape how these components are expressed in a new leadership framework. With a framework that resonates in the Saudi context, HEIs will be better equipped to develop the leaders to guide them towards a sustainable future.

RESEARCH METHODOLOGY

A comprehensive search of academic databases such as Scopus, Web of Science, ERIC, and Google Scholar was conducted to conduct the systematic review. This search identified relevant studies on implementing sustainability leadership in Saudi Arabia's higher education. The inclusion criteria for selecting studies included: 1. Articles published in English between 2010 and 2023. 2. Studies focusing on sustainability leadership or related concepts such as environmental leadership and sustainable ecological leadership. 3. Studies that specifically examined the implementation of sustainability leadership in Saudi Arabia HEIs. The search terms used included "sustainability leadership," "Saudi Arabian universities," "implementation," and "higher education," and variations of these terms (Figure 1).

The search process involved assessing the relevance of the identified articles by screening their titles and abstracts. The selected articles were then reviewed in full to extract relevant information on the current practises of sustainability leadership in Saudi universities. They discuss topics such as campus environmental management practices (Abubakar et al., 2020), students' perceptions of campus sustainability (Abubakar et al., 2016; Jamal et al., 2023), An analysis of sustainability transformation across universities (Sharabi et al., 2023), implementation of sustainable development goals at the university level (Albareda-Tiana et al., 2018), assessment of campus sustainability (Abubakar et al., 2016), sustainability assessment of HEIs (Alshuwaikhat et al., 2016), women's leadership in higher education (Abalkhail, 2017), student engagement with sustainability (Chaplin & Wyton, 2014), dimensions of transformational leadership in public universities (Alessa, 2021), and cultural factors influencing leadership perceptions and practices (Alsuood & Youde, 2018). By reviewing these articles, a comprehensive understanding of sustainability leadership practices in Saudi universities can be developed. This information can be used to identify joint initiatives and approaches that many universities in Saudi Arabia have adopted to promote sustainability leadership. It can also help identify gaps and areas for improvement in implementing sustainability leadership in HEIs.

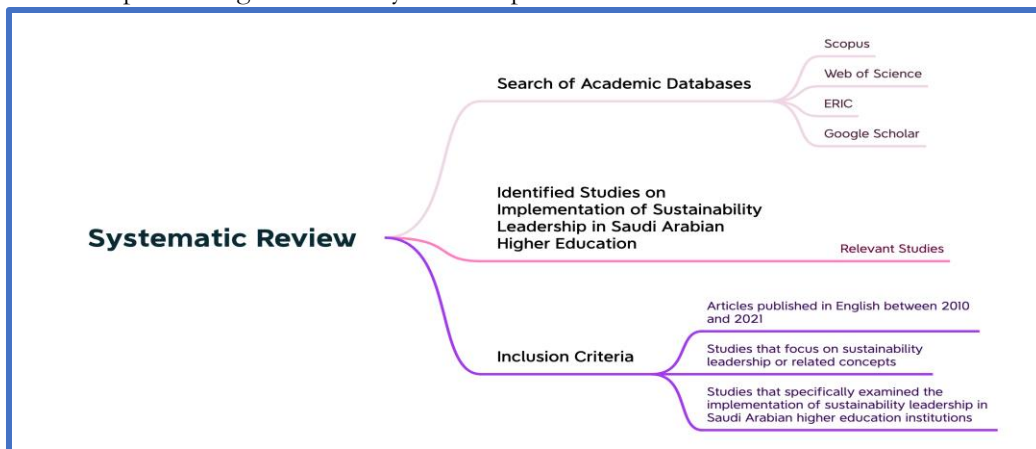


Figure (1) Research Methodology

FINDINGS AND DISCUSSION

A systematic review of the implementation of sustainability leadership in Saudi Arabia universities revealed the following key findings:

The current implementation of sustainability leadership in Saudi Arabia's higher education

The current practices and initiatives related to sustainability leadership in Saudi universities encompass a range of efforts to integrate sustainability into various aspects of higher education. These initiatives align with global sustainability goals and best practices by addressing sustainability's social, environmental, and economic dimensions. Several studies have provided insights into specific practices and initiatives in Saudi universities, shedding light on their alignment with global sustainability goals and best practices.

The current practises of sustainability leadership in Saudi universities vary from one institution to another. However, there are several joint initiatives and approaches that many universities in Saudi Arabia have adopted to promote sustainability leadership. For example, Prince Sultan University (PSU) in Saudi Arabia has initiated sustainability projects that draw on the UN's Sustainable Development Goals (SDGs), Saudi Arabia's Vision

2030, and the institution's ambitions (Times Higher Education, 2022). This demonstrates the growing commitment to sustainability among some HEIs in the country. In addition, some universities in Saudi Arabia have already initiated the implementation of sustainability leadership in various manners. For instance, King Abdullah University for Science and Technology has set up the Sustainability Office, which oversees design and implementation of sustainable practices throughout the campus. This comprises programs like energy savings, waste control, and encouraging sustainable transportation alternatives (Alshuwaikhat et al., 2016). In the same vein, Princess Nourah bint Abdulrahman University has introduced an all-encompassing sustainability programme that centres on embedding sustainable practices in teaching, research, and campus operations. The university has sustainability goals and targets and periodically measures the success in achieving them. Another good example is the King Fahd University of Petroleum and Minerals, which established the Centre for Sustainable Development to enhance sustainability research and education. A key actor for this centre is to work with many stakeholders developing sustainable solutions and practices in energy and environmental sectors (King Fahd University of Petroleum and Minerals, 2022). Furthermore, other universities in Saudi Arabia also move towards sustainability governance (Abubakar et al., 2020). For example, Umm Al-Qura University has introduced green solutions including solar panels, waste management and recycling program, and sustainable forms of transportation within the campus (Alshuwaikhat et al., 2016). In addition, initiatives such as the “Green Campus” program have been implemented by universities as Imam Abdulrahman Bin Faisal University, which focuses on promoting green and sustainable practices within the campus environment. King Saud University has integrated sustainability into their curriculum, offering courses and programs on environmental sustainability, renewable energy, and sustainable development (Abubakar et al., 2020). In brief, these examples highlight that the Saudi universities appreciate the significance of sustainability leadership and are making initiatives to incorporate sustainable moves into operations, curriculum, and campus culture of the institutions (Alsharif et al., 2020). In addition, these universities are not just practicing sustainability within their campuses but also reaching out to the community and advocating for sustainability beyond their borders. To sum up, Saudi universities have started introducing sustainability leadership by embedding sustainable practices in their programs, curriculum, and overall campus activity.

Based on previous studies, the figure below (Figure 2) illustrates the current achievements and challenges of sustainability leadership in Saudi Arabia's higher education.

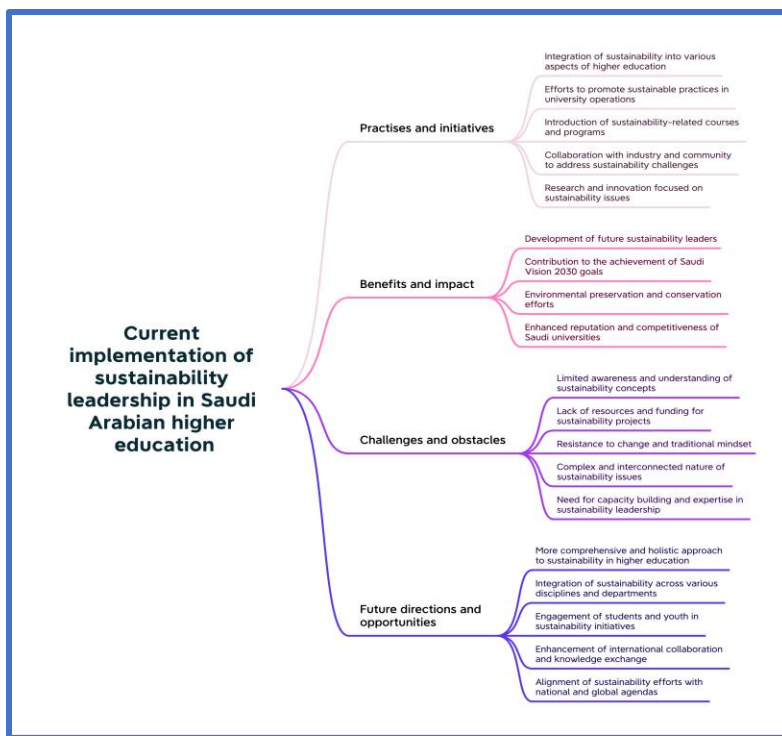


Figure (2) The implementation of sustainability leadership in Saudi universities

A systematic review of sustainability leadership in Saudi Arabia's higher education revealed the following key findings and insights:

Awareness: According to Saudi Vision 2030, educational goals are being set to bridge the gap between higher education and the job market, emphasising sustainable development (Alsaati et al., 2020). Sixty-one per cent of Saudi universities have a well-defined sustainability policy, while 33.3% do not (Alshuwaikhat et al., 2016).

Growing Recognition of The Importance of Sustainability Leadership: There is a growing recognition among universities in Saudi Arabia of the importance of sustainability leadership in addressing environmental and social challenges (Alsaati et al., 2020). This recognition is a crucial first step towards integrating sustainability principles into institutional policies and practices.

Sustainability Committees: Many universities have established dedicated sustainability committees or departments to oversee and coordinate sustainability initiatives. These committees are responsible for developing and implementing sustainability strategies, policies, and programmes across various campus operations (Alsaati et al., 2020).

Curriculum Integration: Saudi universities increasingly integrate sustainability-related topics into their academic programmes. This includes offering courses and research opportunities related to sustainability, environmental sciences, renewable energy, and sustainable development. By incorporating sustainability into the curriculum, universities aim to create a generation of well-informed graduates with the knowledge and skills to address sustainability challenges. Abubakar et al. (2020) indicated a positive picture towards incorporating sustainability topics into the Saudi Arabia ESL curriculum.

Energy Efficiency and Conservation: Saudi universities have been actively implementing energy-saving measures to reduce their carbon footprint. This includes adopting energy-efficient technologies, optimising building design and promoting awareness among staff and students regarding energy conservation practices (Alhazmi et al., 2021; Elnabawi, 2021; Felimban et al., 2019; Mohammed & Budaiwi, 2013).

Waste Management and Recycling: Many universities in Saudi Arabia have established waste management systems that prioritise recycling and waste reduction. They encourage recycling initiatives, implement waste segregation practises, and promote responsible disposal (Mohammed & Budaiwi, 2013).

Green Campus Initiatives: Saudi universities increasingly focus on creating sustainable and environmentally friendly campuses. This includes initiatives such as green building design, landscaping with native and drought-resistant plants, and promoting sustainable transportation options such as cycling or electric vehicles (Abubakar et al., 2016; Alsharif et al., 2020).

Research And Innovation: Saudi universities are actively engaged in research and innovation related to sustainability. They collaborate with industry partners and governmental organisations to develop sustainable technologies, renewable energy solutions, and sustainable development strategies that contribute to Saudi Arabia's sustainability goals (Abubakar et al., 2016).

These are just a few examples of current practices in sustainability leadership in Saudi universities. Each university may have unique initiatives and priorities based on its context and resources.

However, in Saudi Arabia's higher education sector, sustainability is currently characterised by progress and challenges. While there is a developing recognition of the importance of sustainability, there remains a need for a more comprehensive and integrated approach.

Currently, sustainability initiatives are often fragmented and need more coordination across institutions. Although some universities have established sustainability departments or centres, their impact is limited due to inadequate resources and support (Abubakar et al., 2020). For instance, Abubakar et al. (2016) assessed campus sustainability at the University of Dammam, Saudi Arabia. They found that while there were some sustainable landscaping and waste recycling initiatives related to transportation, water and energy conservation were limited. This indicates a potential improvement in aligning with best practices in sustainability leadership, particularly in resource conservation and energy efficiency.

Additionally, Alshuwaikhat et al. (2016) conducted a sustainability assessment of HEIs in Saudi Arabia, focusing on campus operations, management and community, research and scholarship, teaching and curriculum, and

financial management. According to the study, sustainability must be further integrated into teaching, research, and campus operations to align with global sustainability goals and best practices.

A survey by Alshuwaikhat et al. (2016) revealed that offering specific courses in Saudi universities could be more robust and sustainable. Most existing studies have described the sustainability assessments of universities from a qualitative perspective, indicating a need for more quantitative and comprehensive analysis (Salem, 2014).

Furthermore, Alsaati et al. (2020) emphasised the importance of promoting sustainability awareness among university students in the Eastern Province of Saudi Arabia. The study recommended actions such as offering mandatory sustainability courses, supporting students' activities to promote sustainable behaviour, and implementing measures for resource conservation to align with global sustainability goals and best practices. Integrating sustainability concepts into the curriculum and promoting research in this direction is lacking in most Saudi universities.

Additionally, the study conducted by Alshuwaikhat et al. (2016) highlighted the need for sustainability-related projects and financial management practices in Saudi universities. Moreover, the review identified the "Saudi Green Initiative" as one of the multi-dimensional strategies launched by the Kingdom of Saudi Arabia to promote sustainable development goals in the country (Jamal et al., 2023). Therefore, it is evident that there is a need to improve and enhance sustainability leadership in Saudi Arabia's higher education sector.

In addition, the study on sustainability awareness among higher education faculty members in Saudi Arabia found a need for a more definitive understanding of sustainability in higher education (Salem, 2014). This lack of awareness and understanding regarding sustainability in Saudi higher education highlights the urgent need for more vital sustainability leadership.

These studies collectively demonstrate that while Saudi universities have made strides in incorporating sustainability into higher education, there are opportunities for further alignment with global sustainability goals and best practices. By enhancing initiatives related to resource conservation, energy efficiency, and sustainability education, Saudi universities can further contribute to advancing sustainable development in alignment with global best practices.

Critical Factors for The Development of A Saudi Sustainability Leadership Framework

Based on the systematic review, it is evident that sustainability leadership in Saudi Arabia's higher education sector is still in its nascent stages. Although some universities in Saudi Arabia have taken initial steps towards incorporating sustainability into their operations, curriculum, and research, there is still a need for more substantial and comprehensive sustainability leadership. This includes the development of clear sustainability strategies and goals, allocating resources and support for sustainability initiatives, and engaging all stakeholders, including students, faculty, staff, and the wider community. Furthermore, there is a need for sustainability leadership that goes beyond superficial measures and embraces a deeper understanding of the principles and practices of sustainable development, which is crucial for Saudi Arabia.

Several strategies can be employed to improve sustainability leadership in Saudi higher education. The figure below (Figure 3) outlines the key factors to consider when developing a comprehensive framework for sustainability leadership in Saudi universities. The framework should encompass goal setting, cultural, social, economic, and environmental factors, and technology integration. Collaboration and partnerships, education and training, policy and governance, and measurement and reporting are vital aspects of the framework.



(Figure 3) Factors for the Development of a Saudi Sustainability Leadership Framework

Here are some strategies and approaches that can be adopted:

Integration Of Sustainable Development Goals (SDGs) And Vision 2030: The Saudi sustainability leadership framework should align with the UN's Sustainable Development Goals and Saudi Arabia's Vision 2030, ensuring that the model is in harmony with global and national sustainability objectives (Alghamdi & El-Hassan, 2020; Alshuwaikhat & Mohammed, 2017)

Interdisciplinary Approach: Emphasising an interdisciplinary approach to sustainability education and research can enhance the effectiveness of the leadership model, as it allows for a comprehensive understanding of sustainability issues and solutions (Alshuwaikhat et al., 2016).

Stakeholder Involvement: Active involvement and empowerment of relevant stakeholders at all levels are crucial for the success of the sustainability leadership model. This includes engaging diverse professionals, scientists and educators to drive sustainable development (Akadiri et al., 2012; Alshuwaikhat & Mohammed, 2017).

Resource Conservation and Energy Efficiency: The framework should prioritise resource conservation, energy efficiency, and sustainable building design principles to address the environmental impact of construction and infrastructure development (Ahmed et al., 2019; Akbar et al., 2023; Alasmari et al., 2023).

Gender Empowerment and Workforce Participation: Promoting women's leadership and increasing their participation in the workforce is essential for sustainable development and economic empowerment in Saudi Arabia (Mandeli, 2019; Zalhaf & Ibrahim, 2023).

Governance And Policy Support: Effective governance and supportive policies are critical for advancing sustainable development and ensuring the success of sustainability initiatives (Ghabban et al., 2019).

Research And Innovation: Encouraging research and innovation related to sustainability, renewable energy solutions, and sustainable technologies through collaboration with industry partners and governmental organisations can drive the development of the leadership model (Ebaid, 2021; Hashmi et al., 2014; Salam & Khan, 2017).

Educational Reforms: Educational reforms integrating sustainability principles into the curriculum and promoting sustainability awareness among students are essential for nurturing future leaders committed to sustainable development (Alshuwaikhat et al., 2016; Chaaben et al., 2022).

Green Economy and Corporate Responsibility: Fostering a green economy, promoting corporate social responsibility, and encouraging sustainability disclosure among companies are integral to the sustainability leadership model (Alhazmi et al., 2021; Alotaibi, 2020).

Communication and Leadership Styles: Effective communication, leadership styles, and coordination are vital in managing sustainability challenges, including the transition towards sustainable energy production and environmental management (Rahman et al., 2020).

In summary, developing a Saudi sustainability leadership framework requires a multifaceted approach integrating global sustainability goals, interdisciplinary education, stakeholder involvement, resource

conservation, gender empowerment, governance support, research and innovation, educational reforms, green economy promotion, and effective communication and leadership styles. Nevertheless, enforcing behaviours is an intricate undertaking and challenging to accomplish without certain essential prerequisites. The successful execution of sustainability policies relies heavily on the management's eagerness and dedication to participate in inventive endeavours (Avila et al., 2017). The importance of freedom to communicate critical views is emphasised as one of the few essential requirements for the tertiary sector to have a positive impact on individuals and society. This is in addition to the autonomy to select research areas and access fulfilling work prospects (Jakubik, 2022). The lack of willingness and societal commitment can be attributed to the perception that the investments needed for implementing sustainable policies are typically seen as a hindrance, while the advantages are disregarded (Avila et al., 2017).

However, sustainable leadership in leaders with a long-term vision relies heavily on their ability to utilise the systems thinking. The emergence of innovation within the institution necessitates the support of the entire organisational community. The educators' ability to foster a culture of sustainability in higher education institutions is contingent upon their capability to bridge disciplinary boundaries and foster collaboration to cultivate an organisational culture that prioritises sustainability (Zahid et al., 2020). This process frequently necessitates a significant investment of time and effort. Colleges and universities must comply with external influences, including stakeholders. The complexity of the situation arises from the fact that universities are required to adhere to two distinct approaches: market logic, which entails being responsive to external pressures such as competition, accreditation, and funding, and state logic, which involves being accountable to society and generating public value for current and future students as well as other stakeholders (Zahid et al., 2020).

Examining The Long-Term Impact of Sustainability Leadership Framework

When examining the long-term impact of sustainability leadership, it is essential to consider how it influences not only the organization itself but also its stakeholders and the broader community. A sustainable leadership framework can foster innovation, drive operational efficiencies, and enhance the organization's reputation, thereby positioning it for long-term success.

Engaging Stakeholders in Sustainability Process in Higher Education Institutions

As Alasmari et al., (2020) suggest, involving stakeholders in the sustainability process is important for universities to guarantee the relevance and practicality of their sustainable development activities. By soliciting input from the stakeholders, we can end up with very useful information and outlooks that would have been overlooked. Additionally, participating stakeholders in the research process contribute to the identification of challenges and opportunities for implementation, making sure that the framework is practical and implementable.

Stakeholders, i.e., students, faculty, staff, administrators, community members, and industry partners, are an integral part of shaping and implementing sustainability initiatives in HEIs. Parties in HEIs are crucial in making sustainability initiatives to move forward. These people and communities offer various views, knowledge, and assets that will be essential for the success of sustainable development initiatives. Students, as prime stakeholders, produce new ideas and enthusiasm into environmental and social issues, making the institution to promote more sustainable practices. By having specialised knowledge in different aspects, the faculty members will include the sustainability practices into their teachings and research, which will influence the upcoming professionals to be environmentally cognitive ((Hugé et al., 2016)

Stakeholders' involvement in the sustainability process can be achieved using several strategies (Alasmari et al., 2023). A good practice is to create standard communication channels and venues for stakeholders to bring in suggestions, exchange ideas, and ask questions. This can consist of regular meetings, forums, surveys, and online platforms among others where stakeholders can air out their opinions and fears towards sustainable initiatives. The other strategy is to engage stakeholders in the decision-making process. Stakeholder participation can be achieved through stakeholder representation on sustainability committees or task forces, where they are actively involved in the planning, implementation, and monitoring of sustainability initiatives. Moreover, stakeholders can be included in sustainability efforts through education and awareness program. Such campaigns can educate stakeholders about the need for sustainability and give them power to do something. As an illustration, workshops, seminars, and training programs can be conducted to inform stakeholders about the issues related to sustainability and to make them capable to participate in sustainable development initiatives. Therefore, it is necessary to establish a culture of teamwork and inclusivity, where everyone is appreciated, and their view is

regarded. Such can be obtained through promotion of an open and transparent atmosphere where stakeholders are free to present their viewpoints and suggestions. In conclusion, embedding stakeholders in the sustainability process in HEIs necessitates a systematic and comprehensive exercise (Adams et al., 2018).

Sustainability in higher education institutions is also contributed greatly by staff members, administrators, and community members. Their participation in decision-making procedures, resources allocation and operational activities has direct influence on the sustainability management initiatives of the institution. In addition, industry partners provide industry experience, financing, and collaborations, which assist in closing the theoretical and practical component of sustainability practices.

Stakeholders' participation in the sustainability process creates a feeling of responsibility and ownership within the organization, which results in more productive and creative solutions. Engaging these diverse stakeholders will allow higher education institutions to utilize their combined knowledge and power to realise a more sustainable future for the institution and the community at large. To engage stakeholders in the sustainability process, higher education institutions can employ various strategies:

Subset may be described as a data stored in a table row. Organize frequent meetings and workshops with stakeholders to talk about sustainability objectives, achievements, and difficulties.

Establish avenues for free and open discussions, such as the internet forums or suggestion boxes, where feedback and ideas from the stakeholders can be gathered.

Work with stakeholders in sustainability initiatives letting them engage actively and be part of the decision-making processes.

Create possibilities for teaching, educating and orientation activities in the field of sustainability, which will make the stakeholders knowledgeable and powerful to participate in the process.

Form alliances and associations with third-party bodies, for example, NGOs and local public administrations, which will not only widen the reach but also multiply the effects of the green efforts.

Appreciate and accept stakeholder participation in a sustainability recognizing the efforts and contributions to sustainable development which creates sustainability culture in the whole university. Involving stakeholders in the sustainability process enables higher education institutions to develop relevant, influential, and sustainable framework and strategies. This strategy will also create connecting and trust.

Performance Indicators for Measuring the Effectiveness of The Developed Framework Over Time

To evaluate the long-term impact of the Sustainability Leadership Framework, it is important to overlook immediate results and focus on its reflection in the organization's culture, values, and general response. This task is to assess the impact of the framework on decision-making, stakeholders' relationships, and the organization's ability to deal with complex sustainability issues over time. Additionally, there is a need for an analysis of performance measures and evaluation measures that are useful in assessing the efficiency of the framework in achieving desired outcomes (Amini & Bienstock, 2014).

Specific performance indicators that can be used to measure the effectiveness of the Sustainability Leadership Framework over time include:

Lessening of carbon emissions: With time, this indicator shows how the organization has been able to manage reducing its greenhouse gas emissions (Visser & Courtice, 2011).

Increase in renewable energy usage: This measure evaluates the organization's use of sustainable energy sources and shifts away from the reliance on fossil fuels. Reference (Joung et al., 2013)

Sustainability reporting: This measure assesses the organization's transparency and accountability in showing its sustainability practices and performance. (Liu, 2014)

Employee engagement: This indicator measures the degree of employee participation and sustainability initiatives and signs the level of embedding sustainability into organisational culture (Galpin & Whittington, 2012).

Stakeholder satisfaction: This indicator evaluates the satisfaction of key stakeholders, including customers, communities, and shareholders, with the organization sustainability achievement and initiatives (Filho et al., 2020). The tools to be used in the evaluation of the effectiveness of the Sustainability Leadership Framework are surveys, interviews, and focus groups of major stakeholders to get their feedback concerning the influence of the framework on the organization and its sustainability practices. These methods could also give qualitative data about how the organization perceives, understands, and adopts sustainability principles. Furthermore,

quantitative data like energy consumption, waste reduction, and financial savings can be gathered and analyzed to evaluate the actual results of the framework. In summary, the impact assessment should focus on the influence of the Sustainability Leadership Framework on organizational behavior and decision-making, stakeholder relationships, and the organization's overall sustainability performance in the long-term.

CONCLUSION

In conclusion, the systematic review highlights the importance of sustainability leadership in higher education in Saudi Arabia. It is evident that while there have been efforts to integrate sustainability principles into Saudi universities, a comprehensive and holistic approach is still needed. With a transparent model for implementation, commitment from university leadership, and a willingness to adapt programmes to fit within cultural contexts, Saudi Arabia's higher education institutions can make considerable strides in sustainability leadership.

HEIs must take the lead in promoting a shift in culture and creating educational programmes that are rooted on the principles of sustainability. The process begins at the campus, where the cultural values and attitudes of the university staff play a crucial role in shaping the metamorphosis of alumni. To do this, it is necessary to employ effective and customised communication strategies that cater to various target groups. Education is fundamentally important for achieving all the Sustainable Development Goals (SDGs) and plays a crucial role in shaping a society that is committed to many components of the SDGs, such as global citizenship, gender equality, and respect for human rights. To achieve the desired societal changes, it is necessary to address various obstacles and difficulties within higher education institutions, such as curriculum design and adherence to ethical principles. Additionally, external factors like diverse audiences, political climate, and stakeholders' interests must also be taken into consideration. Overcoming these challenges is crucial for the realisation of our envisioned world.

Success will not happen overnight, but by starting with minor changes, building understanding, and expanding reach over time, universities across the Kingdom can transform thinking and shape the next generation of leaders. The future is unwritten, but with vision and perseverance, Saudi youth will gain the knowledge, skills, and motivation to drive sustainable development at home and around the globe. The time for action is now.

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