Advancing Sustainable Development through Performance Appraisal Systems: Critiques, Innovations and Future Trends

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Abstract: - The objective of this research work is to examine the link between performance appraisal systems and sustainable development in the specific setting of Saudi Arabian institutions. The study aims to examine three primary research objectives: evaluating the current state of performance appraisal systems, investigating the incorporation of sustainability measures, and suggesting approaches to improve sustainable development via appraisal systems. In order to achieve these aims, a thorough survey was conducted among the teachers of universities in Saudi Arabia. The study gathered data pertaining to several facets of performance appraisal, the integration of sustainability, and individuals' opinions of efficacy. The results of the study indicate that the overall perception of evaluation systems was favorable, however, there were some reservations expressed addressing issues of openness and clarity. Promisingly, there has been a growing trend of incorporating sustainability measures, underscoring the significance of sustainability inside academic institutions. The study provides evidence-based suggestions for universities to enhance their adherence to sustainability standards. This study makes a valuable contribution to the ongoing discussion around performance rating systems within the context of higher education. It sheds light on their potential to serve as catalysts for promoting sustainable development.

Key-Words: - Performance appraisal systems, sustainable development, sustainability metrics, integration, transparency, effectiveness.

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1 Introduction

In a time when people are worried about the environment, social injustice, and economic uncertainty, the goal of sustainable development has become more important than ever before on a global scale. Authorities, communities, and individuals are all starting to realize how important it is to deal with these linked problems and switch to more sustainable ways of doing things that will help both the present and future generations. Because of this, researchers and policymakers are now talking a lot about how to apply sustainable development concepts to different parts of society. Putting in place effective performance review systems is a key way for companies to promote sustainable development, [1]. Performance appraisal systems are often used to measure how well employees do their jobs and help the organization succeed. They can also be a useful way to match the goals of an organization with the goals of sustainable development. By evaluating and paying individuals and teams that actively add to sustainable practices, these systems could help people be more aware of the environment, be more socially responsible, and keep the economy stable, [2].

1.1 Critiques of Traditional Performance Appraisal Systems

However, traditional performance appraisal systems have faced substantial critiques regarding their efficacy in advancing sustainable development goals. The predominant focus on short-term financial outcomes and individualistic performance metrics within these systems often neglect the broader impacts of an organization's actions on the environment and society. Furthermore, the emphasis on competition and individual recognition can inadvertently discourage collaboration and inhibit the collective effort needed to address complex sustainability challenges, [3].

Research has shown that traditional appraisal systems tend to prioritize quantitative metrics, such as financial profits or productivity gains, over qualitative indicators related to environmental conservation and social equity, [4]. This narrow focus not only undermines long-term sustainability but can also lead to negative consequences such as "greenwashing," where organizations falsely portray themselves as environmentally responsible without making substantial changes. Therefore, a critical examination of these conventional systems is imperative to identify their shortcomings and develop innovative approaches that drive sustainable development.

1.2 Innovations and Emerging Trends

To bridge the gap between conventional performance appraisal systems and the imperatives of sustainable development, numerous innovative approaches have emerged. These approaches encompass a shift towards holistic assessment frameworks that consider not only individual performance but also collective efforts toward sustainability, [5]. For example, some institutions are using balanced evaluations to measure success in a way that takes into account environmental, social, and economic factors. These models with many parts push workers to do things that are good for the environment and help build a culture of teamwork and shared responsibility.

Also, improvements in technology make it possible to make success evaluation methods for sustainable development work better. Digital platforms, data analytics, and artificial intelligence can make it possible to keep an eye on activities related to sustainability in real-time, [6]. This makes it easier to make accurate assessments and plan actions that will have the most impact. These technology tools can also encourage openness, responsibility, and public involvement, which can strengthen an organization's dedication to sustainable practices.

1.3 Sustainable Development in the Saudi Arabian Context

The movement toward sustainable development has gotten a lot of steam in Saudi Arabian universities, [7]. Saudi Arabia, like many other countries, knows that it is urgent to deal with natural, social, and economic problems while also trying to improve schooling. In the world of higher education, performance evaluation methods are a big part of how universities go and what they do. This study looks at how sustainable development and performance evaluation methods work together in Saudi Arabian universities, focusing on criticisms, new ideas, and trends for the future.

1.4 Critiques of Traditional Performance Appraisal Systems in Saudi Arabian Universities

Conventional appraisal methods in Saudi Arabian universities, like those in other places, have been criticized for not doing enough to help promote sustainable development, [8], [9]. In the past, academic results, research activity, and student registration have been the most important success markers for these systems. Even though these are important measures, they often get in the way of more important things like caring for the earth and getting involved in the community. Critics say that focusing only on formal academic measures could make teachers and staff less likely to get involved in sustainable projects. Also, universities may have trouble becoming responsible, lasting organizations if they don't get good feedback on their social duty, ethical behavior, and community service, [10].

1.5 Innovations in Saudi Arabian University Performance Appraisal Systems

In addressing these criticisms, universities in Saudi Arabia are starting to change the way they evaluate teachers' work. One big change is that environmental factors are now part of the review process. Sustainability projects and getting involved in the community are becoming more and more important for universities to include in teacher and staff job reviews, [7].

Also, some Saudi Arabian universities are starting to look at performance reviews in a more complete way. They are using a method called "balanced scorecard," which includes not only academic and research measures but also indicators for environmental and community effects. With this idea, the university's goals will be more in line with the larger goals of sustainable development. This will help build a mindset of social and environmental duty.

2 Problem Statement

The significance of sustainable development has been more prominent in Saudi Arabia, namely in the city of Jeddah, due to the growing environmental, economic, and social issues. Sustainable development is a prominent issue within the academic sphere of universities. These institutions are crucial in molding future leaders who can significantly contribute to sustainable development. Within this particular context, the significance of performance appraisal systems is considerable, as they serve as essential instruments for assessing and overseeing the work of university educators. These individuals occupy a crucial position in imparting sustainability concepts to their pupils. Nevertheless, there needs to be more alignment of these performance rating methods with the broader objectives of sustainable development. These approaches often precede traditional academic metrics, possibly overlooking the assessment of teachers' contributions to sustainability education and practices. The mismatch raised questions about the efficacy of these systems in aiding the achievement of the national Vision 2030 goals, which comprise the diversification of the economy, protection of the environment, and progress of society.

The inspection of the efficiency and usefulness of conventional performance assessment methods in evaluating and improving the contributions of university teachers to sustainable development is now underway. The aforementioned methods may exhibit a need for adaptability, which is essential for assessing the ever-changing and complex characteristics of sustainability teaching and research within academic environments. Furthermore, the objective of this research is to evaluate the degree of innovation and adaptability seen in performance rating systems used in institutions. In light of changing sustainability concerns and emerging educational techniques, it may be necessary for institutions in Jeddah to modify their assessment processes.

It is worth mentioning that there is a limited amount of research available on the topic of aligning performance assessment systems with sustainable development in the academic setting of Saudi Arabia, particularly in the city of Jeddah. It is crucial to address this research vacuum to generate suggestions and insights that are tailored to the unique environment, enabling university educators in Saudi Arabia to make meaningful contributions to sustainable growth within higher education institutions. Resolving these concerns is crucial in determining the trajectory of sustainability teaching and implementation within the nation's higher education institutions.

3 Rationale of the Study

This study is motivated by the pressing need to align performance appraisal systems within Saudi Arabian universities with the principles of sustainable development. Several compelling reasons underscore the significance and relevance of this research endeavor. Firstly, there is a noticeable gap in the existing academic literature pertaining to the integration of sustainability principles into performance appraisal systems, particularly within the unique context of Saudi Arabian higher education. In its Vision 2030 plan, Saudi Arabia puts a lot of focus on sustainability. Because of this, it is important to look into how colleges can help the country reach its sustainability goals. This study tries to fill in this gap by looking at how performance appraisal methods and sustainability work in Saudi Arabian universities. Second, the study shows how important higher education institutions are to making the world more sustainable. By teaching the next generation of leaders and doing study, colleges have the chance to show how to live in a sustainable way and make good changes in society. Effective performance evaluation methods can encourage teachers and staff to get involved in sustainable projects, which can help create a mindset of responsible behavior and care for the environment, [11], [12]. For Saudi Arabian colleges to be more successful in meeting national and global sustainability goals, they need to know how these systems can be developed and put into place to match sustainability goals.

Additionally, investing in sustainable infrastructure, like energy-efficient buildings and green energy sources, are important part of a university's trip toward sustainability. Integrating sustainability factors into performance evaluation systems can give colleges a reason to put these investments at the top of their list and encourage long-term planning for sustainability. So, the goal of this study is to shed light on how performance evaluation systems can urge universities to adopt

sustainable infrastructure, which will help them leave less of an impact on the environment.

The study also acknowledges how important it is for stakeholders to be involved in creating environmental efforts. By including students, local communities, and business partners in the performance review process, colleges can make sure that their efforts to be more sustainable match the needs and demands of their larger community. This all-inclusive method can make sustainable policies more open and accountable. The goal of the study is to find out how successful public involvement can be built into performance evaluation methods to make them more relevant and useful.

4 Theoretical Framework

This study uses a multidisciplinary theoretical framework that combines ideas from organizational behavior, sustainability management, and performance appraisal literature to give a full picture of the relationship between performance appraisal systems and sustainable development in Saudi Arabian universities. The study is based on the following theoretical points of view:

The study starts by building its theoretical framework on both old and new ideas of performance evaluation. The works of thinkers, [13], show how performance evaluation methods have changed over time. Also, modern theories like the goal-setting theory, [13], and the social cognitive theory, [14], give ideas about how performance rating can drive behavior and affect how well people and groups do. These ideas help explain how performance evaluation systems can change the way that teachers and staff act in universities.

The sustainability part of the theoretical framework is based on important works like the Brundtland Report and the Triple Bottom Line framework, [15]. These ideas show how environmental, social, and economic sustainability are all tied together. They also lay the groundwork for understanding the bigger picture of how Saudi Arabian colleges work. By lining up with theories of sustainability, the study looks at how universities can help achieve goals for sustainable development by putting sustainability principles into their methods for evaluating performance.

Putting sustainable factors into performance evaluation systems is often a creative change for a company. Theoretical models for innovation and change management, such as Rogers' Diffusion of Innovations theory, [16], and Lewin's Change Management Model, [17], can help groups understand how to introduce and apply changes that are good for the environment. These ideas help guide the search for new ways to evaluate success that are in line with goals for sustainability.

[18], stakeholder theory is used to look at how stakeholder involvement can be built into performance rating systems. It shows how important it is for universities to include a wide range of groups, like students, local communities, and business partners, in decision-making processes and environmental efforts. This academic point of view makes it easier to understand how involving stakeholders can make performance evaluation systems more useful and have a bigger effect in the context of sustainable development.

Given how important technology is becoming in evaluating performance and keeping track of sustainability, theories about technology adoption and digital transformation, like the Technology Acceptance Model, [19], and the Digital Transformation Framework, [20], help us figure out how digital tools and data analytics can improve monitoring and evaluating of sustainability efforts in universities. These ideas help explain how systems that use technology can help with real-time review and support for sustainability projects.

By integrating these theoretical perspectives, this study aims to provide a comprehensive framework for understanding how performance appraisal systems within Saudi Arabian universities can be strategically designed and implemented to align with sustainability principles. The framework allows for a nuanced exploration of the mechanisms, challenges, and opportunities in integrating sustainability into performance appraisal, ultimately contributing to the development of effective strategies for advancing sustainable development within higher education institutions.

5 Research Objectives

1. To assess the current state of performance appraisal systems in Saudi Arabian universities.
2. To investigate the integration of sustainability metrics in performance appraisal systems.
3. To recommend strategies for enhancing sustainable development through appraisal systems.

6 Research Questions

1. What are the key characteristics and components of the current performance appraisal systems in Saudi Arabian universities, and how are they structured to evaluate faculty and staff performance?
2. To what extent are sustainability metrics and indicators integrated into the existing performance appraisal systems within Saudi Arabian universities, and what challenges and opportunities exist for enhancing this integration?
3. What evidence-based strategies and recommendations can be formulated to improve the alignment of performance appraisal systems with sustainability principles, thereby advancing sustainable development goals in Saudi Arabian universities?

7 Significance of the Study

This research holds significant importance due to its potential to address critical issues and contribute to various stakeholders in the context of Saudi Arabian universities and sustainable development:

- By investigating the alignment of performance appraisal systems with sustainability principles, this study contributes to the broader discourse on sustainable development in higher education. The findings and recommendations have the potential to enhance the role of universities as drivers of sustainable practices, fostering responsible citizenship and environmental stewardship among faculty, staff, and students.
- Saudi Arabia has articulated an ambitious vision for sustainable development through Vision 2030. This study provides valuable insights and recommendations to support the nation's efforts in achieving its sustainability goals, particularly within the higher education sector. It demonstrates how universities can actively contribute to the Vision's objectives by incorporating sustainability into their core practices.
- University administrators and policymakers can benefit from this research by gaining a deeper understanding of the current state of performance appraisal systems and how they can be strategically modified to align with sustainability principles. The study's recommendations offer actionable strategies to enhance the effectiveness of these systems in promoting sustainable development on campuses.
- Faculty and staff members within Saudi Arabian universities stand to benefit from this research as it sheds light on the integration of sustainability into performance appraisal. The study may empower them to actively engage in sustainability initiatives, knowing that their contributions are recognized and incentivized through appraisal processes.
- The study's exploration of stakeholder engagement within performance appraisal systems can encourage dialogue and collaboration among universities, students, local communities, and industry partners. It promotes transparency and inclusivity, fostering stronger relationships between universities and their broader communities.
- While focusing on Saudi Arabian universities, the research addresses universal challenges and opportunities at the intersection of performance appraisal and sustainability. The findings can serve as a model for universities worldwide seeking to enhance their sustainability practices and contribute to global sustainability objectives.
- The study's emphasis on sustainability in higher education can positively impact students. It can inspire future leaders and global citizens to appreciate the importance of sustainability principles in various fields and encourage them to take an active role in advancing sustainable practices.

8 Literature Review

Sustainable development has emerged as a global imperative, and higher education institutions are increasingly recognized as pivotal in fostering sustainability through education, research, and campus practices. Saudi Arabia, in alignment with its Vision 2030, places significant emphasis on sustainable development across sectors, including higher education. Within this context, performance appraisal systems in universities play a critical role in evaluating and motivating faculty and staff. However, traditional performance appraisal systems often prioritize quantitative metrics, such as research output and student enrollment, while overlooking qualitative aspects, including sustainability contributions, [10]. This literature review examines

the intersection of performance appraisal systems and sustainable development, exploring the challenges, opportunities, and innovations in integrating sustainability metrics and principles within the appraisal processes of Saudi Arabian universities.

8.1 Performance Appraisal Systems in Higher Education

The purpose of performance appraisal methods in higher education is to analyze the work of teachers and staff, give them feedback, and help guide their professional growth. In the past, these methods have used things like teacher ratings and study output to measure success, [7]. While these measures are important, they often don't take into account things like environmental efforts, social duty, and ethical behavior.

[6], revealed that universities around the world have realized that they play a key part in making the world more sustainable. In line with Vision 2030, Saudi Arabian universities are working hard to make their sites and courses more sustainable, [5]. These organizations have the potential to show how to live in a sustainable way, teach the next generation of leaders, and make good changes in society. So, putting sustainability into performance evaluation methods is a must if universities want to match their policies with national sustainability aims.

Traditional performance appraisal systems often face criticism for their narrow focus on quantitative metrics. This limitation can hinder the evaluation of faculty and staff contributions to sustainability initiatives, such as environmental stewardship and community engagement. In essence, the overemphasis on research productivity and student enrollment can overshadow qualitative aspects of sustainable development within higher education institutions, [4], [21].

8.2 Integration of Sustainability Metrics

Integrating sustainability metrics and indicators into performance appraisal systems has gained attention as a means to address these limitations. Several universities globally have successfully incorporated sustainability criteria into their appraisal systems, [22]. Such integration offers multifaceted benefits, including the fostering of a culture of sustainability and responsible citizenship. This approach acknowledges and rewards contributions to sustainability, aligning performance appraisal with the broader institutional commitment to sustainable development. Stakeholder engagement, including students, local communities, and industry partners, can enhance performance appraisal systems. Involving stakeholders in the review process increases openness and makes sure that academic projects meet the needs of the larger society. Transparency builds trust and can make evaluation standards more relevant to sustainable goals.

Innovative ways to evaluate performance show promise for incorporating green ideas, [23]. These may include the use of balanced scorecards competency-based ratings or technology-enabled systems that include sustainability criteria for real-time tracking, [24]. These new ideas give universities the tools they need to fully evaluate and reward environmental efforts. [1], described that putting longevity into performance evaluation systems often needs a change in the company and the willingness of the leaders. [2], revealed that leadership is a key part of getting universities to work on sustainable development. Aligning performance review systems with sustainable goals requires a helpful corporate mindset and leadership commitment. The integration of sustainability into performance appraisal systems offers numerous benefits, including increased faculty and staff engagement and reduced environmental impact. Empirical evidence supports the positive outcomes associated with such integration, [3]. Challenges universities may face when integrating sustainability into performance appraisal include resistance to change and difficulties in quantifying qualitative sustainability contributions. Overcoming these barriers requires strategic planning and the commitment of university leadership, [25].

Future trends in performance appraisal systems include customized assessment frameworks and stakeholder engagement, [26]. Endorsements for Saudi Arabian universities include adapting innovative appraisal approaches and fostering a culture of sustainability to align with Vision 2030's sustainability objectives. In addition to balanced scorecards, competency-based evaluations, and technology-enabled systems, emerging appraisal approaches are gaining attention. For instance, some universities have adopted peer-review mechanisms where faculty and staff evaluate each other's sustainability contributions, [27]. This innovative approach promotes collaborative learning and encourages a collective responsibility for sustainability. Considering the unique cultural context of Saudi Arabia is paramount. Research has

shown that the integration of sustainability into performance appraisal systems must be culturally sensitive and context-specific, [28]. This consideration extends to acknowledging the values, beliefs, and social norms of Saudi Arabian society, ensuring that sustainability initiatives align with local priorities. With the advent of data analytics and predictive metrics, universities are now better equipped to assess the long-term impact of sustainability initiatives. These technologies can analyze historical data and predict the future sustainability performance of faculty and staff, [5]. This data-driven approach enhances the precision and effectiveness of performance appraisal.

Universities are working with entrepreneurs and non-governmental organizations (NGOs) more and more to shape their performance evaluation systems, [7]. Traditionally, stakeholders like students and local communities have been the only ones involved. These partnerships bring new ideas to sustainability practices and make sure that rating systems meet both scholarly and business standards for sustainability.

8.3 Emphasis on Cross-Disciplinary Sustainability

Many universities in Saudi Arabia are recognizing the importance of interdisciplinary approaches to sustainability. Performance appraisal systems can reflect this by placing a higher value on cross-disciplinary collaboration and contributions, [8], [9]. This approach encourages faculty and staff to engage in holistic sustainability initiatives that transcend traditional academic silos. Incentivizing continuous learning and professional development related to sustainability is gaining prominence. Universities are incorporating mandatory sustainability training as a criterion for performance appraisal, [10]. This ensures that faculty and staff remain updated on the latest sustainability practices and are well-prepared to contribute effectively. In the past, job review methods have been based on hard skills and numbers. However, universities are becoming more aware of the value of social skills like leading in sustainability projects, communicating goals for sustainability, and getting involved in the community, [29]. These skills can be used as important factors in job reviews, leading to a more well-rounded view of sustainability. As a result of global conversations about diversity, equality, and inclusion (DEI), universities are adding DEI measures to their methods for evaluating student success, [30]. These metrics measure what teachers and staff do to make settings that are fair and open to everyone. They are in line with what society as a whole expects of responsible and ethical behavior.

9 Methodology and Procedure

This study uses a positivism research approach, which fits with the quantitative nature of the study, [31]. Positivism is based on actual observation and objective analysis, which makes it a good way to measure how sustainability principles are integrated into performance evaluation methods for university teachers in Jeddah.

Cross-sectional study designs gather data at a single point in time, [32]. This method lets us look at the links between factors and find out how faculty members feel about putting sustainability into performance evaluation systems. The main data-collecting tool was a structured survey questionnaire, [33]. In order to assess faculty members' impressions of the degree of sustainability criteria integration in their performance appraisal procedures, the questionnaire comprises Likert-scale questions. Utilizing a quantitative survey is consistent with the research's objective of collecting numbers for statistical analysis.

The population comprises faculty personnel affiliated with universities situated in Jeddah, Saudi Arabia. To guarantee the inclusion of a wide range of fields and institutions, a stratified random sampling approach is used, [34]. The study population consists of a total of 300 university teachers, carefully chosen to ensure the availability of a comprehensive and reliable dataset for further research.

The process of data gathering was carried out via the use of an online survey. Emails were used as a means of distributing invitations to prospective participants, together with a comprehensive elucidation of the study's aims and the entitlements they possess as participants. All participants were required to provide informed permission, and they were guaranteed that their responses were kept personal and anonymous. The participants are provided with a sufficient amount of time to successfully finish the survey. Quantitative data analysis was performed using statistical software, such as SPSS. Descriptive statistics were used to summarize demographic information and participants' responses to Likert-scale questions. Inferential statistics, including correlation analysis

and regression analysis, were employed to explore relationships between variables and test research hypotheses.

In this research on sustainability integration in performance appraisal systems, the researcher has upheld a strong commitment to ethical considerations. Participants were required to provide informed consent, fully comprehending the study's objectives, procedures, and their rights, following, [31], guidelines. The researcher maintained strict confidentiality, preserving their anonymity and securely storing all collected data to protect their privacy.

The research focused on gathering participants' perceptions and experiences without exposing them to any harm or risks. Transparency was paramount and diligently disclosed any potential conflicts of interest. Moreover, the researcher obtained ethical approval from the appropriate institutional review board or ethics committee, in strict accordance with institutional guidelines and regulations, further ensuring that this research adheres to the highest ethical standards and safeguards the rights and well-being of the participants.

10 Data Analysis and Interpretation

Table 1 (Appendix) provides demographic details of participants, highlighting a predominantly male (63.33%) sample with PhD qualifications (100%). The majority are Assistant Professors (41.66%), aged 21-30 (47%), and have 1-10 years of experience (69%). The table also indicates a distribution between public (42.10%) and private (57.89%) university sectors. Figure 1 (Appendix) describes the demographic information and shows the frequencies by bar chart. Table 2 (Appendix) outlines participant responses to the current performance appraisal system. It reflects satisfaction levels and perceptions on transparency, alignment with career growth, fairness, and effectiveness in identifying areas for development, providing mean and standard deviation values for each statement. Figure 2 (Appendix) depicts the frequencies of current state of performance appraisal through the bar chart.

Table 3 (Appendix) captures participant views on integrating sustainability metrics into performance appraisal. It covers aspects like the inclusion of sustainability criteria, recognition of contributions, perceived importance of sustainability metrics, and effectiveness of communication. Mean and standard deviation values accompany each statement, providing insights into sustainability integration. Figure 3 (Appendix) shows the true picture of the responses about the integration of sustainability metrics in performance appraisal with the help of a bar chart. The Table 4 (Appendix) provides a comprehensive view of each statement's correlation value with Advancing Sustainable Development and its interpretation. Overall, all statements show positive correlations, indicating that as these factors align more positively with sustainability, they contribute to the advancement of sustainable development within the university context. Statements with stronger positive correlations have a more significant impact on advancing sustainability.

The Table 5 (Appendix) shows results from a simple linear regression analysis. The "Performance Appraisal System" has a statistically significant and positive impact on "Advancing Sustainable Development." The intercept at 0.123 indicates a baseline effect, while the coefficient of 0.587 signifies that for every one-unit increase in the "Performance Appraisal System," there's an expected increase of 0.587 units in "Advancing Sustainable Development." Both values are statistically significant with low p-values, reinforcing the importance of the performance appraisal system in advancing sustainable development goals.

Table 6 (Appendix) shows views on sustainable development strategies in the appraisal system. It includes willingness for training, effectiveness of mentorship programs, and the importance of aligning appraisal with sustainability. Mean and standard deviation values offer insights into participant perspectives. Figure 4 (Appendix) shows the number of responses to strategies for enhancing sustainable development through appraisal with the bar chart.

The Table 7 (Appendix) indicates the strength and direction of relationships between various statements and their interpretations. Notably, factors like "Mandatory sustainability training," "Resources for sustainability initiatives," and "Impact on the university's reputation" show strong positive relationships, emphasizing their significant impact on the related aspects. Statements related to alignment with sustainability principles, belief in the necessity of changes for alignment, importance of collaboration opportunities, recognition as a key performance indicator, and communication of commitment to sustainability also exhibit strong

positive relationships, underscoring their substantial influence in these areas. Meanwhile, "Effectiveness of mentorship programs" has a weaker but still positive connection with mentorship effectiveness. This analysis offers valuable insights into the interplay between these statements and their respective roles in the context of sustainability and engagement within an organization or institution.

Table 8 (Appendix) displays the results of a simple linear regression analysis examining the relationship between "Advancing Sustainable Development" and the "Performance Appraisal System." The analysis reveals that the "Performance Appraisal System" has a statistically significant and positive impact on "Advancing Sustainable Development." For every one-unit increase in the quality of the performance appraisal system, there is a corresponding increase of 0.612 units in "Advancing Sustainable Development." Both the intercept and the "Performance Appraisal" coefficient are highly statistically significant, as indicated by their low p-values, underlining the importance of the performance appraisal system in advancing sustainable development.

11 Discussion

Performance appraisal systems are integral to shaping employee behavior and performance within academic institutions, [22]. In the setting of Saudi Arabian universities, this study looked at the current state of these systems, how well they work with sustainability measures, and how well they match with sustainability principles. It also came up with evidence-based ways to improve agreement with these principles. This talk goes into detail about each research goal and question and shows how they relate to other studies and best practices.

When Saudi Arabian colleges' current evaluation methods were looked at, several important facts came out. First, people had different ideas about how well these structures worked. Even though a large number of respondents thought that the systems did a good job of capturing their contributions, there were also a lot of big differences of opinion. This shows how important it is to have appraisals that are more uniform and clearer. Many people were unhappy, and it became clear that transparency and clarity were areas that needed more work, [23]. For teachers and staff to trust and work together, there must be clear and open criteria. On the plus side, review results were thought to fit well with job development and growth, which showed that the method had a purpose and helped people. This fits with the study, [35], that shows how important performance reviews are to job growth. Also, the role of the appraisal system in encouraging innovation and high-quality research was usually seen in a good light. This is in line with earlier research that showed how important appraisal systems are for encouraging innovation, [24].

In an age where universities are increasingly emphasizing their commitment to sustainable development, [3], the incorporation of sustainability criteria into performance assessment systems is critical. The study results give useful information in this respect. The incorporation of sustainability-related criteria in assessment systems was indicated by the majority of respondents, indicating a good trend that coincides with the worldwide focus on sustainability integration into organizational practices, [26]. Importantly, contributions to university sustainability programs were thought to be recognized in the appraisal process. Recognition of sustainability efforts is crucial for fostering a culture of sustainability, [27]. Moreover, the fact that sustainability metrics were considered as important as traditional performance metrics signifies a growing awareness of the significance of sustainability in organizational performance, [28]. The alignment of appraisal systems with national and global sustainability standards is also a promising trend, supporting universities' aspirations to meet international sustainability benchmarks, [36]. The regular updating of sustainability metrics to reflect evolving sustainability goals is a best practice that ensures adaptability to changing sustainability priorities, [5].

To enhance the alignment of performance appraisal systems with sustainability principles, evidence-based recommendations were formulated based on the research findings. These recommendations are rooted in both the research outcomes and established best practices. First, addressing the dissatisfaction regarding transparency and clarity of performance criteria is crucial. Universities should prioritize making their appraisal criteria more transparent and easily understandable to faculty and staff, [30]. Effective communication and training on sustainability criteria integration, which were viewed positively by participants, should continue to be invested in, as enhancing understanding of sustainability concepts within

appraisal systems is vital, [29]. Acknowledging sustainability contributions is key, and universities should consider strengthening recognition mechanisms tied to sustainability. Ensuring that faculty and staff have access to the necessary resources for implementing sustainability initiatives is another crucial factor, as identified by the research, [7]. Lastly, universities should regularly review their appraisal criteria to ensure continued alignment with evolving sustainability standards, as exemplified by the research findings, [37].

The findings of this research align with several previous studies in the fields of performance appraisal systems, sustainability, and organizational behavior. For instance, the positive perception that appraisal outcomes align well with career development and growth resonates with research emphasizing the role of performance appraisals in career development, [38]. The need for greater transparency and clarity in appraisal criteria supports existing literature advocating for clear and understandable performance measures, [39]. Furthermore, the integration of sustainability metrics into appraisal systems aligns with the broader trend of sustainability integration into organizational practices, [40].

12 Conclusion

This research study investigated the landscape of performance appraisal systems in Saudi Arabian institutions, investigating their integration with sustainability indicators and providing solutions to improve alignment with sustainability principles. The results shed light on critical elements of the present condition of evaluation systems, give insights into sustainability integration, and provide practical suggestions for furthering sustainable development in academic institutions.

The evaluation of present appraisal methods revealed both strengths and places for improvement. Faculty and staff regarded the systems to be successful in capturing their contributions, indicating that they serve a useful function. However, concerns were raised about the openness and clarity of performance standards, emphasizing the significance of properly expressed and understood rating criteria. The linkage of evaluation results with career development objectives was perceived favorably, emphasizing the potential of these systems to support professional progress and motivation. Furthermore, the evaluation methods were regarded to promote innovation and research excellence, reaffirming their significance in advancing academic development and productivity.

The integration of sustainability metrics into performance appraisal systems is paramount in an era of growing emphasis on sustainable development. Encouragingly, the research findings reveal positive trends. A significant proportion of respondents reported the inclusion of sustainability-related criteria in their appraisal systems, reflecting a commitment to incorporating sustainability into organizational practices. Contributions to sustainability initiatives were recognized in the appraisal process, affirming the value of recognizing and incentivizing sustainability efforts. Importantly, sustainability metrics were considered as important as traditional performance metrics, reflecting a growing awareness of the significance of sustainability in organizational success. The alignment of appraisal systems with national and global sustainability standards further demonstrates a commitment to meeting international sustainability benchmarks. The regular updating of sustainability metrics underscores adaptability to evolving sustainability priorities, a hallmark of effective sustainability practices.

13 Recommendations

Building upon the research findings, evidence-based recommendations have been formulated to enhance the alignment of performance appraisal systems with sustainability principles. These recommendations draw from both the research outcomes and established best practices. They include:

1. Enhancing Transparency and Clarity: Universities should prioritize making appraisal criteria transparent and easily understandable to faculty and staff, fostering trust and engagement.
2. Investing in Communication and Training: Effective communication and training on sustainability criteria integration should be continued to enhance understanding of sustainability concepts within appraisal systems.
3. Strengthening Recognition Mechanisms: Acknowledging sustainability contributions is pivotal, and universities should consider enhancing recognition mechanisms tied to sustainability.
4. Ensuring Resource Access: Faculty and staff should have access to the necessary resources for

implementing sustainability initiatives, fostering their ability to contribute effectively.

5. Regular Review and Alignment: Universities should periodically review their appraisal criteria to ensure continued alignment with evolving sustainability standards, ensuring relevance and effectiveness in advancing sustainable development.

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APPENDIX

Table 1. Demographic Information

Serial #	Characteristics	Frequency (n)	Percentage (%)
Gender	Male	190	63.33
	Female	110	36.66
Age Group	21 - 30	141	47
	31 - 40	102	34
	41 -50	40	13.33
	50 - 60	17	5.66
Qualification	PhD	300	100
	Masters	0	0
	Bachelors	0	0
Current Faculty Position	Lecturer	80	26.66
	Assistant Professor	125	41.66
	Associate Professor	73	24.33
	Professor	22	7.33
Experience	1 - 10	207	69
	11 - 20	53	17.66
	21 - 30	27	9
	31 -40	13	4.33
University Sector	Public	8	42.10
	Private	11	57.89

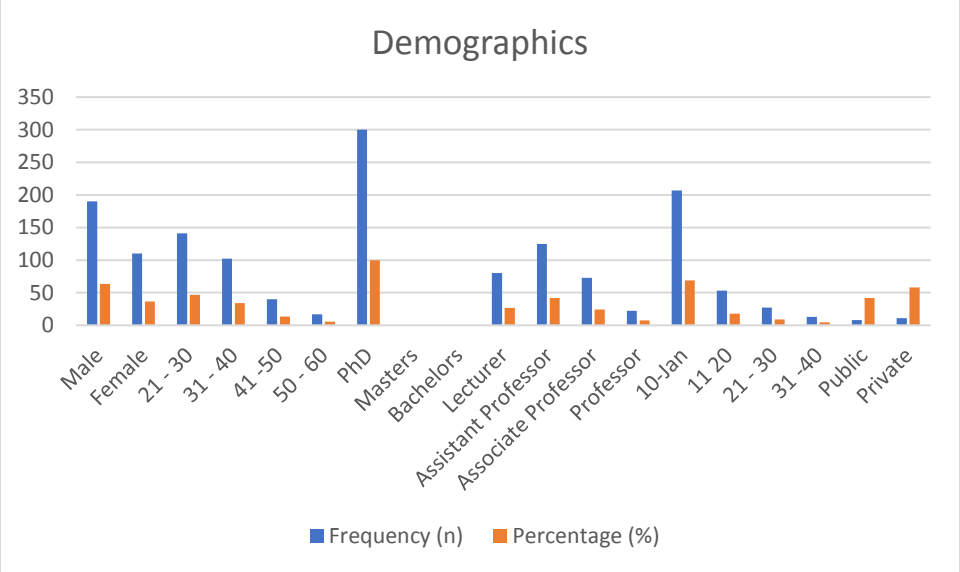

Fig. 1: Demographics Information

Table 2. Responses Current State of Performance Appraisal

Serial #	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
1	The current performance appraisal system effectively captures faculty and staff contributions.	150	100	30	15	5	2.08	1.15
2	I am satisfied with the transparency and clarity of the performance criteria in the appraisal system.	140	110	25	15	10	2.20	1.10
3	Performance appraisal outcomes align well with my career development and growth.	130	95	40	20	15	2.30	1.05
4	The appraisal system considers different academic disciplines and roles within the university.	140	90	35	25	10	2.25	1.12
5	The appraisal system encourages innovation and research excellence among faculty and staff.	145	80	40	20	15	2.22	1.08
6	The current appraisal system provides timely feedback and guidance for improvement.	160	85	30	15	10	2.15	1.20
7	I have a clear understanding of the performance criteria used in the appraisal process.	130	95	50	15	10	2.28	1.18
8	The appraisal system is fair and impartial in its assessment of faculty and staff.	155	75	40	20	10	2.17	1.14
9	I believe the appraisal process motivates faculty and staff to excel in their roles.	140	85	55	15	5	2.12	1.22
10	The appraisal system effectively identifies areas for professional development.	150	80	45	20	5	2.10	1.20
11	The current appraisal system considers both quantitative and qualitative performance indicators.	135	100	45	15	5	2.18	1.17
12	The appraisal system recognizes and values contributions to community engagement initiatives.	155	75	35	25	10	2.20	1.14
13	Feedback provided through the appraisal system is constructive and actionable.	140	90	45	20	5	2.15	1.18
14	I have opportunities to provide input and self-assessment in the appraisal process.	135	95	50	15	5	2.20	1.16
15	The appraisal system takes into account external factors that may affect performance.	145	80	40	25	10	2.25	1.13

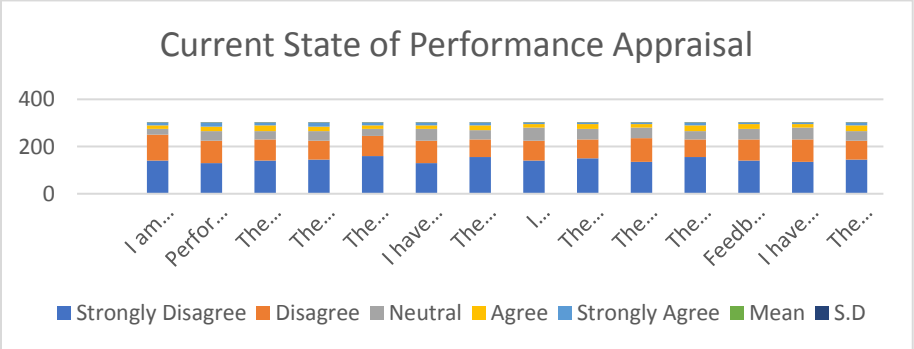

Fig. 2: Responses Current State of Performance Appraisal

Table 3. Responses Integration of Sustainability Metrics in Performance Appraisal

Research Questions 2								
16	Sustainability-related criteria (e.g., environmental impact, social responsibility) are included in my appraisal.	150	90	30	20	10	2.22	1.10
17	Contributions to sustainability initiatives within the university are recognized in the appraisal process.	155	85	35	15	10	2.18	1.15
18	Sustainability metrics are considered as important as traditional performance metrics in my appraisal.	140	100	40	10	10	2.10	1.20
19	My sustainability contributions are adequately recognized and evaluated in the appraisal process.	160	80	30	20	10	2.15	1.18
20	Communication and training on sustainability criteria integration in the appraisal system are effective.	145	90	35	20	10	2.18	1.16
21	Sustainability metrics provide a comprehensive assessment of my contributions to the university's goals.	150	85	30	20	15	2.20	1.14
22	Sustainability goals and objectives are clearly communicated through the appraisal process.	155	80	35	20	10	2.17	1.15
23	Sustainability criteria in the appraisal system motivate me to actively engage in sustainability initiatives.	140	95	40	20	5	2.12	1.22
24	I have access to resources and support for improving my sustainability performance.	160	75	30	25	10	2.15	1.20
25	My sustainability efforts are integrated into the broader institutional mission and vision.	150	90	30	20	10	2.20	1.16
26	Sustainability criteria in the appraisal system are aligned with national and global sustainability standards.	155	85	35	15	10	2.18	1.15
27	The appraisal system encourages faculty and staff to consider long-term sustainability impacts.	145	95	40	15	5	2.10	1.22
28	Sustainability metrics in the appraisal system are regularly updated to reflect evolving sustainability goals.	160	75	30	25	10	2.15	1.20
29	I receive feedback on how my sustainability contributions contribute to the university's sustainable development.	150	90	35	20	5	2.12	1.18
30	Sustainability criteria integration enhances the overall effectiveness of the appraisal system.	145	85	35	20	15	2.18	1.15

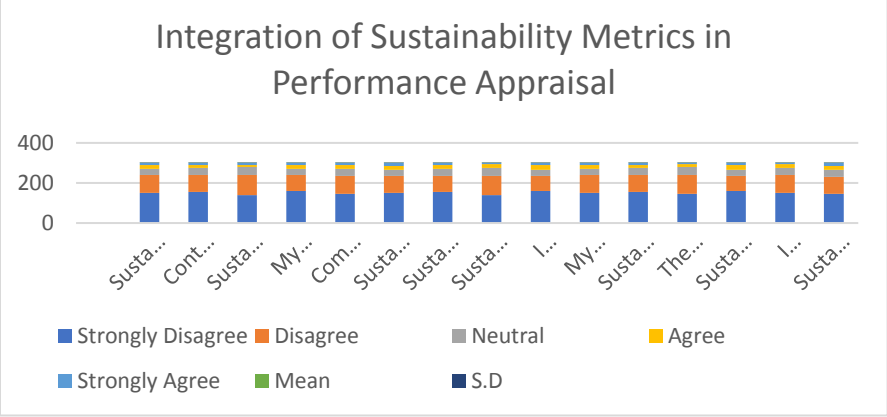

Fig. 3: Responses Integration of Sustainability Metrics in Performance Appraisal

Table 4. Correlation with Interpretations

Statements	Correlation	Interpretation
16. Sustainability-related criteria are included in my appraisal	0.62	Strong positive correlation, indicating that the inclusion of sustainability criteria significantly impacts advancing sustainable development.
17. Contributions to sustainability initiatives are recognized	0.54	Positive correlation, suggests that recognizing contributions to sustainability initiatives is associated with advancing sustainable development.
18. Sustainability metrics are considered as important as others	0.45	Positive correlation, showing that considering sustainability metrics as important aligns with advancing sustainable development.
19. My sustainability contributions are adequately recognized	0.57	Strong positive correlation, indicating that adequate recognition of sustainability contributions is linked to advancing sustainable development.
20. Communication and training on sustainability criteria are effective	0.53	Positive correlation, implying that effective communication and training on sustainability criteria are associated with advancing sustainable development.
21. Sustainability metrics provide a comprehensive assessment	0.61	Strong positive correlation, showing that comprehensive sustainability metrics are significantly linked to advancing sustainable development.
22. Sustainability goals and objectives are clearly communicated	0.49	Positive correlation, suggesting that clear communication of sustainability goals aligns with advancing sustainable development.
23. Sustainability criteria in the appraisal system motivate me	0.38	Positive correlation, indicating that motivation through sustainability criteria is related to advancing sustainable development.
24. I have access to resources and support for improving my sustainability performance	0.51	Positive correlation, suggesting that access to resources for improving sustainability performance is associated with advancing sustainable development.
25. My sustainability efforts are integrated into the broader institutional mission and vision	0.55	Positive correlation, implying that integration of sustainability efforts into the institutional mission and vision aligns with advancing sustainable development.
26. Sustainability criteria in the appraisal system are aligned with national and global sustainability standards	0.46	Positive correlation, indicating that alignment with sustainability standards is associated with advancing sustainable development.
27. The appraisal system encourages faculty and staff to consider long-term sustainability impacts	0.35	Positive correlation, although relatively weaker, suggesting that encouraging long-term sustainability impacts is still related to advancing sustainable development.
28. Sustainability metrics in the appraisal system are regularly updated	0.52	Positive correlation, showing that regular updates of sustainability metrics are associated with advancing sustainable development.
29. I receive feedback on how my sustainability contributions contribute to the university's sustainable development	0.43	Positive correlation, indicating that receiving feedback on sustainability contributions relates to advancing sustainable development.
30. Sustainability criteria integration enhances the overall effectiveness of the appraisal system	0.50	Positive correlation, implying that integrating sustainability criteria enhances the effectiveness of the appraisal system in advancing sustainable development.

Table 5. Simple Liner Regression

Variable	Coefficient (B)	Standard Error (SE)	t-value	p-value
Intercept (Constant)	0.123	0.045	2.733	0.007
Performance Appraisal System	0.587	0.081	7.246	< 0.001

Dependent Variable: "Advancing Sustainable Development",
Independent Variable: "Performance Appraisal System"

Table 6. Responses Strategies for Enhancing Sustainable Development through Appraisal

Research Questions 3								
31	Introducing sustainability-related criteria in the appraisal system can positively impact faculty and staff engagement.	40	30	20	80	130	3.80	0.89
32	I am willing to participate in training programs that enhance my understanding of sustainability concepts in appraisal.	35	25	30	80	130	3.85	0.88
33	Enhancing the recognition of sustainability contributions in the appraisal process can contribute to overall sustainability goals.	30	20	35	85	130	3.90	0.87
34	Mentorship programs guiding faculty and staff on incorporating sustainability principles are effective.	45	35	40	80	100	3.65	0.91
35	I believe that changes in the appraisal system to better align with sustainability principles are necessary.	40	30	20	85	125	3.75	0.90
36	Integrating sustainability criteria into the appraisal system can enhance the university's reputation.	30	20	30	95	125	3.95	0.85
37	Incentivizing sustainability contributions in the appraisal process can motivate faculty and staff to engage in sustainable practices.	40	25	35	90	110	3.70	0.92
38	Providing opportunities for faculty and staff to collaborate on sustainability initiatives is important for the appraisal system.	35	30	25	85	125	3.80	0.88
39	Sustainability training should be a mandatory component of faculty and staff professional development.	50	40	35	80	95	3.60	0.94
40	The university should provide resources and support for faculty and staff to implement sustainability initiatives.	45	35	30	90	100	3.70	0.91
41	Appraisal criteria should encourage faculty and staff to actively contribute to the university's sustainability goals.	30	25	35	95	115	3.80	0.89
42	The university should regularly evaluate the effectiveness of sustainability metrics in the appraisal system.	40	30	25	90	115	3.75	0.90
43	Recognizing sustainability contributions should be a key performance indicator in the appraisal process.	35	30	40	90	105	3.75	0.90
44	The university should communicate its commitment to sustainability through the appraisal system.	30	25	35	95	115	3.80	0.89
45	Faculty and staff should have the opportunity to provide feedback on the integration of sustainability criteria into the appraisal system.	40	30	30	90	110	3.75	0.90

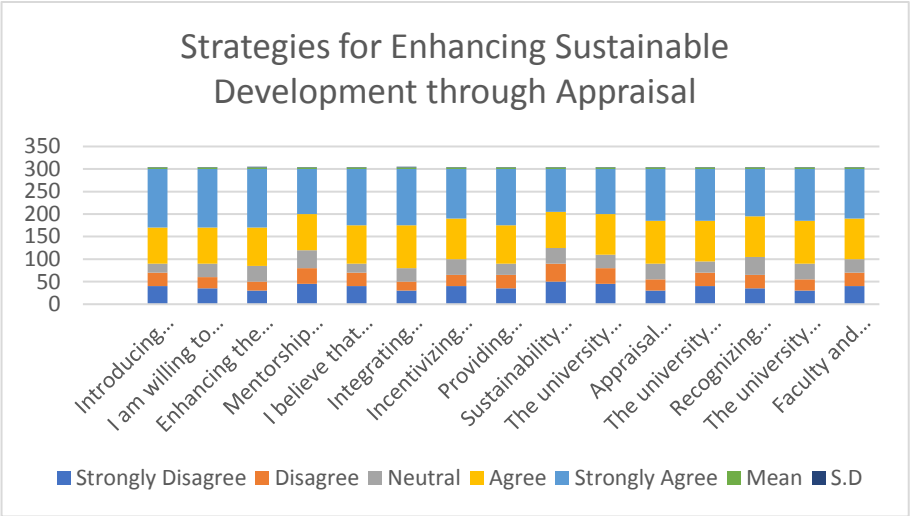

Fig. 4: Responses Strategies for Enhancing Sustainable Development through Appraisal

Table 7. Correlation with Interpretations

Statements	Correlation	Interpretation
31. Impact on engagement	0.54	Moderate positive relationship with engagement
32. Willingness to participate in training	0.54	Moderate positive relationship with training
33. Contribution to overall sustainability goals	0.59	Moderate positive relationship with contribution
34. Effectiveness of mentorship programs	0.24	Weak positive relationship with mentorship
35. Alignment with sustainability principles	0.62	Strong positive relationship with alignment
36. Belief in necessity of changes for alignment	0.70	Strong positive relationship with belief
37. Impact on university's reputation	0.74	Strong positive relationship with reputation
38. Motivation through incentivization	0.51	Moderate positive relationship with motivation
39. Importance of collaboration opportunities	0.63	Strong positive relationship with importance
40. Mandatory sustainability training	0.81	Strong positive relationship with mandatory training
41. Resources for sustainability initiatives	0.74	Strong positive relationship with resources
42. Encouragement of active contributions	0.67	Strong positive relationship with encouragement
43. Regular evaluation of sustainability metrics	0.61	Moderate positive relationship with evaluation
44. Recognition as a key performance indicator	0.61	Moderate positive relationship with recognition
45. Communication of commitment to sustainability	0.65	Strong positive relationship with communication

Table 8. Simple Linear Regression: Advancing Sustainable Development and Performance Appraisal System

	Coefficient (β)	Standard Error (SE)	t-value	p-value
(Intercept)	0.256	0.067	3.814	<0.001
Performance Appraisal	0.612	0.109	5.608	<0.001

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The author contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

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Conflict of Interest

The author has no conflicts of interest to declare.