

Empowering University Sustainability and Educational Leadership: Creation of Environmental Program for Green-Driven Progress

Wei He *, ROSALIE D. MERIALES

College of Education and Liberal Arts Graduate School Faculty, Adamson University, Manila, CO 0900, Philippines

* Corresponding author: Wei He (Email: 113966668@qq.com)

Abstract: The study aims to assess university sustainability and educational leadership in China to inform the development of an environmental program for sustainable progress. It explores respondents' profiles, their assessment of environmentally focused initiatives, and the relationship between sustainability and leadership effectiveness. The researcher used a quantitative-descriptive correlational research design and utilized department heads/deans and teachers of selected five Higher Educational Institutions in China as respondents of the study. The study highlights that while university sustainability initiatives and educational leadership are generally effective in promoting green-driven progress, there are areas needing improvement, particularly in sustainability commitment, attitudes, and organizational identification. It emphasizes the importance of creating an environmental program to further strengthen sustainability efforts and empower leadership within universities.

Keywords: University Sustainability; Educational Leadership; Environmental Program; Green Driven Progress.

1. Introduction

The current state of university sustainability in China shows some progress but also reveals areas for improvement compared to international standards. There has been an increase in interest in environmentally oriented sustainable development paths among Chinese universities but necessity to still prioritize economic and social factors over environmental concerns are evident. Research focusing specifically on campus sustainability in Chinese higher education institutions highlights the need to address various opportunities, motivations, and challenges associated with achieving greater levels of sustainability. Moreover, growth in the field of sustainability in Chinese higher education remains to be a developing area and more efforts are required to align with global best practices, standards and achieve significant improvements in environmental responsibility as an educational institution.

According to Tshivhase and Bisschoff (2023), developing a theoretical model to measure and manage green initiatives should involve the influence of green initiatives, existing green initiatives, factors impacting green initiatives, implementation of green initiatives, barriers, and benefits which aims to enhance campus environmental sustainability practices. The emphasis is in the importance of environmental awareness and sustainable practices in higher education institutions involving the positive relationship between green initiatives and factors such as efficient workflow, personnel cooperation, resource efficiency, learning and improvement, delegation of authority, and improved management attitude. These factors play a crucial role in driving the implementation of green initiatives. However, these factors may not be directly applicable to all higher education institutions due to varying constraints. The universities need to formalize their environmental initiative strategies to align with environmental regulations and improve sustainability working towards enhancing their environmental sustainability practices and contributing to a greener future.

As emphasized by Hariram, et. al. (2023), the concept of sustainalism integrates with socio-economic and environmental aspects to address sustainable development. The importance of using natural resources responsibly today will ensure their availability for future generations. Sustainalism aims to promote sustainable practices that balance economic growth, social well-being, and environmental protection while advocating for responsible resource management, considering the needs of present and future generations. By incorporating socio-economic and environmental factors, sustainalism offers a holistic approach to achieving sustainability. The significance of sustainable development in ensuring a better future for all wherein the role of individuals, communities, and governments in promoting sustainalism is very important. Strategies for implementing sustainable practices in various sectors including educational institutions is in demand.

As Foreign Language Press (2023) discussed that China's policies, strategies, and accomplishments related to green development during the last decade has shown progress highlighting the key themes to support continuous improvement. China emphasizes the importance of balancing economic growth with ecological preservation, aiming for high-quality development and improved living conditions through green initiatives. China has implemented measures to ensure a well-planned distribution of natural resources, urban spaces, and agricultural lands, focusing on sustainability and resource optimization. China promotes green technologies, energy revolutions, efficient resource usage, and cleaner production across various industries. The need for eco-friendly lifestyles among citizens, advocating for responsible behavior and sustainable choices is also relevant. China establishes systems that combine incentives and constraints to encourage green development, industrial restructuring, pollution control, and climate response. China participates globally in addressing climate challenges and works closely with other nations to foster green development, particularly under the framework of the Belt and Road Initiative. China's

dedication to green development, presenting itself as a leader in environmental protection and sustainable development. China hopes to inspire collaboration and partnership with the international community to address global environmental concerns. Hence, the present study is timely as it supports to provide insights on environmental concerns in the context of university management and educational leadership.

According to Loorbach and Wittmayer (2023), there is necessity in mobilizing research and education for sustainability transitions, focusing on addressing complex societal challenges and promoting positive impacts. Given the importance of scientific relevance and collaboration to tackle pressing societal concerns, innovative approaches such as combining philosophical perspectives with design thinking and systems theory, encouraging interdisciplinarity, experimentation, and entrepreneurship among academic-related stakeholders.

The Green School National Network (2023) presents innovative approach to promoting environmental sustainability in educational institutions while addressing equity concerns. The Green Print framework is designed as a comprehensive toolkit that helps schools assess their current ecological footprint, identify areas for improvement, and develop action plans to achieve healthier, more equitable, and sustainable environments. Schools can improve indoor air quality, reduce exposure to toxic chemicals, promote physical activity through green spaces, and enhance mental well-being among students and staff. It encourages schools to adopt energy-efficient practices, conserve water resources, minimize waste generation, and implement renewable energy solutions. These efforts contribute to reducing carbon emissions and mitigating climate change impacts. Its focus also includes social justice and equity. By engaging with local communities, school administrators can ensure that all stakeholders benefit equally from the implementation of environmentally friendly initiatives. By incorporating hands-on activities, field trips, and interdisciplinary curriculum into classroom instruction, educators can empower students to become active agents of positive change both inside and outside the school walls. However, it is noted that some obstacles can provide opportunities for innovation and creative problem-solving, ultimately leading to stronger partnerships and more resilient school ecosystems. Transforming educational institutions into models of health, equity, and sustainability can be done by embracing collaborative approaches, fostering environmental literacy, and prioritizing social justice, schools can lead the way towards a greener future for generations to come.

Developing an integrated participatory methodology framework for campus sustainability assessment tools is crucial for ensuring effective sustainability practices in educational institutions (Dawadu, et. al., 2023). In Chinese universities, the integration of participatory methodologies involves engaging stakeholders from various departments, including students, faculty, administration, and local communities. By involving these stakeholders in the assessment process, a more comprehensive understanding of sustainability challenges and opportunities can be achieved because it fosters a sense of ownership and commitment among stakeholders, leading to more sustainable outcomes. Furthermore, developing a set of standardized assessment tools tailored to the university's unique context, data collection and analysis become more efficient and reliable is necessary in measuring effectiveness of university

sustainability and educational leadership.

When creating sustainability models, it should emphasize the importance of data transparency and communication. Clear communication channels should be established to share assessment results with stakeholders and solicit feedback for continuous improvement while transparency builds trust and accountability within the university community, driving further engagement in sustainability initiatives leading to more active participation on environmentally focused initiatives. Developing an integrated participatory guidelines and tools, the educational institutions in China can enhance its sustainability performance, promote cross-cultural collaboration, and serve as a model for other educational institutions striving for environmental stewardship, sustainability, proper university management and stronger educational leadership.

China has adopted guidelines encouraging schools to integrate environmental management systems, although stand-alone environmental curricula remain relatively rare. Students actively participate in environmental clubs, recycling programs, and wastewater treatment projects, demonstrate strong environmental awareness and strive to reduce their ecological footprint, making informed choices regarding energy savings, waste segregation, and eco-friendly products. The integration of sustainability content into relevant subjects remains common, although there is a need for improved pedagogical techniques and professional development particularly educational leadership. Innovative schools have begun incorporating the United Nation Sustainable Development Goals into their curriculum, and some institutions offer specialized courses in sustainability. China continues to invest in improving environmental education and fostering responsible citizenship but there is still significant room for growth in both the quality and breadth of sustainability among universities.

As Wang (2021) discusses the development of environmental curriculum tailored to students in China wherein integrating the United Nations Sustainable Development Goals into education and infuse sustainable practices. China has guidelines for environmental education, however there are practices that are unbalanced across regions, with more emphasis in economically abundant areas like Shanghai. In China, the government has been taking a leading role in promoting sustainability goals and efforts are being made to enhance sustainability education through innovative approaches foster awareness, attitudes, and values conducive to sustainable lifestyles and consumption habits of all academic-related stakeholders as one of the key participants.

As Zhu and Caliskan (2021) discussed the key aspect on collective leadership among Chinese universities that prioritize a more collaborative and consensus-driven approach to educational leadership. This collective leadership style aims to foster harmony, unity, and shared decision-making among faculty and administrators within cultural context in shaping educational leadership practices in China. The evolving role of educational leaders in promoting innovation and internationalization within Chinese higher education wherein leaders are increasingly tasked with driving institutional reforms, fostering research excellence, and enhancing global partnerships to elevate the quality and reputation of Chinese universities on the world stage.

Discussions surrounding university leadership in China encompass various aspects, including the challenges faced by Chinese university leaders during periods of crisis, the role of

the Chinese government in shaping university systems, and the implications of these developments for academic freedom and institutional integrity. The role of leaders in shaping the academic and administrative direction of universities in China shows distinction between university managers and institutional leaders, emphasizing the multifaceted responsibilities and challenges faced by individuals occupying these positions (Ruan, et. al., 2023). It explores how top-level leaders navigating the complex organizational structures, foster innovation, and drive strategic initiatives to enhance academic excellence and institutional reputation. The dynamic interplay between tradition and modernization in shaping leadership practices provides a rich understanding of how leaders in Chinese universities balance global trends with local contexts to drive sustainable growth and development. The importance of visionary leadership, effective governance structures, and strategic decision-making in advancing higher education excellence is necessary due to the growing demands in the educational setting.

As Kinoshita, et. al. (2019) mentioned on the integration of urban sustainability concepts within educational settings to foster a more sustainable future. The integration of sustainability increases awareness and understanding of urban issues, improved critical thinking abilities, enhanced problem-solving skills, and greater motivation. Educators are encouraged to incorporate sustainability concepts into their teaching practices to better prepare students for careers in fields relevant to sustainable development. Moreover, policymakers could consider supporting initiatives aimed at promoting interdisciplinary approaches to sustainability education.

The global community including educational institutions is increasingly aware of the urgent need to address environmental and social challenges that threaten our planet's future (Sass, et. al., 2023). Adopting an action-oriented approach in fostering sustainable behaviors and mindsets reflect critically on actions, values, methods, and institutions. Hence, stakeholders must have informed decisions and take responsible actions regarding current and future use of resources that commonly encompasses three interconnected dimensions namely environmental, economic, and societal. This aims to empower students with knowledge, skills, attitudes, and values necessary to create a more just, equitable, and environmentally sound universities. An action-oriented approach emphasizes hands-on learning experiences that encourage students to engage directly with real-world problems wherein it reflects on how leadership is performed. Teachers must develop solutions based on critical thinking, collaboration, and creativity while focusing on practical applications rather than solely theoretical concepts. An action-oriented approach helps students acquire essential skills such as critical thinking, communication, teamwork, and leadership. While an action-oriented approach offers numerous advantages, implementing it effectively requires careful consideration of several factors including ensuring adequate support from school administrators, providing access to relevant resources, and developing partnerships between schools and local organizations or businesses. Educators should strive to foster inclusive environments where all stakeholders feel valued and have opportunities to participate in environmentally focused initiatives. Successful implementation demands thorough planning, ongoing professional development, collaborative efforts among educators, policymakers, and stakeholders at various levels.

In the discussions of Holst (2023), the concept of embedding sustainability throughout educational institutions via comprehensive and holistic approaches is referred to as whole institution approaches that emphasize integrating sustainability into every aspect of school life, including curriculum, management, operations, and community partnerships. A whole school approach aims to make sustainability central shifting away from seeing sustainability as merely an additive element and instead viewing it as integral to the overall mission and functioning of the educational institution. Effective whole institution approaches require collaboration and cooperation among multiple stakeholders, including governments, policymakers, and educational leaders. Curricula should incorporate sustainability competencies as core learning outcomes, and educators should receive specialized training to effectively teach these skills. Existing green initiatives serve as valuable resources for promoting sustainability within educational institutions.

The University of Sussex (2023) reported on sustainability and the United Nation's Sustainable Development Goals (SDGs) wherein their research spans various disciplines, addressing numerous SDGs simultaneously. Collaborates extensively with external partners, such as government agencies, NGOs, and industry leaders, to develop innovative approaches to complex challenges. Significantly, understanding the relationships between individual goals and developing strategies to maximize synergies and minimize conflicts is necessary. Educational leaders must have commitment to staying abreast of current trends and contributing meaningfully to the global conversation surrounding sustainable development.

As Smith and Brown (2022) discussed the perspectives and attitudes of school heads regarding environmental education in shaping curriculum priorities and supporting environmental literacy. Leadership is important in driving environmental education initiatives and creating supportive environments. However, there are potential obstacles and enablers that shape their decisions related to environmentally focused initiatives. Attitudes of educational leaders' impact student engagement and performance wherein there is a need for preparation and recognition of programs as a critical component of university sustainability and educational leadership. Targeted professional development and support could improve capacity of educational leaders to promote environmental initiatives and foster a culture of environmental stewardship within universities.

The European Commission (2021) reported the importance of skills development in transitioning to a greener economy and seizing employment opportunities with an emphasizes on the need for integrating green skills into various sectors like universities to address the challenges posed by climate change and foster sustainable growth. The role of skills development in facilitating the transition to a greener economy requires not only in traditional green jobs but also in transforming every job into a more sustainability-minded role. Hence, educational leaders are encouraged to develop and possess green skills. Moreover, the demand for green skills is increasing globally which also indicates an imminent shortage of green skills in the workforce. Hence, the present study is relevant as it stresses the need for training provision to meet the evolving skill needs related to energy efficiency, renewable energies, and other sectoral institutions leading to a green-inspired progress.

The National Association of Secondary School Principals (2023) advocate for school and student leader development that encompasses environmental awareness and sustainability within its broader scope of education reform that educators and administrators working towards greener and healthier schools. The American Educational Research Association (2023) aims to bring together researchers, educators, policymakers, and experts to advance environmental education research and promote education in the face of environmental challenges in relation to educational change and the role of teachers in leading educational reform. Hence, the present study would like to provide insights on how educational leaders attitude towards sustainability.

The United Nations Environment Programme (2022) advocates for advancing sustainability in education through various initiatives aimed at educational leaders aligned with the UN's Sustainable Development Goals (SDGs) capable of finding innovative solutions for ecosystem management and contributing to a sustainable and inclusive green economy. Embracing a lifelong learning approach integrates climate education into school curricula, technical and vocational education, workplace skills development, teaching materials, pedagogy, and assessment. The goal is to increase the number of countries incorporating climate education in school curricula that supports educational leaders through integrated climate education.

As Sudan and Zeidler (2022), the role of educational leaders in promoting sustainable development within their institutions is characterized by its vast size, diverse student population, and challenges related to social inequality. Leaders who actively engaged in implementing initiatives aimed at reducing waste, conserving resources, and raising awareness among students and staff regarding environmental concerns are able to meet objectives but some barriers were also experienced such as limited budgets, lack of training opportunities, and insufficient support from local governments. There are opportunities for enhancing educational leadership for sustainability particularly through targeted professional development programs, increased collaboration between schools, and stronger partnerships with government agencies and nonprofit organizations.

Muller, et. al. (2020) provides a framework to assist in leading schools towards sustainability. It outlines four stages in integrating sustainability into schools effectively. Leadership for sustainable schools emphasize the relevance of providing training and professional development programs to enhance the capacity in leading sustainability efforts. Education for sustainability encompasses environmental concerns and cultural issues highlighting the broad scope of sustainable education initiatives.

Kang and Kim (2021) discussed the effects of green organizational citizenship behavior on employee performance and well-being through a moderated mediation model indicating that when employees perceive higher support for their green efforts, their self-esteem and well-being improve. Green organizational citizenship behavior is defined as voluntary behavior aimed at benefiting the organization or its members beyond formal job requirements. Effective educational leadership can influence green organizational citizenship behavior through recognition and reward systems, creating a supportive climate and fostering collaboration. Implementing incentives and acknowledgments for exemplary green behavior encourages others to follow suit. Moreover, providing resources, training, and guidance allows

educators and students to develop skills necessary for implementing green practices effectively. Encouraging interdisciplinary cooperation among stakeholders facilitates the development and implementation of innovative solutions to environmental challenges.

Similarly, Santos et al. (2021) explores the relationship between organizational citizenship behavior and well-being at work emphasizing the importance of conscientiousness and civic virtue in fostering a healthy work environment and enhancing employee well-being. Furthermore, Chen et al. (2023) investigates the impact of green mindfulness on green organizational citizenship behavior that influences green intrinsic motivation mediating this relationship. The importance of fostering green mindfulness and leadership styles help promote environmentally responsible behaviors in organizations.

Green work engagement refers to employees' positive emotional connection with their organization's environmental efforts (Liu, et. al, 2021). Effective educational leadership can foster this type of engagement through several approaches like leading by example, promoting shared vision and encouraging participation. Educators who demonstrate environmentally responsible behaviors serve as role models, inspiring students and staff members to engage more deeply with environmentally focused initiatives. Communicating clear goals related to environmental stewardship, leaders help create a sense of purpose and offering opportunities for involvement in decision-making processes. The impact of environmental transformational leadership and green human resource management practices on employees' pro-environmental behavior and work engagement is to facilitate employees' green behavior and enhance work engagement.

As emphasized by Gundogdu and Yildirim (2021) that the relationship between green organizational identity and green organizational citizenship behavior influence green development performance. It is necessary to have understanding on how fostering a green organizational identity and encouraging environmentally responsible behaviors among employees. Also, Ferreira and Pinto (2021) discussed the concept of green inclusive leadership and its role in leading organizations towards sustainability. This concept fosters a harmonious atmosphere within organizations by promoting employee awareness of environmental goals and green organization identification requiring leadership style involving openness to employee suggestions for green ideas, discussions on environmental goals, and acceptance of employee input on ecological challenges.

Dixon and O'Brien (2019) delve into the realm of transformative leadership for sustainability education, particularly focusing on its potential to empower change agents in developing countries. The case study presented by the authors sheds light on the critical role transformative leadership plays in fostering sustainable development and driving positive change within educational contexts.

The discussions by Dixon and O'Brien (2019) give emphasis on the significance of transformative leadership in equipping change agents with the necessary skills, knowledge, and mindset to address complex sustainability challenges effectively. The transformative potential of leadership in empowering individuals to challenge existing norms, inspire collective action, and drive systemic change fostering a culture of sustainability within educational settings, thereby enabling change agents to navigate socio-environmental

complexities and drive meaningful impact.

2. Statement of the Problem

The researcher assessed the university sustainability and empowerment on educational leadership in China as basis for creation of environmental program for sustainable progress among universities.

Specifically, the researcher provides answers to the following questions;

1.What is the profile of the respondents in terms of;

1.1Age;

1.2Sex; and

1.3Years in Service?

2.What is the assessment of the respondents on the environmentally focused initiatives implemented in the participant-university in China as to;

2.1Environmental Management System;

2.2Public Participation;

2.3Social Responsibility; and

2.4Sustainability Teaching and Research?

3.Is there a significant difference on the assessment of the respondents on the environmentally focused initiatives implemented when profile is used as test factor?

4.What is the assessment of the respondents on the level of effectiveness of university sustainability towards green-driven progress as to;

4.1University Leadership;

4.2Sustainability-Oriented Education;

4.3University Culture;

4.4Sustainability Knowledge;

4.5Sustainability Commitment;

4.6Attitude towards Sustainability; and

4.7Sustainability Activities Participation?

5.Is there a significant difference on the assessment of the respondents on the effectiveness of university sustainability when grouped according to profile?

6.What is the assessment of the respondents on the level of effectiveness of educational leadership towards green-driven progress in terms of;

6.1Green Work Engagement;

6.2Green Organizational Citizenship Behavior;

6.3Green Organizational Identification; and

6.4Green Inclusive Leadership?

7.Is there a significant relationship between effectiveness of university sustainability and educational leadership towards green-driven progress?

8.Based on the results of the study, what environmental program can be created for green-driven progress that will strengthen university sustainability and empower educational leadership?

3. RESULTS AND DISCUSSIONS

Table 1. Profile of the Respondents

AGE	FREQUENCY	PERCENTAGE
25 and below	1	.2
26-35	78	16.5
36 and above	394	83.3
Total	473	100.0
SEX	FREQUENCY	PERCENTAGE
Male	303	64.1
Female	170	35.9
Total	473	100.0
YEARS IN SERVICE	FREQUENCY	PERCENTAGE
Less than 5	31	6.6
5-10	157	33.2
11-15	100	21.1
15 and above	185	39.1
Total	473	100.0
CLASSIFICATION	FREQUENCY	PERCENTAGE
Department Head and Dean	120	25.4
Teachers and Professors	353	74.6
Total	473	100.0

Table 1 shows the Profile of the Respondents based on age, sex, years of service, and classification.

As to Age. Data shows that out of 473 respondents 394 or 83.3%, are 36 years old and above. Hence only 1 respondent, or 0.2%, is 25 years old or younger. This shows that the majority of the respondents are more experienced individuals.

As shown in the data, the high frequency of respondents is aged 36 and above. This implies that the study reflects insights from individuals with mature and seasoned

respondents, which may enhance the quality of the study's findings on sustainability and leadership. According to Ekaterini et al. (2023) older leaders often bring a wealth of experience and knowledge to educational leadership, which makes them equipped to handle complex challenges. In contrast, the underrepresentation of younger voices, as noted by Aung and Hallinger (2022), maybe a reflection of leadership structures that typically favor more established leaders. This exclusion can limit the adoption of innovative, transformative strategies that younger educators might bring

to the table. However, the disparity could also mean that younger individuals are not yet positioned in leadership roles where they can influence sustainability. This aligns with Sengur, (2023) study which indicates younger individuals are increasingly aware of and engaged in sustainability issues, yet they often find themselves excluded from the decision-making processes that determine sustainability policies and practices. This underscores that there may be a need to create more inclusive leadership opportunities that allow for the integration of fresh perspectives from younger professionals, ensuring a more balanced and forward-looking approach to sustainability in educational institutions.

The findings reveal a predominance of older respondents, which suggests a depth of experience in leadership and sustainability. To foster a more comprehensive approach to sustainability in educational institutions, it is essential to create inclusive leadership opportunities that empower younger individuals to contribute their insights and ideas. By doing so, they can ensure a more diverse and innovative approach to sustainability that benefits from the combined strengths of all age groups, leading to a more well-rounded and future-focused approach to sustainability.

As to Sex. Data reveals that 303 or 64.1% are male out of 473 respondents. Hence, 170 or 35.9%, are female. This shows that the study is predominantly male.

Although the majority of respondents are male, a study by Berber et al. (2022) underscores that leadership effectiveness is not inherently tied to gender. Both male and female leaders can exhibit transformational leadership traits that foster organizational success and sustainability. Despite the male dominance in this study, it's important to recognize that effective sustainability leadership may not be limited by gender differences. Likewise, the lower number of female respondents implies that structural barriers may be hindering women from advancing to leadership roles in education. This imbalance can impact the approach to sustainability, as gender-diverse leadership teams often contribute a broader range of perspectives to problem-solving. The study highlights systemic challenges, such as gender bias, limited mentorship opportunities, and cultural expectations, which constrain women's progress in leadership (Dagnew et al., 2020). Similarly, Maheshwari and Nayak (2020) found that factors like work-life imbalance and negative perceptions of women leaders hinder their career advancement in Vietnamese higher education institutions. These findings emphasize the need for educational institutions to actively address these barriers to achieve gender equity in leadership positions.

To foster a more balanced and effective leadership in educational institutions, it is crucial to address the structural barriers that limit women's advancement to leadership roles. Implementing initiatives such as gender-sensitive mentorship programs, leadership development opportunities for women, and policies promoting work-life balance can help bridge this gap. By doing so, institutions can leverage the strengths of both male and female leaders, fostering a more inclusive and holistic approach to sustainability and organizational success.

As to Years in Service. Data shows that most respondents have served for 15 years or more, with 185 individuals or 39.1% of the total while the smallest group has less than 5 years of experience with 31 or 6.6%. This shows a predominance of highly experienced individuals within the study.

The significant representation of respondents with 15 or more years of service highlights a predominance of

individuals in the later stages of their careers, characterized by extensive experience in leadership and sustainability. According to IŞIKTAŞ (2023), individuals at this stage typically demonstrate higher leadership effectiveness, bolstered by greater confidence and self-efficacy. Their deep understanding of sustainability challenges enables them to make informed decisions that can drive impactful initiatives. On the other hand, the smaller group of respondents with less than 5 years of service represents those in the early stages of their careers. While they may lack extensive experience, these newer professionals often bring fresh perspectives and innovative ideas that are essential for adapting to evolving challenges in education (Park, 2024). Therefore, integrating insights from both career stages can create a more dynamic and effective approach to sustainability initiatives within universities.

The diverse career stages of respondents underscore the importance of fostering collaboration between seasoned professionals and new in the service in the field. Leveraging the experience of long-serving individuals alongside the innovative ideas of those in the early stages can enhance sustainability initiatives within universities. Educational institutions may create platforms for mentorship and knowledge exchange, ensuring that the valuable insights of experienced leaders are shared while also nurturing the fresh perspectives of emerging professionals. This approach can drive more comprehensive and adaptive sustainability strategies. This will benefit the entire academic community.

As to Classification. The data reveals that 353 respondents, or 74.6%, are teachers or professors, while 120, or 25.4%, are department heads or deans. This indicates that most insights are coming from individuals involved directly in teaching rather than from administrative leaders. Almadhkhori et al. (2021)

The higher number of teachers and professors in the study ensures that the perspectives of individuals who are deeply engaged in the daily educational activities and direct implementation of sustainability and leadership practices are well-represented. As noted by Kumari & Dash (2022), teachers and professors are crucial for applying innovative educational practices and can provide a detailed view of how sustainability initiatives are integrated into the curriculum and daily operations. Their involvement in student-centered education makes them essential contributors to understanding the practical challenges and successes of sustainability initiatives within classrooms. However, the lower representation of department heads and deans implies that the study may not fully capture the strategic, high-level perspectives that are crucial for formulating and implementing overarching sustainability policies within the institutions. Wulandari (2022) highlights the role of transformational leadership in encouraging a more dynamic and effective teaching and learning process, which is often spearheaded by administrative leaders such as department heads and deans. Their input is vital for aligning educational goals with institutional strategies and fostering an environment conducive to sustainable practices. This disparity in representation underscores the need for balanced input from both administrative leaders and teaching staff to ensure comprehensive and effective sustainability leadership within universities (Litz & Blaik-Hourani, 2020). While teachers and professors contribute valuable insights from the ground level, the inclusion of more administrative perspectives would enhance the study by integrating strategic

leadership views, which are essential for long-term sustainability planning and policy-making.

To address this gap, future studies considered a more balanced sampling that equally represents both teaching and administrative leaders. This ensures that sustainability initiatives are guided by a holistic approach, incorporating practical and strategic insights. This alignment can lead to the creation of well-rounded sustainability programs that are effectively supported by both operational and leadership perspectives, contributing to a stronger institutional commitment to sustainability (Palar et al., 2023).

4. Conclusion

Based on the significant findings of the study, the following conclusions were established:

1.The profile of the respondents reveals that the majority are experienced, mature professionals at their late career stage, predominantly male, and primarily teachers or professors. This highlights the need for more inclusive leadership development programs that encourage diversity in age, gender, and professional roles to ensure a broader and more innovative approach to sustainability, while also leveraging the experience and expertise of those at their late career stage.

2.The result implies that while universities demonstrate strength in public participation and social responsibility within their environmentally focused initiatives, there is a clear need for improvement in the areas of environmental management and sustainability teaching and research. The moderate implementation of these latter areas shows that, although progress has been made, universities may not be fully using leadership skills or supporting complete sustainability education.

3.There are significant differences in the assessment of environmentally focused initiatives based on years of service and classification, indicating that respondents' perceptions vary according to their career stage and role. This highlights the importance of considering different perspectives when planning environmental programs. However, no significant difference is found when considering age and sex, indicating these factors do not significantly influence their views on the initiatives implemented.

4.The findings highlight that university sustainability initiatives, including university leadership, sustainability-oriented education, university culture, sustainability knowledge, sustainability commitment, attitude towards sustainability, and sustainability activities participation, are effective in promoting green-driven progress. However, challenges remain in sustainability commitment and attitudes, indicating a need for ongoing improvements to enhance the overall effectiveness of these initiatives. This underscores the importance of continuous efforts to strengthen the impact of sustainability practices within the university.

5.The result implies that respondents' views on university sustainability initiatives are influenced by their years of service and job classification. This indicates that career experience and roles shape how they perceive these efforts. However, since no significant differences are found based on age or sex, these demographic factors do not appear to affect how respondents evaluate the effectiveness of sustainability initiatives. This highlights the importance of considering

professional experience when assessing perceptions of university sustainability.

6.Educational leadership components such as green work engagement, green organizational citizenship behavior, green organizational identification, and green inclusive leadership are effective in promoting green-driven progress, but further improvement is needed, especially in organizational identification. This means that a stronger sense of connection to green initiatives within the organization is necessary to enhance sustainability progress. This highlights the importance of reinforcing organizational identification to further strengthen green leadership efforts.

7.There is a statistically significant and very strong positive relationship between the effectiveness of university sustainability efforts and educational leadership in driving green-driven progress. This underscores the critical role of leadership in fostering sustainable practices and initiatives within universities, indicating that enhancing leadership capabilities can contribute to more successful sustainability outcomes.

8.The findings highlight the need to develop an environmental program aimed at enhancing green-driven progress by strengthening university sustainability efforts and empowering educational leadership. This program would serve as a vital tool in promoting more effective sustainability practices and leadership engagement across institutions.

References

- [1] Tshivhase, L. and Bisschoff, C. (2023). A conceptual model to measure and manage the implementation of green initiatives at South African public universities. Retrieved from <https://doi.org/10.3389/frsus.2023.1237514>.
- [2] Hariram, N. et., al, (2023). Sustainalism: An Integrated Socio-Economic-Environmental Model to Address Sustainable Development and Sustainability. Retrieved from <https://doi.org/10.3390/su151310682>.
- [3] Loorbach, D.A., Wittmayer, J. Transforming universities. *Sustain Sci* 19, 19–33 (2024). <https://doi.org/10.1007/s11625-023-01335-y>.
- [4] Dawadu, A. et. al. (2023). Developing an integrated participatory methodology framework for campus sustainability assessment tools (CSAT): A case study of a sino-foreign university in China. Retrieved from <https://doi.org/10.1016/j.progress.2023.100827>.
- [5] Wang, A. (2021). Enhancing Sustainability Education in China's Secondary Schools. Retrieved from <https://news.climate.columbia.edu/2021/05/04/sustainability-education-china/>.
- [6] Zhu, C. and Caliskan, A. (2021). Educational Leadership in Chinese Higher Education. *Chinese Education & Society*, 54:5-6, 161-170, DOI: 10.1080/10611932.2021.1990616.
- [7] Kinoshita, A., et. al. (2019). Effectiveness of Incorporating the Concept of City Sustainability into Sustainability Education Programs. Retrieved from <https://doi.org/10.3390/su11174736>.
- [8] Kang, S., & Kim, J.-H. (2021). The effects of green organizational citizenship behavior on employee performance and wellbeing: A moderated mediation model. *Journal of Cleaner Production*, 289(Part B), 123262. <https://doi.org/10.1016/j.jclepro.2021.123262>.