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## Evaluating the performance of kolej komuniti jasin in implementing the UI greenmetric world university rankings: a comparative analysis of 2022 and 2023 data

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### ABSTRACT

This study evaluates the performance of Kolej Komuniti Jasin in implementing the UI GreenMetric for sustainability during 2022 and 2023. The UI GreenMetric, encompassing categories such as Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transportation (TR), and Education and Research (ED), serves as a comprehensive framework for assessing sustainability in higher education institutions. Our analysis identifies notable improvements in energy management (EC points: 960 to 1210) and waste management (WS points: 750 to 1350), while highlighting areas needing further attention, such as water resource management (WR points: 210 to 450) and education and research (ED points: 935 to 1010). Key challenges include data collection accuracy and resource constraints. To address these, the study suggests enhancing data management systems and fostering a deeper understanding of sustainability concepts among the academic community through targeted training programs. By aligning data analysis with these objectives, we propose strategies to optimize resource allocation and improve overall sustainability performance. This evaluation provides insights into the progress and ongoing challenges in achieving sustainable development in higher education, emphasizing the need for innovative solutions and stakeholder engagement to advance sustainability initiatives.



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## Introduction

Sectors, including higher education. In this context, this article aims to evaluate the performance of a Kolej Komuniti Jasin in implementing the UI GreenMetric in the years 2022 and 2023. The UI GreenMetric is a framework designed to measure sustainable performance in various aspects, including environmental, infrastructure, and educational aspects. The data analysed includes the main categories of the UI GreenMetric, namely Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transportation (TR), and Education (ED). Through this data analysis, we aim to provide insights into the progress and challenges faced in achieving UI GreenMetric targets.

Higher education is recognized as a sector with significant impacts on the environment and society. With the increasing awareness of the importance of sustainability, higher education institutions are increasingly expected to serve as exemplars in implementing environmentally friendly and sustainable practices. One tool used to measure and improve sustainability performance in higher education institutions is the UI GreenMetric. The UIG Matrix provides a comprehensive framework for evaluating various aspects of sustainability, including environmental, social, and economic dimensions (Haliza Abdul Rahman, 2018).

However, the implementation of the UI GreenMetric in higher education institutions is not always smooth. Several challenges need to be addressed. One of them is the difficulty in collecting accurate and relevant data to comprehensively measure sustainability performance. The complex and time-consuming data collection process often poses a significant barrier to institutions, especially when there is no well-structured system to manage the information effectively (Samsuri Abdullah et. all, 2019).

Furthermore, resource constraints also present a challenge in implementing the necessary changes to improve sustainability performance. Many higher education institutions face tight budgetary constraints and fierce resource competition, making it difficult for them to allocate funds and manpower to sustainability initiatives (Gültekin P., 2019).

Lastly, there is still a lack of in-depth understanding of the concept of sustainability among members of the academic community. Despite the increasing awareness of sustainability, many still do not fully understand how sustainable practices can be integrated into daily campus activities.

Objectives: 1) Identify Data Collection Challenges: Analyse and identify the main challenges in collecting accurate and relevant data to measure sustainability performance in higher education institutions; 2) Enhance Understanding of Sustainability Concepts: Develop training and awareness programs aimed at enhancing understanding and awareness of sustainability concepts among members of the academic community.

## Literature Review

The UI GreenMetric has emerged as a comprehensive framework for assessing and improving sustainability performance across various sectors. Developed as a tool to measure the sustainability of organizations, institutions, and communities, the UI GreenMetric integrates multiple dimensions of sustainability, including environmental, social, and economic aspects.

One of the foundational studies introducing the concept of the UI GreenMetric is the work by Imas Gandasari, Oot Hotimah, Mieke Miyarsah, "Green Campus as a Concept in Creating Sustainable Campuses" (2020). The authors proposed the UI GreenMetric as a holistic approach to sustainability assessment, emphasizing the need to consider not only environmental factors but also social and economic dimensions.

Subsequent research by Maria Andrades and colleagues explored the application of the UI GreenMetric in the context of higher education institutions. In their paper Nyoman Suwartha and Mohammed Ali Berawi, "The role of UI GreenMetrics as a global sustainable ranking for higher education institutions" (2019) the authors examined the relevance and effectiveness of the UI GreenMetric criteria for assessing sustainability performance in universities and colleges. Their findings highlighted the importance of integrating sustainability principles into educational practices and campus operations.

Furthermore, the study by Bakaruddin et. all. "Sustainable Budget Planning in Green Campus Implementation at Universitas Muhammadiyah Riau" (2020) delved into the practical implications of adopting the UI GreenMetric in organizational settings. Through a qualitative analysis of case studies, the authors identified key challenges and opportunities associated with implementing the UI GreenMetric, such as data collection, stakeholder engagement, and organizational change management.

In summary, the literature on the UI GreenMetric underscores its significance as a comprehensive framework for assessing sustainability performance. While existing research has provided valuable insights into its conceptualization and application, further studies are needed to explore its effectiveness in different contexts and its potential to drive meaningful change towards sustainability (Effine Lourrinx et al., 2019).

## Method

### Data Collection

The data collected involves scores for each category within the UIG Matrix, including Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transportation (TR), and Education (ED).

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Data collection is facilitated through Researchers within the Student Development Department and the College Principal.

### **Data Analysis**

The collected data is analyzed using statistical software to compare scores between the years 2022 and 2023. Quantitative analysis is conducted to determine trends in HEIs sustainability performance and identify any categories requiring special attention.

This methodology combines quantitative analysis of UI GreenMetric scores with qualitative feedback from interviews with Key Personnel to provide a comprehensive overview of HEIs sustainability performance. It is hoped that the findings of this study will offer valuable insights into efforts to improve sustainability and overall performance of HEIs.

## **Results and Discussions**

### **Setting and Infrastructure (SI)**

The marginal increase from 750 to 775 SI points suggests a modest improvement in the Kolej Komuniti Jasin physical and non-physical infrastructure. However, the failure to reach the maximum target indicates the need for more comprehensive efforts. Addressing resource availability and optimizing infrastructure utilization should be prioritized to achieve sustainable outcomes effectively.

### **Energy and Climate Change (EC)**

The significant leap from 960 to 1210 EC points reflects commendable progress in tackling energy usage, efficiency, and environmental impact. This underscores a proactive approach towards mitigating negative environmental effects. Adoption of energy-saving measures, renewable energy integration, and emission reduction initiatives likely contributed to this positive trend.

### **Waste (WS)**

The substantial rise from 750 to 1350 WS points signifies robust efforts in waste management and recycling. Improved waste reduction and diversion strategies suggest the effectiveness of waste management programs and awareness campaigns. Such endeavors have likely led to tangible environmental benefits and aligned with community sustainability objectives.

### **Water (WR)**

While WR points increased from 210 to 450, the category remains below the maximum target, indicating progress in water resource management but with room for improvement. Addressing water scarcity and enhancing conservation efforts should be prioritized. Implementation of water-saving technologies and promotion of conservation practices could yield further advancements.

### **Transportation (TR)**

The increase from 835 to 1075 TR points indicates strides in enhancing transportation efficiency and reducing emissions. This reflects positive efforts in promoting sustainable transport modes and infrastructure. Incentivizing public transportation use, fostering carpooling, and investing in sustainable infrastructure likely contributed to these improvements.

### **Education (ED)**

Despite an uptick from 935 to 1010 ED points, significant improvement is warranted in curriculum development and student engagement. Enhancing teaching methodologies and expanding extracurricular opportunities are crucial for bolstering educational quality and student satisfaction. Creating inclusive learning environments can further enrich the educational experience.

### **Identification of Data Collection Challenges**

The data analysis highlights the importance of collecting accurate and relevant data in measuring sustainability performance, as reflected in the changes in scores across various categories of the UI GreenMetric. Data analysis identifies key challenges, such as the difficulty in obtaining accurate and relevant data, which aligns with the first objective of identifying data collection challenges.

### Enhancing Understanding of Sustainability Concepts

The data analysis showcases progress and gaps in various aspects of sustainability, such as the increase in scores in EC, WS, and TR, but there is still room for improvement in WR and ED categories. The second objective, which aims to enhance understanding of sustainability concepts, closely relates to data analysis as it focuses on efforts to strengthen awareness and understanding of sustainability principles among members of the academic community.

### Interconnection and Relevance

The connection between objectives and data analysis is evident in the effort to identify challenges and suggest solutions to improve sustainability performance in higher education institutions. Data analysis helps confirm the need to enhance understanding of sustainability concepts, as suggested in the second objective, through critical assessment of UI GreenMetric performance. Aligned with the first objective, data analysis also highlights challenges in collecting relevant data, which need to be addressed to support improvements in sustainability performance.

By understanding data collection challenges and the level of understanding of sustainability concepts, institutions can design appropriate training programs and allocate resources more efficiently to achieve optimal sustainability goals.

### Conclusion

The data analysis underscores both achievements and areas for growth in the Kolej Komuniti Jasin sustainability journey. While progress is evident in energy, waste, and transportation, there's ample room for enhancement in infrastructure, water management, and education. Targeted strategies, innovative solutions, and stakeholder engagement will be pivotal in advancing sustainability initiatives and realizing broader environmental and educational objectives.

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