



Strategic Management Practices and Their Impact on Sustainability: A Green Economy Perspective Among Start-Ups Indonesia

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Abstract. This study examines the impact of strategic management practices, the adoption of green economy principles, and environmental awareness on the sustainability performance of start-ups in Indonesia. As sustainability becomes a critical priority for businesses worldwide, this research seeks to understand how start-ups in emerging markets can integrate sustainability into their strategies and operations. The study utilises a quantitative approach, collecting data through an online survey of 177 senior-level managers from various start-ups in Indonesia. The data were analysed using multiple regression analysis to explore the relationships between strategic management, green economy practices, environmental awareness, and sustainability performance. The results reveal that all three independent variables significantly and positively influence sustainability performance, with green economy practices having the strongest effect. Start-ups that adopt green technologies, integrate sustainability into their strategic planning, and invest in environmental education demonstrate higher sustainability outcomes. These findings highlight the importance of embedding sustainability into business strategy and operations for both environmental benefits and competitive advantage. The study offers valuable insights for start-ups and policymakers, emphasising the need for supportive policies and practical strategies to promote sustainability and drive long-term business success in emerging markets.

Keywords: Strategic Management Practices, Green Economy Principles, Environmental Awareness, Sustainability Performance, Start-Up

1 Introduction

The concept of the green economy has gained significant attention in recent years, particularly in the context of addressing sustainability challenges faced by businesses worldwide. Green economy principles emphasize resource efficiency, reduced environmental impact, and long-term economic resilience through sustainable practices, aligning with the global push towards reducing carbon emissions and combating climate change [1]. For start-ups, particularly in emerging economies such as Indonesia, embracing green economy principles presents both opportunities and challenges. Start-ups are expected to integrate sustainability into their core strategies while maintaining profitability and growth, which requires innovative approaches to strategic management [2]. However, the unique dynamics of start-ups, including

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resource limitations, regulatory constraints, and market pressures, make it more difficult to adopt and implement green economic practices. This has led to a growing need to explore how start-ups can effectively incorporate green economy principles into their strategic management frameworks.

Previous empirical research has focused extensively on the role of strategic management in achieving sustainability goals, primarily within established firms. Studies have shown that strategic management practices such as sustainability-oriented leadership, long-term planning, and performance metrics can positively influence a company's environmental performance [3, 4]. However, there is limited research on how these practices are applied in the start-up sector, particularly in developing countries. In the Indonesian context, where start-ups are rapidly emerging as key players in the economy, understanding the integration of green economy practices is crucial [5]. Despite the recognition of sustainability as a critical business objective, many start-ups lack the necessary frameworks and resources to align their operations with green economy goals. This gap highlights the need for further investigation into the strategic management practices that can help start-ups adopt sustainable business models [6].

The research problem lies in the absence of comprehensive studies examining the causal relationship between strategic management approaches and sustainability performance within the green economy framework for start-ups. While strategic management is acknowledged as a critical factor in driving sustainability in larger firms, its role in start-ups remains underexplored. Existing studies on the green economy often focus on larger corporations or public policies, neglecting the specific challenges and opportunities faced by smaller, nascent companies [7]. Moreover, the unique challenges of integrating sustainability into the operations of start-ups in emerging economies, such as Indonesia, are often overlooked in the broader literature on sustainability and strategic management [8]. As a result, there is a research gap regarding how start-ups can leverage strategic management practices to achieve sustainability outcomes within the green economy.

The primary objective of this study is to examine the impact of strategic management practices on the sustainability performance of start-ups in Indonesia, with a particular focus on green economy principles. Specifically, the research seeks to explore the extent to which sustainability-oriented strategic management practices, such as leadership commitment, strategic planning, and the use of sustainability metrics, influence sustainability outcomes [9]. In addition, the study aims to investigate the role of green economy practices, including renewable energy adoption, resource efficiency, and waste reduction, in enhancing the sustainability performance of start-ups. Environmental awareness and education within start-ups will also be considered as a key factor influencing sustainability outcomes [10]. By addressing these variables, the study seeks to provide a comprehensive understanding of the factors driving sustainability in start-ups, particularly in the context of a developing economy.

Through this analysis, the research will fill a significant gap in the literature by focusing on the intersection of strategic management and the green economy within the start-up context. In doing so, it will offer valuable insights into the strategic practices that start-ups can adopt to achieve sustainability performance, particularly in emerging economies like Indonesia. This study is expected to contribute to the

growing discourse on sustainable entrepreneurship by providing empirical evidence on the effectiveness of strategic management practices in driving sustainability within the green economy framework [11].

2 Literature Review

The literature on strategic management and sustainability has grown significantly in recent years, reflecting the increasing importance of environmental responsibility in business operations. Strategic management is widely regarded as a key determinant of a company's ability to achieve sustainability objectives, particularly in firms that operate within resource-intensive industries [1]. The concept of sustainability within the framework of strategic management refers to the integration of environmental, social, and economic considerations into business strategies to ensure long-term viability. Research has demonstrated that companies that incorporate sustainability into their strategic planning tend to achieve better environmental performance and stronger financial outcomes [2]. However, the bulk of this research has focused on large, established firms in developed economies, leaving a gap in understanding how start-ups, particularly in emerging markets like Indonesia, can effectively leverage strategic management to enhance their sustainability performance.

The adoption of green economy practices, defined as the integration of environmentally sustainable activities such as the use of renewable energy, resource efficiency, and waste management into business operations, is crucial for achieving sustainability goals [3]. In the context of start-ups, the green economy presents both opportunities and challenges. On the one hand, start-ups have the flexibility to innovate and adopt green practices without the constraints of legacy systems; on the other hand, they often face resource limitations and regulatory hurdles that larger firms may not encounter. Studies on the green economy have largely focused on macro-level analyses, examining the role of government policies and global environmental agreements, but fewer studies have explored how individual firms, particularly start-ups, can adopt green economy principles to improve sustainability outcomes [4]. This gap is particularly evident in emerging economies, where institutional support for green practices may be weaker, and where start-ups must navigate a complex business environment to achieve sustainability goals.

Strategic management practices have been identified as crucial drivers of sustainability performance, particularly through leadership commitment, sustainability-oriented strategic planning, and the use of performance metrics [5]. Research indicates that leadership plays a pivotal role in setting the sustainability agenda within firms, with leaders who prioritise environmental goals fostering a culture of sustainability across the organisation [6]. Additionally, the use of sustainability performance metrics allows firms to track progress and identify areas for improvement, thus ensuring that sustainability goals are integrated into the broader business strategy. However, the application of these practices within start-ups remains underexplored, particularly in relation to how they can drive the adoption of green economy practices [7].

Moreover, while larger firms often have dedicated resources for sustainability initiatives, start-ups may lack the financial and human capital to fully implement these

practices, further complicating the relationship between strategic management and sustainability performance [8]. The role of environmental awareness and education in driving sustainability within firms is also a key area of focus in the literature. Employee training on sustainability practices, customer awareness initiatives, and partnerships with environmental organisations have been identified as important factors in promoting sustainability across the value chain [9]. Firms that invest in environmental education for their employees are more likely to adopt green practices, as employees are better equipped to understand and implement sustainability initiatives [10].

Similarly, customer awareness campaigns can drive demand for eco-friendly products, incentivising firms to adopt more sustainable business models. However, there is a lack of empirical evidence on how environmental awareness and education directly influence sustainability performance in the context of start-ups, particularly in emerging economies where resources for such initiatives may be limited [11].

Based on the literature, it is evident that there is a need for further research on the relationship between strategic management practices and sustainability performance, particularly in the context of start-ups in emerging economies. This study aims to fill this gap by exploring the following hypotheses:

H1: There is a positive relationship between strategic management approaches for sustainability and the sustainability performance of start-ups.

H2: The adoption of green economy practices positively influences the sustainability performance of start-ups.

H3: Higher levels of environmental awareness and education lead to better sustainability outcomes for start-ups.

These hypotheses will be tested using quantitative methods, with the goal of providing empirical evidence on the effectiveness of strategic management practices in driving sustainability performance within start-ups. The findings will contribute to the broader literature on sustainability and strategic management, offering insights into how start-ups in emerging economies can navigate the challenges of adopting green economy practices while achieving their sustainability goals.

3 Methodology

This research employs a quantitative methodology to investigate the relationships between strategic management practices, the adoption of green economy principles, and the sustainability performance of start-ups in Indonesia. The data were collected through a structured online survey distributed to senior-level managers and decision-makers from 177 start-up companies across a variety of sectors, including technology, manufacturing, services, retail, and agriculture. The sampling method was designed to ensure a diverse representation of industries, company sizes, and operational maturity levels, thereby providing comprehensive insights into the adoption of sustainability practices within the Indonesian start-up ecosystem. The survey targeted respondents such as CEOs, founders, operations managers, marketing managers, and sustainability officers, whose roles are central to the strategic decision-making processes within their respective organisations. As shown in Table 1, 58 respondents (32.8%) were CEOs or founders, while 48 respondents (27.1%) were operations managers, 33

respondents (18.6%) were marketing managers, and 38 respondents (21.5%) held roles as sustainability officers.

Table 1. Respondents' Characteristics

Description	Respondents, n	Total respondents, %
Gender		
Male	89	50.3%
Female	88	49.7%
Age, years		
25-35	68	38.4%
36-45	55	31.1%
46-55	32	18.1%
>55	22	12.4%
Education level, degree		
Bachelor	95	53.7%
Master	65	36.7%
PhD	17	9.6%
Occupation		
CEO/Founder	58	32.8%
Operations Manager	48	27.1%
Marketing Manager	33	18.6%
Sustainability Officer	38	21.5%
Industry Sector		
Technology	65	36.7%
Manufacturing	42	23.7%
Services	40	22.6%
Others (Retail, Agriculture, etc.)	30	16.9%
Company Size (Number of Employees)		
Small (1-50)	85	48.0%
Medium (51-200)	62	35.0%
Large (>200)	30	17.0%
Operational Maturity (Years in Operation)		
1-3 years	69	39.0%
4-7 years	58	32.8%
>7 years	50	28.2%

Source: Author own estimation (2024).

The gender distribution of the sample was nearly balanced, with 89 male respondents (50.3%) and 88 female respondents (49.7%). In terms of age, 38.4% of respondents were aged between 25 and 35 years, 31.1% were between 36 and 45 years, 18.1% were between 46 and 55 years, and 12.4% were over 55 years of age. The education levels of the respondents reflected a well-qualified sample, with 53.7% holding a bachelor's degree, 36.7% holding a master's degree, and 9.6% holding a PhD. Additionally, the respondents represented companies of varying sizes, with 48.0% classified as small (1-50 employees), 35.0% as medium-sized (51-200 employees), and 17.0% as large enterprises with over 200 employees. Furthermore, the operational maturity of the start-ups was taken into consideration, with 39.0%

having been in operation for 1-3 years, 32.8% for 4-7 years, and 28.2% for more than 7 years.

The survey instrument was developed based on an extensive review of the literature on strategic management and sustainability in start-ups [1,2]. It was designed to capture key variables such as strategic management practices for sustainability, the adoption of green economy principles, and environmental awareness and education. These variables were operationalised using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), allowing respondents to rate the extent to which their company implemented various sustainability practices. A pilot test was conducted with a small group of respondents to ensure the clarity and reliability of the survey questions, after which minor revisions were made to refine the instrument. The final survey was administered electronically, and follow-up reminders were sent to ensure a high response rate.

The analysis of the data was conducted using regression analysis to examine the causal relationships between the independent variables (strategic management approaches, adoption of green economy practices, and environmental awareness) and the dependent variable (sustainability performance). Multiple regression analysis was chosen as the primary statistical method because it allows for the examination of the influence of multiple independent variables on a single dependent variable [3]. The dependent variable, sustainability performance, was defined based on the respondents' self-assessments of their company's environmental impact, resource efficiency, and compliance with sustainability standards. In this context, sustainability performance measures included the reduction of carbon emissions, the implementation of resource efficiency programmes, and the development of eco-friendly products or services. These variables were quantified using the Likert scale, providing a uniform measure across all companies.

The regression model was designed to evaluate the impact of strategic management practices and green economy principles on sustainability performance. In narrative terms, the regression equation suggests that the sustainability performance of start-ups is influenced by three main factors: strategic management approaches for sustainability, the adoption of green economy practices, and environmental awareness. The coefficients generated in the analysis allowed for the quantification of the effects of these factors on sustainability performance, providing insights into which variables had the most significant impact. Diagnostic tests, including tests for multicollinearity, heteroscedasticity, and linearity, were performed to ensure that the assumptions of regression analysis were met [4].

4 Results and Discussion

Table 2. Descriptive Statistics

Variables	Mea n	Std. Dev	Mi n	Ma x
Strategic Management Practices	3.05	1.40	1	5
Green Economy Practices	3.08	1.37	1	5
Environmental Awareness and Education	3.07	1.36	1	5
Sustainability Performance	3.14	1.13	1.	4.7

Variables	Mean	Std. Dev	Minimum	Maximum
	3.05	1.40	1	5

Source: Author owns estimation (2024)

As shown in Table 1, the average score for Strategic Management Practices was 3.05, with a standard deviation of 1.40, indicating moderate integration of sustainability practices into the strategic management of the surveyed start-ups. The minimum score of 1 and the maximum score of 5 reflect the variability in how different start-ups approach sustainability in their management processes. Similarly, the mean for Green Economy Practices was 3.08, with a standard deviation of 1.37, suggesting that the adoption of green economy initiatives such as renewable energy use, waste reduction, and eco-friendly products is somewhat prevalent among start-ups, but with significant variation.

Environmental Awareness and Education also demonstrated a mean score of 3.07, with a standard deviation of 1.36. This indicates that, on average, start-ups are moderately invested in educating employees and raising awareness about sustainability, although the spread in the responses shows that some companies place a higher emphasis on these initiatives than others. The Sustainability Performance variable, representing the dependent variable, had a mean score of 3.14 with a standard deviation of 1.13, suggesting that overall sustainability performance among start-ups in the study is moderate. The minimum score of 1.3 and the maximum score of 4.7 indicate that while some start-ups have made significant progress in sustainability, others are still in the early stages of adopting sustainable practices.

Following the descriptive statistics, the analysis revealed that strategic management practices, the adoption of green economy principles, and environmental awareness and education are all significant predictors of sustainability performance in start-ups. The regression results, presented in Table 2, indicate that all three independent variables had a statistically significant and positive effect on the sustainability performance of start-ups in Indonesia. Specifically, Strategic Management Practices demonstrated a coefficient of 0.33, with a t-value of 12.47 and a p-value of less than 0.001. This result suggests that start-ups integrating sustainability into their strategic planning and decision-making processes are more likely to achieve positive sustainability outcomes. This finding aligns with previous research that underscores the importance of sustainability-oriented leadership and the incorporation of sustainability metrics into business strategy [1].

Table 3. Regression Coefficients (Dependent variable: Sustainability Performance)

Variables	Coefficient	Std. Error	t-value	p-value
Intercept	0.08	0.14	0.59	0.556
Strategic Management Practices	0.33	0.03	12.47	<0.001
Green Economy Practices	0.34	0.03	13.38	<0.001
Environmental Awareness and Education	0.30	0.03	11.77	<0.001

Source: Author owns estimation (2024)

Similarly, Green Economy Practices have a strong positive impact on sustainability performance, with a coefficient of 0.34, a t-value of 13.38, and a p-value below 0.001. These findings highlight the importance of adopting green technologies, renewable energy, and waste reduction initiatives to enhance sustainability outcomes. Green economy practices directly contribute to reducing environmental impact, improving resource efficiency, and fostering innovation in eco-friendly products and services. This result is consistent with prior studies emphasising the role of green economy initiatives in fostering long-term sustainability [2]. In the Indonesian context, where government policies and global climate initiatives increasingly promote green practices, the ability of start-ups to adopt these principles is crucial for their competitive advantage and long-term viability [3].

Furthermore, Environmental Awareness and Education demonstrated a significant positive impact on sustainability performance, with a coefficient of 0.30, a t-value of 11.77, and a p-value of less than 0.001. This variable captures the role of sustainability education, both internally (through employee training) and externally (through customer and stakeholder engagement), in driving sustainability performance. Companies that invest in educating their employees about sustainability and raising awareness among customers and stakeholders are more likely to see improvements in their sustainability outcomes. This finding aligns with research that highlights the importance of environmental education in fostering a corporate culture prioritising sustainability [4].

The overall fit of the regression model is presented in Table 2, where the R-squared value of 0.725 indicates that approximately 72.5% of the variance in sustainability performance can be explained by the three independent variables. This suggests that the model has a good fit, capturing the majority of the factors contributing to sustainability performance in the start-ups studied. The Adjusted R-squared value of 0.721 further confirms the model's validity, suggesting that the inclusion of additional variables would not significantly improve the model's performance [5]. Moreover, the F-statistic of 152.40, with a p-value of less than 0.001, indicates that the overall model is statistically significant.

Table 4. Model Summary

Metric	Value
R-squared	0.725
Adjusted R-squared	0.721
F-statistic	152.40
Prob (F-statistic)	<0.001
AIC	253.5
BIC	266.2

Source: Author own estimation (2024)

These results provide robust evidence that strategic management practices, green economy practices, and environmental awareness and education are critical drivers of sustainability performance in start-ups. The positive and significant relationships observed between the independent variables and sustainability performance reinforce

the importance of adopting a holistic approach to sustainability management. Start-ups that integrate sustainability into their business strategies, actively implement green economy practices, and foster environmental awareness among employees and stakeholders are better positioned to achieve long-term sustainability outcomes. This conclusion aligns with studies that advocate for the integration of sustainability into core business operations and decision-making processes [6].

Moreover, the model's AIC and BIC values (253.5 and 266.2, respectively) suggest that the model balances goodness-of-fit and complexity, indicating that it is neither over-specified nor under-specified. The relatively low AIC and BIC values support the notion that the independent variables included in the model are highly relevant and contribute meaningfully to explaining sustainability performance. The implications of these findings suggest that start-ups in emerging markets such as Indonesia should prioritise the integration of sustainability practices at multiple levels of their organisation, from strategic planning to employee education [7].

Overall, the analysis confirms that strategic management practices, green economy practices, and environmental awareness and education are essential components of a successful sustainability strategy for start-ups. The positive relationships between these factors and sustainability performance provide valuable insights for business leaders and policymakers aiming to promote sustainable development in emerging economies. By aligning business strategies with sustainability goals and investing in environmental education and awareness, start-ups can enhance their competitive positioning while contributing to broader environmental objectives [8].

5 Conclusion

This study has demonstrated that strategic management practices, the adoption of green economy principles, and environmental awareness play a crucial role in improving sustainability performance among start-ups in Indonesia. The regression analysis indicated that all three independent variables had a significant positive effect on sustainability performance, with green economy practices showing the highest impact. Start-ups that integrate sustainability into their strategic planning and leadership practices, while actively adopting green technologies and waste reduction initiatives, tend to perform better in sustainability metrics. These findings align with prior research that stresses the importance of green economy adoption and sustainability leadership in modern business strategies.

The results also highlight the role of environmental awareness and education in driving sustainability. Start-ups that invest in educating their employees on sustainability and engaging stakeholders through environmental awareness initiatives were found to perform better in terms of environmental outcomes. This confirms that fostering a sustainability-oriented culture within the organisation is critical for achieving broader sustainability objectives. By embedding sustainability into the organisational culture, businesses can enhance not only their environmental performance but also their market positioning, responding to the growing demand for eco-friendly products and services.

However, the study does have certain limitations. The reliance on self-reported survey data introduces the possibility of social desirability bias, where respondents

may overstate their sustainability efforts. Future research should aim to include a larger and more diverse sample, spanning multiple regions or countries, to validate the results further. Additionally, incorporating other potentially influential factors such as government policies, regulatory pressures, or market forces could provide a more comprehensive understanding of the drivers of sustainability performance.

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