Volume : 1 | Issue : 4 | Received- 11-07-2025 | Accepted- 14-07-2025 | published- 16-08-2025

UAI JOURNAL OF ECONOMICS, BUSINESS AND MANAGEMENT (UAIJEBM)

Abbreviated Key Title: UAI J Econ Bus Manag.

ISSN: 3049-2777 (Online)

Journal Homepage: https://uaipublisher.com/

Volume- 1 Issue- 4 (July-August) 2025

Frequency: Bimonthly

The Role of Radical Innovation, Eco-Management Control System on Environmental Performance at Novotel Karawang

Linci Putriyana[1*], Yanti[2], Ihsan Nasihin[3]

[1, 2, 3] Accounting Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang

Corresponding Author: Linci Putriyana

Accounting Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang

ABSTRACT

This research aims to test the influence of Innovation Radical and eco-management control system on environmental performance at Novotel Karawang Hotel. The descriptive-verificative quantitative approach, with saturated sampling technique involves 75 respondents who are employees of Novotel Karawang Hotel. Data were collected through a Likert scale questionnaire 1-5 and analyzed using Partial Least Square-SEM method with the assistance of SmartPLS 4 software. The research results show that Radical Innovation does not have a significant effect on environmental performance, whereas the eco-management control system has a positive and significant effect. This finding emphasizes that the success of environmental performance is more determined by a structured management control system than by radical innovation. This finding supports the Resource-Based View (RBV) theory which emphasizes that capabilities can only create an advantage if optimally utilized through a structured control system. This research implies that companies need to optimize environmental management control systems as a strategic step to achieve more effective sustainability in the hospitality industry

KEY WORDS: Radical Innovation, Eco-management Control system, Environmental Performance, Hotel

INTRODUCTION

The hospitality industry is one of the crucial sectors in the global economy, hotel operational activities often have a significant impact on the environment (Roselyne & Sarudin 2024). Environmental performance is now a primary focus in line with the increasing external environmental pressures from stakeholders and corporate awareness of the environment, which impacts climate change and the effects of human intervention on the environment (Tian et al., 2024). The continually increasing energy consumption year after year can have a negative impact on environmental quality, making its environmental performance less optimal (Alfian et al., 2023). The energy consumption costs at Novotel Karawang have fluctuated from year to year, negatively impacting environmental performance. From 2022 to 2023, energy consumption costs increased by 23.54%, while from 2023 to 2024, energy consumption decreased by 30.74%. This instability in energy management is caused by the management control system that has not been fully implemented and the less than optimal application of Radical Innovation, affecting environmental performance at Novotel Karawang (Novotel Karawang, 2024).

DOI: 10.5281/zenodo.17010683

Companies need to implement a management control system to enhance their ability to manage environmental aspects as a manifestation of their commitment to environmental concern (Dewi Fortuna Nur Rohmah et al., 2022). In this industry, Radical Innovation plays a crucial role in achieving business sustainability (Leliana et al., 2024). Radical innovation can drive the achievement of competitive advantage (Izotova et al., 2024). Furthermore, eco-management control systems are essential to ensure that environmental policies are consistently and effectively applied across all aspects of the company, thereby optimizing environmental performance while minimizing the impacts on the environment (Daromes et al., 2023).

Radical Innovation is an effort to commercialize a product or service through the application of technology that has a *significant* impact on society. Companies can strengthen their capacity to implement (Septyan et al., 2022) *Radical Innovation* by consistently improving operational performance processes. (Yu et al., 2023) *Radical Innovation* implemented by a company plays an important role in the journey towards business sustainability, as it can create new breakthroughs that increase *efficiency* while minimizing adverse effects on the environment. (Leliana et al., 2024)

Large companies tend to pay special attention to environmental performance reporting as a step to maintain their corporate reputation (Sutrisno et al., 2024). Environmental management control systems are an effective environmental strategy for improving corporate environmental performance, and the success of their implementation highly depends on the active role of environmental managers in directing all components of the organization to operate sustainably (Daromes et al., 2023). Environmental management includes efforts to ensure sustainable governance of natural resources while minimizing adverse effects on the environment, as well as implementing strategies that support sustainable principles (Ma'arif et al., 2023). Eco management control system (EMCS) is a management control system that integrates environmental aspects into the company's strategy and operations. By relying on action control, culture, personnel, and outcomes, eco-management The control system helps organizations implement sustainable business practices and improve environmental performance (Einhorn et al., 2024).

Environmental performance is a depiction of a company's commitment to protecting the environment and addressing issues arising from the negative impacts of its operational activities (Ros Juliana Lubis et al., 2023). Environmental performance can also be defined as a strategic approach adopted by companies to go beyond legal compliance by voluntarily implementing environmentally friendly practices in their business operations; this approach includes efforts to reduce negative environmental impacts and involves stakeholders to enhance sustainability (Avelyn N et al., 2023). Good environmental performance can be achieved through efforts to improve environmental conservation as well as the company's commitment to fulfilling its social and environmental responsibilities (Dwi Lestari et al., 2023).

Based on previous studies conducted by Suwandi Eduardus et al. (2023), it was revealed that the eco-management control system significantly affects environmental performance, supporting the company's transformation process to enhance company performance. Meanwhile, according to research by Wahyuni et al. (2024), environmental management accounting does not affect managerial performance, as many companies incur very low environmental costs. The study by Ardiansyah et al. (2021) concluded that there is a positive influence between environmentally friendly hotel management and the achievement of environmental performance. On the other hand, Pramudita Jane et al. (2023) revealed that there is no significant influence between green human resource management and environmental performance. The research by Maysaroh et al. (2023) indicated that environmental management accounting contributes to improving company performance. Previous research conducted by Antonini et al. (2024) revealed that companies with implemented environmental management control systems voluntarily benefit innovation. The study by Witjaksono et al. (2022) concluded that companies can enhance and improve their performance by selecting and implementing innovation strategies.

According to Dharmayanti et al. (2023), environmentally friendly innovation supports sustainable management control systems and has a positive impact on environmental, social, and economic sustainability. Adyuta et al. (2022) concluded that Radical Innovation has a significant impact on company performance, meaning that the higher the radical innovation implemented by a company, the higher the company's performance. Haris et al. (2021) mentioned that Innovation does not significantly affect the moderation of organizational strategy in achieving environmental performance, likely due to the fact that the organizational strategy has not been effectively realized. Santoso et al. (2024) mentioned that the company's efforts to minimize the impact of environmental damage by maximizing environmental efficiency have a positive impact on the company.

Research on the impact of innovation on environmental performance has been extensively conducted by various researchers; however, studies specifically discussing the role of Radical Innovation and eco-management control systems on environmental performance are still very limited. Thus, this research is directed towards studies related to Radical Innovation in the hospitality industry, with the novelty of this research being the use of eco-management control systems as a key factor of Radical Innovation as well as a variable that connects Radical Innovation and environmental performance. In addition, the research object used is Novotel Karawang. This study aims to analyze the role of Radical Innovation and eco-management control systems in improving environmental performance at Novotel Karawang.

RQ1: What is the Role of Radical Innovation on Environmental Performance?

RQ2: How does eco-management control system affect Environmental Performance?

RESEARCH METHODOLOGY

This research uses a quantitative method with descriptive and verificative approaches, with primary data obtained through questionnaires. The object of this research is the Novotel Karawang Hotel. The population in this study consists of employees of the Novotel Karawang Hotel, with a sample size of 75 employees. This research uses saturated sampling method (census). Data collection is carried out through questionnaires with a Likert scale of 1-5 to measure the respondents' perceptions of the variables used in this study. The variables in this research consist of two independent variables, namely Radical Innovation (X1), and eco-management control system (X2), and one dependent variable, which is Environmental Performance (Y). To analyze the correlation between dependent and independent variables, the analytical tool in this research uses SmartPLS 4. Data is analyzed using a Structural Equation Modeling approach based on Part. Data was analyzed using a Partial Least Squares Structural Equation Modeling (PLS-

DOI: 10.5281/zenodo.17010683

SEM) approach. The data processing technique involved testing the inner model analysis, the outer model analysis, and hypothesis testing based on the path coefficient values, t-statistics, and p-values.

Framework of Thought

The Company's Framework of Thought in the hospitality sector is facing pressure to improve environmental performance in line with the increasing public awareness of the impact of operations on sustainability (Mariawati et al., 2024). Efforts to enhance environmental performance will be more effective if supported by management control mechanisms that align with sustainability principles (Diaz, 2024). An eco-management control system serves as a control and evaluation mechanism that ensures company activities remain on track to achieve sustainable goals (Ratnawati & Aisyah, 2023).

On the other hand, radical innovation is considered capable of transforming the company's operational system as a whole, potentially driving better environmental performance, especially if supported by managerial control systems that align with sustainability objectives (Chistov et al., 2023). Based on the Resource-Based View (RBV) theory, radical innovation creates unique capabilities as a source of sustainable competitive advantage, while environmental management systems direct the optimal utilization of resources for sustainable goals. Thus, both variables are assumed to have an influence on environmental performance, both directly and indirectly (Huang & Xiao, 2023).

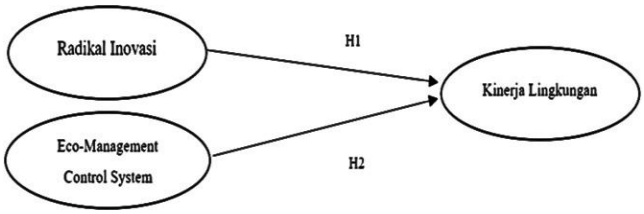

figure 2.1

Frame of Mind

The Role of Innovation in Environmental Performance

Radical innovation is an innovation that produces significant and comprehensive changes in a company's processes, technology, or business models, often efficiently and strategically replacing conventional practices (Utami et al., 2022). Environmental performance is a measure of a company's achievement in managing environmental impacts, both through regulatory compliance and the implementation of eco-friendly practices that exceed applied standards (Niandari et al., 2023). The application of radical innovation in the form of green processes can help companies improve their environmental performance by reducing emissions and sustainably managing negative environmental impacts through the use of advanced technology and eco-friendly techniques (Ningly et al., 2025).

Previous research conducted by Awaliyah et al. (2022) shows that radical green innovations can drive improvements in environmental performance and company competitiveness. This aligns with Abdillah et al. (2023) which states that radical innovations can enhance a company's environmental performance through the transformation of operational strategies, efficiency in resource use, and changes in organizational mindsets toward environmental issues. Research by Tomlins et al. (2021) indicates that radical innovations, applied to the Toyota Prius, significantly contribute to improving environmental performance through emission reductions and energy efficiency. Research by Adyuta et al. (2022) states that the higher the level of radical innovation implemented by a company, the higher the performance level of that company. Previous research Yahia et al. (2020) shows that the implementation of radical innovation can improve resource efficiency, reduce waste, and enhance the environment.

H1: It is suspected that there is a significant influence of radical innovation on environmental performance.

The Role of Eco-Management Control Systems on Environmental Performance

The eco-management control system is a control system that integrates the company's strategies, programs, and formal structures to support the achievement of sustainability goals through various operational instruments, including standards such as ISO 14001 (Petera et al., 2021). Environmental performance is the result achieved by a company in managing the relationship between operational actions, production, and service outcomes with the environment in which the company operates economically (Haris et al., 2021). The implementation of the eco-management control system can help companies encourage improvements in environmental performance by aligning sustainability goals with the decision-making framework and management processes (Bouchouit et al., 2025).

Previous research conducted by Antonini et al. (2024) states that the implementation of environmentally friendly practices is proven to be important in improving operational efficiency while also enhancing the environmental performance of companies. The study conducted by Pramono et al. (2023) also reveals that the implementation of control systems combined with environmental management accounting can guide companies toward more sustainability-oriented operations through systematic information structures and consistent control processes. The research investigated by Manurung et al. (2021) states that organizational effectiveness highly depends on the extent to which a company can adapt its strategies and controls to the external and internal conditions it faces. Based on the research Alastal et al. (2020), The governance of internal environmental control plays a crucial role in strengthening the effectiveness of the company's environmental strategy and impacts the improvement of environmental performance. According to Barawidjadja. (2020), an environmental management control system, whether formal or informal, significantly affects environmental performance, especially when supported by a conducive organizational culture.

H2: It is suspected that there is a significant influence of the eco-management control system on environmental performance.

RESULTS AND DISCUSSION

RESEARCH RESULTS

Variable description

X1: *Radical Innovation*

DOI: 10.5281/zenodo.17010683

Table 3.1
Description of Variables - Innovation Radicalness

Variabel	Butir	Mean	Median	Min	Max	Standard deviation	Excess kurtosis	Skewness
Radical Innovation	**X1.1**	4.280	4.000	2.000	5.000	0,447	2.422	-0.956
	X1.2	4.293	4.000	3.000	5.000	0,492	-0.892	-0.497
	X1.3	3.907	4.000	1.000	5.000	0,663	0,518	-0.842
	X1.4	4.067	4.000	2.000	5.000	0,560	-0.545	-0.436
	X1.5	4.173	4.000	2.000	5.000	0,444	0,535	-0.486
	X1.6	4.427	4.000	3.000	5.000	0,427	-0.548	-0.592
	X1.7	4.080	4.000	2.000	5.000	0,619	0,093	-0.853
	X1.8	4.347	4.000	2.000	5.000	0,513	1.049	-1.069

Source: Processed by SEM PLS (2025)

According to the data presented in the table above, the Innovation radical variable has the highest average (Mean) of 4.427 on the sixth indicator, with a standard deviation value of 0.427, indicating that this variable tends to have a high average of the measured indicators.

X2: *Eco-Management Control System*

Table 3.2
Description of Variables – Eco-Management Control System

Variabel	Butir	Mean	Median	min	max	Standard deviation	Excess kurtosis	Skewness
Eco - Management Control System	**X2.1**	4.427	5.000	2.000	5.000	0,470	0,692	-1.044
	X2.2	4.267	4.000	3.000	5.000	0,382	-0.396	0.036
	X2.3	4.267	4.000	2.000	5.000	0,524	1.336	-1.064
	X2.4	4.413	5.000	2.000	5.000	0,469	0,65625	-1.003
	X2.5	4.200	4.000	3.000	5.000	0,467	-0.799	-0.267
	X2.6	3.960	4.000	1.000	5.000	1.038	0.086	-0.793
	X2.7	4.360	4.000	3.000	5.000	0,434	-0.629	-0.453
	X2.8	4.133	4.000	2.000	5.000	0,548	-0.247	-0.578
	X2.9	4.080	4.000	1.000	5.000	0,678	0,401	-1.040

Source: Processed by SEM PLS (2025)

According to the data from test table 3.2, the eco-management control system variable shows an average of 4.427 on the first indicator with a standard deviation of 0.470, indicating a high consistency of average values across all indicators.

Evaluation of the Outer Model (Measurement Model)

Convergent Validity Test

Convergent validity aims to confirm that each indicator of these variables shows a high score as well as a positive correlation. The indicator is considered valid if the *loading factor* value is more than 0.70, while in the preliminary study the *loading factor value* of 0.50 – 0.60 is still acceptable. Indicators that do not meet these criteria need to be removed. The results of the first phase of convergent validity test in this study are presented in Table 3.3.

Table 3.3
Results of Outer Loading Convergent Validity Test Phase 1

Intsrumen	Radical Innovation	*Eco-management Control system*	Environmental Performance	Keterangan
X1.1	0,510			Invalid
X1.2	0.595			Invalid
X1.3	0.586			Invalid
X1.4	0.540			Invalid

DOI: 10.5281/zenodo.17010683

X1.5	0.605			Valid
X1.6	0.531			Invalid
X1.7	0.750			Valid
X1.8	0.500			Invalid
X1.9	0.650			Valid
X2.1		0.434		Invalid
X2.2		0.467		Invalid
X2.3		0.348		Invalid
X2.4		0.462		Invalid
X2.5		0.619		Valid
X2.6		0.277		Invalid
X2.7		0.658		Valid
X2.8		0.572		Invalid
X2.9		0.431		Invalid
Y1			0.541	Invalid
Y2			0.442	Invalid
Y3			0.597	Invalid
Y4			0.283	Invalid
Y5			0.796	Valid
Y6			0.480	Invalid
Y7			0.634	Valid
Y8			0.675	Valid
Y9			0.702	Valid

Source: Processed by SEM PLS (2025)

From the table above, the output *loading factor* value for the environmental performance variable has 6 statements with values of 0.510, 0.595, 0.586, 0.540, 0.531 and 0.500 < 0.60. Furthermore, the value of the *eco-management control system* variable has 7 statements with values of 0.434, 0.467, 0.348, 0.462, 0.277, 0.572 and 0.431, and finally the *Radical Innovation* variable has 5 statements with values of 0.595, 0.479, and 0.541 <0.60 must be deleted and retested. The following Figure 1 presents the results *of* the loading factor testing phase 2.

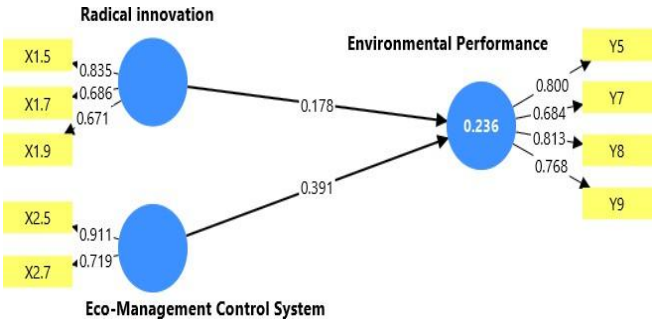

Figure 3.1

PLS Model – Alghorrhythm After Convergent Validity Test phase 2

Based on the test results in the image above, all indicators in the research variables contain a correlation coefficient above 0.60, which indicates that the indicator is valid and suitable for use in the preliminary study.

Avarage Variance Exraced (AVE)

The *Average Variance Extraxed* (AVE) test is used to assess the validity of each construct. A construct is considered valid if it has an AVE value of more than 0.50. Based on the results of the analysis, all research variables had an AVE value above 0.50. These findings show that the latent variables used in the study are able to present indicators validly and precisely.

Table 3.4
Avarege Variance Extraced (AVE)

	Avarege Variance Extraced (AVE)
Radical Innovation	**0,540**
Eco-Management Control System	**0.673**
Environmental Performance	**0,590**

Source: Processed by SEM PLS (2025)

The results from table 3.4 confirm that the AVE score in each *construct* has exceeded the minimum limit of 0.50. These values, namely 0.540 for Radical Innovation, 0.673 for *Eco Management*

DOI: 10.5281/zenodo.17010683

Control System, and 0.590 for environmental performance, indicate that most of the variance in the indicators is explained by the *respective constructs.* As shown in the AVE output data in table 3.4. So that the three *constructs* have adequate *convergent validity*. This means that the indicators used are able to present the *construct* consistently, so that the *construct* is feasible to continue in the next stage of model analysis.

Testing Reality With *Composite Reability* and *Cronbach's alpha*

The *Composite Reability* and *Cronbach's alpha* tests are used as tools to evaluate *construct consistency* based on indicator blocks. The construct is declared reliable if these two measurement values exceed the threshold of 0.70.

Table 3.5
Composite Reability dan *Cronbach's alpha*

	Composite Reability (rho_c)	*Cronbach's alpha*
Radical Innovation	**0.777**	**0,617**
Eco Management Control System	**0,802**	**0.538**
Environmental Performance	**0,851**	**0.770**

Source: Processed by SEM PLS (2025)

From the table above, the results of the reliability test were obtained which showed that the environmental performance construct has strong reliability with*Cronbach's alpha* value of 0.770 and *Composite Reliability* of 0.851, both exceeding the minimum limit of 0.70. The data confirms that the indicators in the construct show good consistency.

Meanwhile, *the eco-management control system* construct and *Radical Innovation* showed *Cronbach's alpha* value of less than 0.70 (0.538 and 0.617 respectively), indicating a potential *inconsistency* in the indicator. However, because these two *constructs* have adequate *Composite Reliability* values (0.777 and 0.802, respectively). *A Composite Reliability* value above 0.70 is sufficient to declare *a reliable construct* even though *Cronbach's Alpha* is less than ideal. This can happen because *Composite Reliability* considers the weight of the indicator more thoroughly.

Thus, although there are weaknesses in the value of Cronbach's Alpha, all constructs are still regarded as sufficiently reliable and suitable for use in further analysis..

Evaluation of Inner Model (Structural Model)

Test R Square

The R-Square test serves to determine the degree of influence of independent latent variables on dependent latent variables. This test can also be seen as an evaluation of the proportion of the influence of independent variables on dependent variables. The model's assessment criteria were based on the R^2 value, which was 0.67 for the good category, 0.33 for the moderate category, and 0.19 for the weak category.

Table 3.6
Uji R-Square

	R Square	**R Square Adjusted**
Environmental performance (Y)	**0.236**	**0.214**

Source: Processed by SEM PLS (2025)

From the table above, the results show that the dependent variable, namely environmental performance, has an R-Square value of 0.236 based on the analysis using Smart-PLS, when compared to the independent variables of Radical Innovation and Eco Management Control. This value indicates that both independent variables can explain 23.6% of the variance in environmental performance, while the remaining 76.4% is influenced by other variables not included in this research model.

Hypothesis Testing

To evaluate the influence of *Radical Innovation* and eco-management *control systems* on environmental performance, the next step is to conduct a path coefficient test. Hypothesis testing in this study was carried out by utilizing t-statistical values on each direct influence path. With a *significance level* of 5%, a hypothesis is declared acceptable if the t-statistical value exceeds 1.96. In addition, an alternative hypothesis will be accepted if the P-Values are less than 0.05 to use probability in rejecting or accepting the hypothesis.

Table 3.7
Result *Path coefficient*s

Hypotheses	**Influence**	**Original sampel (O)**	**Sampel mean (M)**	**Standard deviation (STDEV)**	**T statistics (| 0/STDEV |)**	**P Values**	**Result**
H1	*Radical Innovation* => Environmental Performance	0.178	0.207	0.113	1.576	0.115	Rejected
H2	Eco Management Control System => In Environmental Performance	0.391	0.402	0.093	4.199	0.000	Received

Source: Processed by SEM PLS (2025)

From table 3.7 above, it can be seen that both hypotheses developed in this study, are fully acceptable. *Radical Innovation* has no impact on environmental performance according to the coefficient of the path produced. The recorded t-value is 1.576, which is below 1.96, with a *significance at alpha 5%* (P-values > 0.05) all of which confirm this. Furthermore, environmental performance is *significantly* influenced by the *Eco-Management Control System. The significance at* the alpha 5% (P-Values less than 0.05) and the t-statistical value of 4,199 which exceeds 1.96 support this statement. These findings indicate a *significant* influence between independent and dependent variables. Overall, these results show that the implementation of an *eco-management control system* contributes more to improving environmental performance than radical innovation.

DOI: 10.5281/zenodo.17010683

DISCUSSION

The Role of Innovation in Environmental Performance

The results of hypothesis testing in this study affirm that Radical Innovation does not have a significant impact on the company's environmental performance, indicating that although large-scale innovation has a strong potential to drive change, its success does not always guarantee the achievement of sustainable goals, as it still contains risks and challenges in its effective implementation within the organizational environment (Oliveira Macedo et al., 2024). In facing the uncertain dynamics of the environment, various strategic efforts by companies to achieve sustainability often encounter obstacles, thus not always producing outcomes that meet expectations (Sukma Wijaya, 2022). In this context, rapidly developing innovations are often not in line with the internal readiness of the company, in terms of human resources, culture, or supporting structures (Harsanto et al., 2024). Radical innovation does not always produce positive environmental impacts due to the emergence of rebound effects, a negative impact that arises after changes in system behavior due to interventions made, which can undermine or even cancel out most of the benefits previously estimated from an innovation, and is estimated to eliminate about 40% of the potential sustainability achievements that have been designed (Pigosso, 2024). The efficiency generated from the implementation of innovations sometimes creates contrary effects, where increases in efficiency can trigger overall resource consumption increases, so that the expected environmental benefits are diminished or even lost, as in the case of large-scale energy-saving technology which can drive production increases that actually enlarge the overall carbon footprint (Wu et al., 2025).

In addition, Radical Innovation is generally viewed as a complex and costly process that demands significant capital investment, as well as requiring fundamental changes to the knowledge systems and research-development capacities of companies; this limits its application and makes it less realistic to serve as a primary strategy for improving environmental performance (Russo-Spena et al., 2021). Radical innovations that have the potential to produce significant technological breakthroughs are often avoided by companies due to the high levels of uncertainty and risk involved, thus incremental innovations that are gradual, cheaper, and have shorter development cycles are more often chosen as a realistic alternative, especially in the context of sustainability management (Shen et al., 2022). Considering the complexity, uncertainty, and inherent risks of radical innovation, its effectiveness in enhancing environmental performance greatly depends on organizational readiness, structural support, and mature strategic integration; because without these elements, such innovation has the potential to become a significant investment that does not yield the expected environmental impact (Chen et al., 2022).

The Role of *Eco-management Control Systems* on Environmental Performance

The results of the researched hypothesis indicate that the implementation of the eco-management control system plays a role in building organizational environmental awareness and accelerating the transition towards a sustainability-oriented economy, consistent with the findings that environmental capabilities can strengthen the implementation of environmentally friendly practices and organizational environmental performance (Karia, 2022). This system not only considers economic impacts but also emphasizes impacts on nature and society (Einhorn et al., 2024). This phenomenon aligns with the current trend where corporate orientation is now not solely focused on profit aspects but is also required to contribute socially and environmentally by improving the quality of life for the surrounding community (Nasihin et al., 2023). The implementation of the eco-management control system becomes crucial as a tool to direct, monitor, and evaluate the company's efforts in achieving optimal environmental performance (Hennig et al., 2023)

Organized management control systems, such as belief systems and diagnostic control systems, play a role in enhancing the non-financial performance of organizations and have the potential to be adapted into an eco-management control system framework, although they have not specifically highlighted environmental aspects (Yanti et al., 2024). This fact emphasizes that effective control systems can be integrated into corporate sustainability strategies and support the implementation of more environmentally friendly operations overall (Johnstone, 2022). One concrete example of the implementation of this system can be observed at Novotel Karawang, part of the Accor network, which has applied the Eco-Management Control System through the GAIA platform, which helps the company monitor energy consumption, water usage, waste management, and carbon footprint (Accor, 2023; HospitalityNet, 2023). This system aligns with ISO 14001 on environmental management systems, focusing on reducing negative environmental impacts through a systematic and data-driven approach, and can assist companies in enhancing sustainability practices and reducing environmental impacts across all operational units of the company (Nur Laela Ermaya et al., 2020). Sustainability practices can gradually improve a company's environmental performance, aided by factors such as the scale of implementation, consistency, and support from various stakeholders involved (Khan et al., 2025).

CONCLUSION

Based on the results of the above research, it can be concluded that:

1. *Radical Innovation* does not contribute *significantly* to the environmental performance of the Novotel Karawang Hotel. This shows that innovations that are not adjusted to organizational conditions and capabilities tend to be less *effective* in efforts to improve environmental performance. The success of innovation in improving environmental performance is more determined by *the relevance*, suitability, and *effectiveness of* its application in *a specific organizational* context.
2. *The Eco Management Control System* has been proven to have a positive and *significant* impact on the environmental performance of the Novotel Karawang Hotel. The implementation of a structured eco-management control system can encourage more efficient resource management, reduce excess consumption, and reduce the negative consequences of operations on the surrounding environment. The strategic implementation of environmental control systems is more impactful in driving sustainability than the radical application of innovation. Thus, companies are advised to continue to optimize EMCS and develop relevant innovations, based on environmentally friendly technologies, and in accordance with *internal capacity*.

SUGGESTION

Although it has been carried out systematically, some limitations were detected during the research process. Therefore, for the development of research in the next period, here are some recommendations that can be considered:

1. Further research can examine other variables such as Green Human Resource Management (GHRM) or Corporate Social

DOI: 10.5281/zenodo.17010683

Responsibility (CSR) to have a more comprehensive understanding of sustainability factors.
2. Mixed methods can be considered to explore more deeply the implementation of innovations and environmental control systems.
3. The research object should be expanded to include other hotels or similar service industries so that the results are more general and can be compared among organizations.
4. For Novotel Karawang, this research recommends the radical development of environmentally friendly innovations, such as through the application of new technology-based air conditioning systems (like geothermal cooling or smart air circulation systems) that can maintain a cool temperature without relying on conventional air conditioning, as well as the implementation of integrated solar-powered lighting systems that can replace the use of conventional electricity. This breakthrough has the potential to significantly reduce energy consumption while also sustainably lowering carbon emissions.

REFERENCES

1. Abdillah, P., Getah, C., June, T., Rahman, A., Regytha, S., & Gunawan, A. (2023). Green accounting to achieve environmental performance: energy management as a variable. *Journal of Accounting and Tax Analysis*, *8*(1), 13–17.
2. Accor. (2023). *Accor Sustainability Report 2023*. https://group.accor.com
3. Adyuta, H. R., & Prabandari, S. P. (2022). The influence of entrepreneurial orientation, radical innovation, and business strategy on company performance. *Journal of Entrepreneurship and Innovation*, *1*(3), 315–323. https://doi.org/10.21776/jki.2022.01.3.08
4. Alastal, M. Y. A., Jamil, M. Z. C., & Abd-Mutalib, H. (2020). Eco-control system: a literature review (doc translator, Trans.). *International Journal of Development Research*, *10*(02), 34003–34008. http://www.journalijdr.com
5. Alfian, S., Nadeak, H., Nasrudin, & Kabukaten, B., & South, N. (2023). Pengaruh PDB per Kapita dan Konsumsi Energi terhadap Emisi GRK di Indonesia The Effect of GDP Per Capita and Energy Consumption on GHG Emissions in Indonesia. *Journal of Economics and Development Indonesia*, *23*(2), 128–145.
6. Antonini, C., & Gomez-Conde, J. (2024a). Environmental management control systems and environmental innovation: Unintended consequences of the EU non- financial reporting directive. *Management Accounting Research*. https://doi.org/10.1016/j.mar.2024.100903
7. Antonini, C., & Gomez-Conde, J. (2024b). Environmental management control systems and environmental innovation: Unintended consequences of the EU non- financial reporting directive. *Management Accounting Research*. https://doi.org/10.1016/j.mar.2024.100903
8. Ardiansyah, I., & Amalia, I. (2021). The Influence of Participatory Leadership Style and the Implementation of Green Hotel Management on Environmental Performance at the Dharmawangsa Hotel Jakarta using the Structural Equation Modelling Method. *Journal of Research Innovation*, *Vol.2*(No.3), 965–975.
9. Avelyn, N., & Syofyan, E. (2023). The Effect of Company Size, Environmental Performance, and Voluntary Disclosure on Company Value: An Empirical Study of Companies in the Basic Industry and Chemical Sectors Listed on the Indonesia Stock Exchange. *JOURNAL OF ACCOUNTING EXPLORATION*, *5*(1), 214–232. https://doi.org/10.24036/jea.v5i1.605
10. Awaliyah, H., Management, M., & Haryanto, B. (2022). The Influence of Green Organizational Culture, Green Innovation, and Environmental Performance on Competitive Advantage Moderated by Green Supply
11. Chain Management (Case Study on SME in Solo Raya) (doc-translator, Trans.). *International Journal of Innovative Science and Research Technology*, *7*(3), 191–199. www.ijisrt.com191
12. Barawidjadja. (2020). *Levers of Control and Social Networks as a Management Control System Mechanism in the Implementation of Product Differentiation Strategies*. *3*(01), 88–113.
13. Bouchouit, K., & Elhamma, A. (2025). The Carbon Footprint as a Key Indicator for Environmental Management Controllers: Towards Environmental Performance – A Literature Review. *European Scientific Journal, ESJ*, *21*(4), 109. https://doi.org/10.19044/esj.2025.v21n4p109
14. Chen, J., Shu, W., Wang, X., Sial, M. S., Sehleanu, M., & Badulescu, D. (2022). The impact of environmental uncertainty on corporate innovation: Empirical evidence from an emerging economy. *International Journal of Environmental Research and Public Health*, *19*(1), 1–22. https://doi.org/10.3390/ijerph19010334
15. Chistov, V., Carrillo-Hermosilla, J., & Aramburu, N. (2023). Open eco-innovation. Aligning cooperation and external knowledge with the levels of eco-innovation radicalness. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(2). https://doi.org/10.1016/j.joitmc.2023.100049
16. Daromes, F. E., & Ng, S. (2023a). Environmental Management Control Systems and Environmental Performance: Direct and Indirect Effect. *International Journal of Professional Business Review*, *8*(6), e01753. https://doi.org/10.26668/businessreview/2023.v8i6.1753
17. Daromes, F. E., & Ng, S. (2023b). Environmental Management Control Systems and Environmental Performance: Direct and Indirect Effect. *International Journal of Professional Business Review*, *8*(6), e01753. https://doi.org/10.26668/businessreview/2023.v8i6.1753
18. Dewi Fortuna Nur Rohmah, & Nazmel Nazir. (2022). The effect of financial performance, environmental performance, environmental management system, managerial ownership and hood reputation on carbon emission disclosure. *Journal of Economics Trisakti*, *2*(2), 749–762. https://doi.org/10.25105/jet.v2i2.14485
19. Dharmayanti, N., Ismail, T., Hanifah, I. A., & Taqi, M. (2023). Exploring sustainability management control system and eco-innovation matter sustainable financial performance: The role of supply chain management and digital adaptability in indonesian context. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(3). https://doi.org/10.1016/j.joitmc.2023.100119
20. Diaz, N. B. (2024). Educational Administration: Theory and Practice of Research Articles. *Educational Administration: Theory and Practice*, *30*(4), 7748-7763. https://doi.org/10.53555/kuey.v30i4.2638
21. Dwi Lestari, A., & Khomsiyah. (2023). The Effect of Environmental Performance, Implementation of Green Accounting, and Sustainability Report Disclosure on Company Value. *Journal of Business Economics, Management and Accounting*, *3*. https://doi.org/doi.org/jebma.v3n3.2799
22. Einhorn, S., Fietz, B., Guenther, T. W., & Guenther, E. (2024). The relationship of organizational culture with management control systems and environmental management control

DOI: 10.5281/zenodo.17010683

systems. *Review of Managerial Science*, *18*(8), 2321–2371. https://doi.org/10.1007/s11846-023-00687-0

23. Haris, T. R., Junaid, A., Faisal, M., Pelu, A. R., & Pramukti, A. (2021a). The Effect of the Implementation of Environmental Management Accounting and Organizational Strategy on Environmental Performance and Innovation as a Moderating Variable (Case Study on the Regional General Hospital of Polewali Mandar Regency). *Center of Economic Student Journal*, *4*(4), 358. https://doi.org/10.56750/cesj.v4i4
24. Haris, T. R., Junaid, A., Faisal, M., Pelu, A. R., & Pramukti, A. (2021b). The Effect of the Implementation of Environmental Management Accounting and Organizational Strategy on Environmental Performance and Innovation as a Moderating Variable (Case Study on the Regional General Hospital of Polewali Mandar Regency). *Center of Economic Student Journal*, *4*(4), 358. https://doi.org/10.56750/cesj.v4i4
25. Harsanto, B., Kumar, N., & Michaelides, R. (2024). Sustainability-oriented innovation in manufacturing firms: Implementation and evaluation framework. *Business Strategy and the Environment*, *33*(6), 5086–5108. https://doi.org/10.1002/bse.3740
26. Hennig, J. C., Firk, S., Wolff, M., & Coskun, H. (2023). Environmental management control systems: Exploring the economic motivation behind their implementation. *Journal of Business Research*, *169*. https://doi.org/10.1016/j.jbusres.2023.114283
27. HospitalityNet. (2023). *Food Waste: AI Supporting Accor Hotels*. https://www.hospitalitynet.org/news/4118407.html
28. Huang, Z., & Xiao, Z. (2023). Dynamic Capabilities, Environmental Management Capabilities, Stakeholder Pressure and Eco-Innovation of Chinese Manufacturing Firms: A Moderated Mediation Model (online doc translator, Trans.). *Sustainability (Switzerland)*, *15*(9), 1. https://doi.org/10.3390/su15097571
29. Izotova, A., & Bolívar-Ramos, M. T. (2024). The effects of the functional and geographical breadth of collaborations on radical innovation performance: the moderating role of firm size. *Journal of Business and Industrial Marketing*, *39*(13), 216–232. https://doi.org/10.1108/JBIM-01-2024-0011
30. Johnstone, L. (2022). The means to substantive performance improvements – environmental management control systems in ISO 14001– certified SMEs. *Sustainability Accounting, Management and Policy Journal*, *13*(5), 1082–1108. https://doi.org/10.1108/SAMPJ-11-2021-0456
31. Carroll, N. (2022). Antecedents and Consequences of Environmental Capability towards Sustainability and Competitiveness. In *Sustainability (Switzerland)* (Vol. 14, Issue 19). MDPI. https://doi.org/10.3390/su141912146
32. Khan, N. R., Malik, F., Khan, M. R., Khan, I., & Ghouri, A. M. (2025). Organizational sustainability: the role of environmentally focused practices in enhancing environmental performance—an emerging market perspective. *Discover Sustainability*, *6*(1). https://doi.org/10.1007/s43621-025-00826-5
33. Leliana, L., & Yenni, C. (2024). Eco-Innovation on the Cost of Equity and Financial Performance: The Moderating Role of Ownership Structure. *Journal of Assets (Research Accounting)*, *16*(1), 40–50. https://doi.org/https://doi.org/10.17509/jaset.v16i1
34. Ma'arif, S., Sari, R. E., & Indraswari, N. M. (2023). *The Role of Sustainable Behavior in Environmental Management for the Development of Renewable Energy- Based Tourism Villages* (Vol. 1, Issue 1). https://doi.org/https://doi.org/10.24002/senapas.v1i1.7388
35. Manurung, H. A., Rano, K., Tjahjana, D., Tjiptadi, D. D., & Saputra, N. (2021). *Management: Theory and Its Development* (S. Junjungan Gogo Manurung, Ed.; 1st ed.). CV Kharisma Printing.
36. Mariawati, Mulyadi, dedi, & Yanti. (2024). Journal of Management & Business: The Influence of Green Innovation and Business Sustainability on the Financial Performance of Tofu and Tempeh Factories MSMEs in Karawang Regency. *SEIKO: Journal of Management & Business*, *7*(1), 1451–1463.
37. Maysaroh, U., & Murwaningsari, E. (2023). The Effect of Environmental Management Accounting and Environmental Disclosure on Financial Performance with Media Exposure as a Moderation Variable. *Journal of Economics Trisakti*, *3*(2),2901–2918. https://doi.org/10.25105/jet.v3i2.17897
38. Nasihin, I., Fitriana, V. A., Arimurti, T., & Purwandari, D. (2023). The Role of Financial Performance in Sustainability Report Disclosure in State-Owned Enterprises (www.onlinedoctranslator.com, Trans.). *SEIKO : Journal of Management & Business*, *6*, 256–267. www.onlinedoctranslator.com
39. Niandari, N., & Handayani. (2023). Green cccounting, environmental performance, and profitability. *Journal of Business Accounting*, *16*(1), 83–96. https://doi.org/10.30813/jab.v16
40. Ningly, I., & Rahmadhani, S. (2025). Optimizing Corporate Environmental Performance Through Green Process Innovation: An Approach to Business Sustainability. *Journal of Accounting*, *29*(2), 377–399. https://doi.org/10.24912/ja.v29i2.2895
41. Nur Laela Ermaya, H., & Ajengtiyas Saputri Mashuri, A. (2020). The Influence of Environmental Performance, Environmental Cost and ISO 14001 on Financial Performance in Non-Financial Companies Listed on the Indonesia Stock Exchange. In *Journal of Applied Accounting* (Vol. 1, Issue 2). http://ojs.stiami.ac.id
42. Oliveira Macedo, M. R. G. de, Montreuil Carmona, C. U. De, & Marques, D. B. (2024). Incremental and Radical Innovations that Contribute to the Survival of Small Businesses in Environments of Crisis. *Journal of Public Administration and Governance*, *14*(2), 80. https://doi.org/10.5296/jpag.v14i2.22369
43. Peter, P., Wagner, J., & Pakšiová, R. (2021). The influence of environmental strategy, environmental reporting and environmental management control system on environmental and economic performance. *Energies*, *14*(15), 1–20. https://doi.org/10.3390/en14154637
44. Pigosso, D. C. A. (2024). Reboundless design: towards the prevention of rebound effects by design. *Design Science*, *10*, 1–15. https://doi.org/10.1017/dsj.2024.32
45. Pramono, A. J., Suwarno, S., Amyar, F., & Friska, R. (2023). The Effect of Environmental Management Accounting and Control System Integration on Sustainability Orientation through Sectoral Green Economy Mediation. *International Journal of Energy Economics and Policy, 13(5), 348–354. https://doi.org/10.32479/ijeep.14781*
46. *Pramudita Jane, E., & Gunawan Wahyu, A. (2023). The Influence Of Green Human Resource Management, Green Human Capital, And Green Innovation On Environmental Performance Through Green Human Capital And Green Innovation. Journal of Comprehensive Science, 2(2), 738–751. https://jcs.greenpublisher.id/index.php/jcs/article/view/383*

DOI: 10.5281/zenodo.17010683

47. Ratnawati, D., & Aisyah, S. (2023). Analysis of the Effectiveness of Management Control Systems to Improve Sales Manager Performance (Case Study on PT. Astra Daihatsu Krakatau). In *Journal of Management and Business Economics Research (JEKOMBIS)* (Vol. 2, Issue 1).
48. Ros Juliana Lubis, Tiara Hutapea, Arnol Siagian, & Bonaraja Purba. (2023). The Effect of Green Accounting Implementation and Environmental Performance on Corporate Financial Performance. *SANTRI : Journal of Islamic Economics and Finance*, *2*(1), 60–78. https://doi.org/10.61132/santri.v2i1.198
49. Roselyne, C., & Sarudin, R. (2024). *Analysis of the influence of corporate social responsibility on brand image at novotel karawang*. https://doi.org/https://dx.doi.org/10.30813/glost.v0i0.6286
50. Russo-Spena, T., Di Paola, N., & O'Driscoll, A. (2021). Configurations to Superior Environmental Innovation Strategy: A Both–And Approach. *Organization and Environment*, *35*(3), 468–494. https://doi.org/10.1177/10860266211031623
51. Santoso, A. M. M., & Yanti, H. B. (2024). Analysis of the influence of eco-efficiency, green innovation, carbon emission disclosure, and environmental performance on company value with company size as a control variable. *Journal of Economics and Business (JEBS)*, *4*(5), 679– 692. https://doi.org/10.47233/jebs.v4i5.1961
52. Septyan A, D., & Rinaldi, B. (2022, October 5). *Radical Innovation*. UKMINDONESIA.ID.
53. Shen, Y., & Yang, X. (2022). Study on the Impact of Breakthrough and Incremental Innovation on Firm Capacity Utilization. *Sustainability (Switzerland)*, *14*(22), 1–17. https://doi.org/10.3390/su142214837
54. Sukma Wijaya, R. (2022). The influence of management accounting systems, management control systems, and environmental uncertainty on managerial performance (research study on pt semen padang, lubuk kilangan, padang). *TOWER of Science*, *XVI*(01), 70–78.
55. Sutrisno, B., Hanifah, A., Nugroho, T. M., & Eltama, F. N. (2024). Environmental Performance Ratings and the Characteristics of Companies That Influence It: An Empirical Study in Indonesia. *Isoquant: Journal of Economics, Management and Accounting*, *8*(2), 171–179.
56. Suwandi Eduardus, F., & Ng, suwandi. (2023). Environmental Management Control System and Performance Environment: Direct and Indirect Effects. *International Journal of Professional Business Review*, *8*(6),01–06. https://doi.org/10.26668/tinjauanbisnis/2023.v8i6.1753
57. Tian, L., Shen, Y., & Du, M. (2024). Impact of mandatory environmental information disclosure on the capital cost: Evidence from listed companies in China. *Heliyon*, *10*(22). https://doi.org/10.1016/j.heliyon.2024.e40045
58. Tomlins, R., Malynka, O., Sukumar, A., Rao, M., & Pandya, K. (2021). Radical Innovation Process in Sustainable Development and Knowledge Management: Toyota Prius Case Study. IOP Conference Series: Earth and Environmental Science, 628(1). https://doi.org/10.1088/1755-1315/628/1/012036
59. Utami, S., & Nugroho, R. (2022). MSME Management and Entrepreneurship (Sudarmiatin & Wishnu wardana, Eds.; 1st ed.). INDONESIAN EDUCATION CIRCLE.
60. Wahyuni, E. D., Leniwati, D., & Salsabila, N. (2024). Environmental management accounting, green innovation, and its impact on managerial performance. *Journal of Accounting and Finance Review*, *14*(2). https://doi.org/10.22219/jrak.v14i2.32141
61. Witjaksono, H., & Amir, M. T. (2022). The Relationship Between Innovation Strategy and Financial Performance in Manufacturing Companies (A Systematic Literature Review on Innovation Research and Corporate Performance). *J-MAS (Journal of Management and Science)*, *7*(1), 224. https://doi.org/10.33087/jmas.v7i1.392
62. Wu, L., Wang, L., Philipsen, N. J., & Fang, X. (2025). The impact of eco-innovation on environmental performance in different regional settings: new evidence from Chinese cities. *Environment, Development and Sustainability*, *27*(4), 9211–9232. https://doi.org/10.1007/s10668-023-04280-z
63. Yahia, A., Alastal, M., Abd-Mutalib, H., Zuriana, C., & Jamil, M. (2020). Eco-Control System: A Literature Review. *International Journal of Development Research*, *10*(02), 34003–34008. https://www.researchgate.net/publication/340023421
64. Yanti, Ismail, T., Hanifah, I. A., & Muchlish, M. (2024). The Role of Management Control System in Non-Financial Performance. *Borobudur International Symposium on Humanities and Social Science (BIS-HSS 2022)*., 1591–1600. https://doi.org/10.2991/978-2-38476-118-0181
65. Yu, Y., Li, H., Xu, J., Zhang, M., Zhang, X., Zhang, J. Z., & Wu, Y. (2023). The effect of internal quality integration on financial performance: the mediating role of product innovation. *Journal of Manufacturing Technology Management*, *34*(7), 1235–1255. https://doi.org/10.1108/JMTM-01-2023-000

DOI: 10.5281/zenodo.17010683