Resource Orchestration in Enhancing Green Innovation and Environmental Performance in SME

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ABSTRACT

Economic growth has led to global environmental gradation and made environmental issues the main agenda in current business practices, including SMEs. Referring to the Resource Orchestration Theory, this study uses a new approach that conducts internal resource orchestration to implement green practices in SMEs. This study aims to identify the role of green intellectual capital and green transformational leadership in enhancing green innovation and environmental performance. The survey was conducted on the woodcraft industry located in Bali, Indonesia. Research data were analyzed using Partial Least Square. The research results prove that green intellectual capital significantly increases green innovation and environmental performance. Meanwhile, green transformational leadership only increases green innovation, but it is not proven to improve environmental performance significantly. The findings also confirm that green innovation is a mediating variable in the relationship between green innovation, green transformational leadership, and environmental performance.

Keywords: Green Intellectual Capital, Environmental Performance, Green Transformational Leadership, Small and Medium Enterprise
JEL Classifications: O310, O340, Q56

1. INTRODUCTION

Environmental issues have become the main agenda in organizational business practices over the last two decades, particularly in small and medium enterprises (SMEs). It is undeniable that rapid economic growth causes global environmental degradation. This fact awakens business people to align company economic activities with environmental protection standards (Mansoor et al., 2021). One form of commitment and concern for the environment is by applying environmentally friendly innovations. Green innovation aims to address stakeholder concerns regarding environmental issues while improving organizational performance in the long term, including environmental performance (Rehman et al., 2021; Rustiarini et al., 2022a; Singh et al., 2020).

The success of a business in improving environmental performance is inseparable from the sensitivity of the organization's internal resources to environmental problems. Intellectual capital (IC) is a resource that offers a practical and solid approach to meeting sustainability aspects (Benevene et al., 2021; Singh and El-Kassar, 2019). Chen (2008) expands the concept of IC in environmental management through green intellectual capital (GIC). The concept of GIC can be categorized in a tripartite manner, namely green human capital (GHC), green structural capital (GSC), and green relational capital (GRC). Implementing a sustainability strategy requires the involvement of SME top management to motivate employees to engage in environmentally friendly activities. Green transformational leadership (GTL) is a type of leadership that initiate sustainability practices within organizations, such

as formulating pro-environmental strategies and policies and designing environmentally friendly products (Mazzelli et al., 2020; Singh et al., 2020).

There are three motivations for this research. First, this study uses the Resource Orchestration Theory (ROT), that not widely used in sustainability research. Most previous studies examining the relationship between IC and sustainability used the Resource Based View (RBV) theory (Haldorai et al., 2022; Rahayu et al., 2023; Rustiarini et al., 2022b; Sobaih et al., 2020). ROT is an extension of RBV theory. ROT emphasizes that an organization needs adequate resources to create added value and maximize performance (Liu et al., 2022; Sirmon et al., 2008). Therefore, this study analyzes the company's internal resource orchestration role, namely GIC and GTL, to increase green innovation and environmental performance. The combination of these two prime resources leads companies to comply with regulations related to the environment and meet the expectations of customers who are concerned with environmental issues (Dranev et al., 2020; Martinez-Conesa et al., 2017).

Second, only a few pieces of academic literature have examined SMEs' sustainability practices (Boiral et al., 2019), especially in developing countries. The majority of studies only focus on large companies in developed countries. Meanwhile, manufacturing SMEs are the most significant business entity in developing countries. The manufacturing sector's growth will threaten environmental sustainability if not appropriately managed. The manufacturing industry uses more natural resources, consumes more energy, and produces waste prone to polluting the environment (Abdou et al., 2020). Additionally, increasing stakeholder pressure has forced SMEs to initiate environmentally friendly business practices. Since SMEs have relatively limited resources, SME owners rely on orchestrating the organization's resources in responding to stakeholder pressure (Singh et al., 2020; Singh and El-Kassar, 2019). GTL has a crucial role in adopting green policies, while GIC facilitates the implementation of green practices to improve environmental performance.

Third, viewed from a contextual perspective, many studies have examined the relationship between GIC and sustainability practices in the context of SMEs in developed countries. Nevertheless, sustainability practices have received little attention in developing countries (Asiri et al., 2020). This fact implies a need to investigate this relationship in developing countries (Nisar et al., 2021), particularly in Indonesia. Meanwhile, green intellectual capital is still a new concept unpopular among SMEs in Indonesia. SMEs must understand the importance of managing intangible assets to improve sustainability performance, especially from an environmental perspective. In addition, several studies have not involved the role of leadership in improving the implementation of sustainability principles. This study uses the GTL leadership type that can initiate environment-oriented employee behavior (Haldorai et al., 2022). Therefore, this study intends to answer the research gap by aligning GIC and GTL as predictors of green innovation and environmental performance.

This study aims to identify the role of GIC and GTL in implementing green innovation and improving environmental performance. This study proves that GIC has a significant role in green innovation and environmental performance. Meanwhile, GTL only increases the use of green innovation but is not proven to improve environmental performance significantly. These findings confirm that green innovation is a mediating variable in the relationship between GIC, GTL, and environmental performance.

This study analyzes sustainability practices in SMEs using the theoretical lens of the resource orchestration theory. Theoretically, these findings confirm the role of resource orchestration theory in environmental accounting literature. This theory helps scholars focus on internal resources to improve environmental performance, especially in SMEs. Practically, this theory encourages SME owners to explore the potential of environmentally-based IC to meet stakeholder pressure to adopt pro-environmental innovations. Additionally, SME owners need this type of leadership to initiate green practices and achieve sustainable performance.

The remainder of this paper is organized as follows. The second section presents a literature review, and the third outlines the research methodology. The results of the research and discussion are presented in section four. Finally, section five presents the conclusions, implications, limitations, and suggestions for future research.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Resource Orchestration Theory
This study uses the Resource Orchestration Theory (ROT), an extension of the Resource Based View (RBV) theory. The traditional view of RBV theory reveals that valuable and rare organizational resources are an organization's competitive advantage (Chadwick et al., 2015; Newbert, 2008). Conversely, ROT asserts that resource ownership does not necessarily drive value creation (Sirmon et al., 2010). Organizations must orchestrate resources, such as collecting, combining, and managing them effectively, to create a competitive advantage (Andersén et al., 2020; Asiaei et al., 2022; Wang et al., 2020).

In the context of sustainability practices, ROT plays an essential role in directing organizations to achieve sustainable performance. This theory suggests organizations align internal resources, namely intellectual capital and leadership types, to create innovation and improve environmental performance. Unlike the RBV, ROT emphasizes the importance of a managerial role in effectively managing intangible assets (Sirmon et al., 2010). Managerial has a strategic role in configuring organizational resources to achieve sustainable performance, one of which is environmental performance. Therefore, this study creates a portfolio of SME resources consisting of GIC and GTL to create green innovation and improve environmental performance.

2.2. Green Intellectual, Green Innovation, and Environmental Performance
Environmental damage is a crucial issue in today's business practices. This condition requires SMEs to improve environmental performance. In a specific context, environmental performance

focuses on organizational activities that impact the environment, such as waste disposal and emissions management. From a broader perspective, environmental performance reflects organizational concern for the natural environment coordinated with stakeholders (Asiaei et al., 2022; Mungai et al., 2020). Many small businesses adopt innovative, environmentally oriented strategies to align SME business practices with environmental protection standards. Green innovation includes creating environmentally friendly processes and products in organizational business processes as a form of commitment and concern for the environment (Albort-Morant et al., 2016; Roscoe et al., 2019).

Based on resource orchestration theory, organizations must manage organizational assets effectively to improve performance, including intangible assets. Intellectual capital is a valuable resource that directs an organization to achieve sustainable performance. Chen (2008) extends the concept of IC to the environmental management context by introducing the term GIC. GIC consists of green human capital (GHC), green structural capital GSC), and green relational capital (GRC). GHC is employees' knowledge, skills, creativity, and skills related to environmental protection activities. GSC refers to organizational assets in the form of information technology systems, compensation systems, databases, procedures, organizational culture, and copyrights related to environmental protection. Meanwhile, GRC is a collaborative organizational relationship with suppliers, customers, and other stakeholders related to implementing green innovations and environmental management activities (Asiaei et al., 2022).

Academic literature states that the success of environmental performance is highly dependent on employees' concern for the environment (Rachmawati, 2023; Singh and El-Kassar, 2019). Employees tend to engage in environmentally-oriented behavior when they have pro-environmental knowledge and skills (Asiaei et al., 2022; Nisar et al., 2021). GIC also promotes collaborative relationships with external parties (customers or suppliers) to enhance the company's reputation (Wang and Juo, 2021). A group of studies shows that GIC is positively related to environmental performance (Asiaei et al., 2022; Rehman et al., 2021; Yadiati et al., 2019; Yong et al., 2019). The more significant the GIC investment, the better the environmental performance (Mansoor et al., 2021; Shah et al., 2021). Yusoff et al. (2019) study revealed that GIC promotes environmental performance in SMEs. GIC leads organizations to create environmentally friendly innovations to minimize environmental costs (Singh et al., 2020; Yusoff et al., 2019). Several studies have revealed that GIC has been proven to increase the innovation of SME managers in designing environmentally friendly processes and products (Rehman et al., 2022; Singh et al., 2020). Thus, this study formulates the first and second hypotheses as follows:

H_1: GIC positively affects green innovation.
H_2: GIC positively affects environmental performance.

2.3. Green Transformational Leadership, Green Innovation, and Environmental Performance

Applying the concept of sustainable development in SMEs requires the involvement of management that understands the premise of sustainability (social, environmental, and economic)

(Tonial et al., 2019). Regarding resource orchestration theory, leadership is essential in environmental management (Zhou et al., 2018). SME owners are essential in formulating organizational green policies and practices (Jia et al., 2018). Management also must promote environmentally oriented actions and design environmentally friendly processes and products (Mazzelli et al., 2020). Therefore, management needs to have the character of green transformational leadership (GTL) that can instill environmentally oriented values, attitudes, and behaviors within the organization.

In environmental management, GTL is a leader's behavior that provides vision and inspiration to employees to achieve environmental-oriented organizational goals. This type of leadership motivates employees to learn new knowledge to design environmentally friendly production processes. GTL also enables organizations to introduce eco-friendly products to the market (Han et al., 2016; Le and Lei, 2018). Leaders are committed to initiating environmentally oriented employee behavior (Haldorai et al., 2022) and building an organizational culture that prioritizes environmental performance (Latan et al., 2018).

Several previous empirical studies suggest companies practice GTL due it leads organizations to achieve green creativity (Chen and Chang, 2013; Jia et al., 2018), green innovation (Singh et al., 2020; Zhou et al., 2018), and green performance (Chen and Chang, 2013). Studies by Sobaih et al. (2020) confirm that owners or managers are essential strategic resources for practicing green innovation and environmental performance. Thus, this study formulates the third and fourth hypotheses as follows:

H_3: GTL positively affects green innovation.
H_4: GTL positively affects environmental performance.

2.4. Green Innovation and Environmental Performance

Organizations must adapt to sustainability initiatives to achieve environmental performance (Asiaei et al., 2022). Several literatures reveal that the success of environmental performance depends on product innovation and environmentally friendly processes adopted in organizational business processes (Chen et al., 2015; Dubey et al., 2015; Oliva et al., 2019). Green innovation uses environmentally friendly raw materials, reduces energy consumption, and creates process designs that reduce emissions (Albort-Morant et al., 2016). Organizations implement product creation processes substantially different from previous methods to effectively reduce the negative impacts of waste and emissions on the environment (Adegbile et al., 2017). Studies on sustainability practices in SMEs reveal that green innovation significantly improves environmental performance (Kraus et al., 2020; Rehman et al., 2021; Singh et al., 2020; Sobaih et al., 2020). Green innovation reduces the industry's negative environmental impact (Rehman et al., 2021) and reduces costs for repairing environmental damage (Weng et al., 2015). Thus, this study formulates the fifth hypothesis as follows:

H_5: Green innovation positively affects environmental performance.

2.5. Green Innovation as Mediation Variable

Resource orchestration theory states that organizations must have adequate resources to maximize performance (Liu et al., 2022;

Sirmon et al., 2008). This study combines internal resources, namely GIC and GTL, to create green innovation and improve environmental performance. IC offers a practical approach to achieving balance in sustainability performance, covering economic, social, and environmental aspects. In the environmental management context, the IC concept manifests as a GIC that focuses attention on environmental aspects. GIC raises industry concern for environmental protection through green innovation, ultimately improving environmental performance. Thus, green innovation acts as a mediator between GIC and environmental performance. A recent study proves that green innovation fully mediates green human resource management and green performance in manufacturing SMEs (Singh et al., 2020). Thus, this study formulates the sixth hypothesis as follows:

H_6: Green innovation mediates GIC and environmental performance.

This type of leadership is also a valuable resource for improving environmental performance. Management with the characteristics of GTL plays a role in making strategic choices that lead to green organizational practices. This type of leadership will be directly involved in implementing the sustainability concept, including designing environmentally oriented SME processes and products. Management is willing to provide more resources to implement green innovation, further improving environmental performance. In this study, green innovation mediates GTL and environmental performance. Thus, this study formulates the seventh hypothesis as follows:

H_7: Green innovation mediates GTL and environmental performance.

3. RESEARCH METHODOLOGY

The population is all SMEs spread across nine regencies in Bali, Indonesia. Indonesia is one of the developing countries in the Southeast Asia region. SMEs support the Indonesian economy and provide essential contribution on gross domestic bruto (Widyani et al., 2022), especially the manufacturing industry. This research was conducted in the manufacturing sector for several reasons. First, this sector has production activities that use more natural resources, have higher energy consumption, and produce waste (emissions) that make environmental damage. Compared to other sectors, manufacturing is responsible for conserving natural resources (Benevene et al., 2021; Mansoor et al., 2021). Second, the manufacturing sector is labor-intensive, absorbing many workers from the surrounding community (Rustiarini et al., 2022b). For the industry to maintain a balance between economic performance and environmental performance, SME owners must motivate employees to learn new knowledge and skills related to environmentally friendly processes and product designs. Therefore, this study identifies the role of internal resources in implementing green innovation and improving environmental performance.

The study was conducted on 336 small and medium industries in Bali Province, Indonesia. Bali Province has a leading tourism sector, so small and medium industries have a strategic role in supporting the tourism industry. The sampling technique uses purposive sampling using the following criteria: (1) is a small and medium industry, (2) is engaged in woodcraft manufacturing.

The data collection method uses a questionnaire given directly to the SME owner or manager responsible for business production activities. Each questionnaire contained information containing the research objectives and the importance of SME owner or manager participation in this study. Respondents also received information that the answers were confidential and only used for research.

This study analyzes four variables: green intellectual capital, green transformational leadership, green innovation, and environmental performance. The green intellectual capital consists of three elements: green human capital, green structural capital, and green relational capital. The green intellectual capital measurement uses 14 indicators adapted from previous research (Huang and Kung, 2011; Yusoff et al., 2019). The green transformational leadership is measured using five indicators adapted from previous research (Singh et al., 2020). Meanwhile, the green innovation consists of two elements, namely green product innovation and green process innovation, each consisting of 3 indicators adapted from the research of Singh et al. (2020). Finally, a measurement for environmental performance uses four indicators adopted from previous research (Asiaei et al., 2022). All questionnaires used a five-point Likert Scale with answers ranging from "strongly disagree = 1" to "strongly agree = 5." Similar to previous results (Liu et al., 2022), this study uses SME age as a control variable for other factors that might affect environmental performance. The age of an SME reflects the company's life cycle, including signaling the readiness of an SME to adopt environmentally friendly innovations. The SME age is calculated by subtracting the year of research from the year the SME was founded.

This study uses Partial Least Square (PLS) to test the research hypotheses. Before testing the research hypothesis, this study measures the outer and inner models. The measurement of the outer model assesses the validity and reliability of the model, which is evaluated using convergent validity, discriminant validity, and composite reliability. Also, this study tests the inner model to determine the specification of the relationship between constructs using the coefficient of determination (R Square). Furthermore, structural model tests were conducted to determine the relationship between the independent and dependent variables. Model testing using mediating variables includes two stages. First, testing the relationship of the independent variables is conducted directly on the dependent variable without a mediating role. Second, it tests the relationship between the independent variables and the dependent variable through the role of the mediating variable. The relationship between variables is significant if it is <5% and the T-statistics value exceeds 1.96 (Hair et al., 2013).

4. RESULTS AND DISCUSSION

4.1. Common Method Bias Test Result
This study collects research data using a self-assessment questionnaire. This technique allows the occurrence of Common Method Bias (CMB) problems in data testing results (Podsakoff and Organ, 1986). This study anticipates the impact of CMB in two ways, as was done by previous research (Kraus et al., 2020;

Rehman et al., 2021). Based on the procedural perspective, the researcher uses a questionnaire that is easy for respondents to understand. The researcher also informed the respondents that the answers would be guaranteed confidentiality. From a statistical perspective, researchers conducted Harman's Single Factor test and obtained a variance of 31,751%, <50%. The results of this test confirm that the data is free from CMB problems.

This study involved 336 respondents. Table 1 presents the characteristics of SMEs and the demographic characteristics of the respondents.

Based on SME age, Table 1 shows that most SMEs are under 25 (75.89%). This figure shows that most SMEs are in the introduction and growth stages, so they require the orchestration of internal resources to create innovations and improve performance, particularly concerning environmental protection. Meanwhile, the Covid-19 pandemic caused the number of employees to decrease, where 90.18% of SMEs had fewer than ten employees. Based on demographic characteristics, 65.18% of respondents were male, and most had middle or senior high school education (54.46%). Demographic characteristics are one of the internal capacities supporting innovative strategies to improve sustainability performance, especially environmental aspects.

4.2. Inner and Outer Model Testing
This study uses PLS analysis to test the research hypotheses. Before testing the hypothesis, this study examined the construct validity. The analysis results in Table 2 present the value of composite reliability and Cronbach's alpha exceeding the value of 0.7, indicating that all indicators have good reliability. The construct has an AVE value exceeding 0.5, indicating it has fulfilled the validity test requirements. Meanwhile, the measurement results of the outer model show that the loading factor value exceeds 0.7, which indicates a high correlation between the indicator and the construct.

The results of the structural model measurements for green innovation variability present an R-Square value of 0.856. This figure requires that the GIC and GTL variables can explain the variability of the green innovation variable by 85.60%. Meanwhile, the R-Square value for measuring environmental performance variability is 0.449, which indicates that environmental

performance variability is explained by GIC, GTL, and green innovation of 44.90%. Furthermore, this study identifies the direct influence of GIC and GTL on green innovation, as shown in Table 3.

The results of the direct effect test in Table 3 conclude that GIC increases the application of green innovation and environmental performance. Likewise, GTL has a positive influence on green innovation. Nevertheless, GTL is not proven to affect environmental performance directly. Other findings reveal that green innovation is proven to improve environmental performance. The statistical test result supports the four hypotheses formulated, namely H1, H2, H3, and H5. On the other hand, these findings do not support H4. Furthermore, this study examines the indirect effect of the variables studied, as shown in Table 4.

Table 4 examines the role of green innovation as a mediating variable. The results of the sixth hypothesis test show that green innovation is a partial mediation in the relationship between GIC and environmental performance. Nevertheless, green innovation has fully mediated the relationship between GTL and environmental performance. These statistical results support the sixth and seventh hypotheses. Finally, the control variable test results reveal no effect of SME age on environmental performance.

4.3. Discussion
Statistical test results show that GIC improves green innovation and environmental performance implementation. The results strengthen the resource orchestration theory that GIC is a superior resource for improving environmental performance, especially in the manufacturing industry. SME generally have personal closeness with stakeholders. GIC assists organizations in aligning strategy and operational activities with the demands of environmentally oriented stakeholders (Arsawan et al., 2022; Benevene et al., 2021). Green human capital enables employees to know to create processes and products that are environmentally friendly and to have concern for environmental issues. Green structural capital encourages organizations to develop environmentally-oriented innovative strategies (Asiaei et al., 2022), such as implementing green innovation. Meanwhile, green relational capital motivates organizations to collaborate with suppliers, customers, and other stakeholders in managing the corporate environment (Liu et al., 2022). Yusoff et al. (2019) study revealed that GIC promotes environmental performance in SMEs. This finding supports previous studies which revealed that GIC directs organizations to create environmentally friendly innovations, thereby minimizing environmental costs (Rehman et al., 2022; Singh et al., 2020). The results are also consistent with the results of previous studies that GIC is positively related to environmental performance (Asiaei et al., 2022; Rehman et al., 2021; Yadiati et al., 2019; Yong et al., 2019). The greater an organization's investment in GIC, the better the environmental performance (Mansoor et al., 2021; Shah et al., 2021).

The results third hypothesis testing state that GTL positively affects green innovation practices. Nevertheless, the fourth hypothesis test results state that GTL has no significant effect on improving environmental performance. Referring to the resource

Table 1: Demographics of SMEs and respondents

Description	Percentage
Age of SME	
<25 years	75.89
>25 years	24.11
Total employees	
<10 person	90.18
>10 person	9.82
Gender	
Male	65.18
Female	34.82
Level education	
Basic education	36.61
Middle education	54.46
Higher education	8.93

Resource: Author calculation. SMEs: Small and medium enterprises

Table 2: Validity and reliability test

Items	Loading factor	Composite reliability	Cronbach Alpha	AVE
Green intellectual capital (GIC)		0.935	0.925	0.511
Green human capital (GHC)				
The employees have:				
…Positive productivity and contribution towards environmental protection.	0.718			
…Adequate competence towards environmental protection.	0.752			
…High product quality towards environmental protection.	0.793			
…High-level cooperative teamwork toward environmental protection.	0.827			
…Full support to achieve their jobs of environmental protection.	0.809			
Green structural capital (GSC)				
Our organization has…				
…A superior management system of environmental protection.	0.750			
…Adequate investment in environmental protection facilities.	0.731			
…Efficient process for overall operation towards environmental protection.	0.736			
…Favorable knowledge management system for the accumulation and knowledge sharing of environmental management.	0.772			
…Established detailed environmental protection rules and regulations.	0.794			
Relational capital				
Our organization has…				
…Designs products that comply with the customer's environmental desires.	0.763			
…Stability of cooperative relationships with suppliers towards environmental protection.	0.734			
…Stability of cooperative relationships with clients towards environmental protection.	0.752			
…Stability cooperative relationships with strategic partners towards environmental protection.	0.730			
Green transformational leadership (GTL)		0.962	0.950	0.834
I inspire subordinates with an environmental plan.	0.920			
I provide subordinates with a clear environmental vision.	0.916			
I encourage subordinates to work on environmental plans.	0.900			
I encourage employees to attain environmental goals.	0.905			
I consider the environmental beliefs of my subordinates.	0.926			
Green innovation (GIN)		0.929	0.907	0.690
Green product innovation				
The product is:				
…Consumes less resources and energy.	0.886			
…Have environment-friendly product design.	0.785			
…Using material that is easy to recycle, reuse, and decompose.	0.878			
Green process innovation				
The process is as follows:				
…Reduces waste, hazardous substances, or pollution.	0.862			
…Reduces the consumption of coal, electricity, oil, and water.	0.722			
…Reduces raw materials.	0.915			
Environmental performance (EVP)		0.858	0.780	0.605
Our organization is:				
…Obeys environmental regulations.	0.756			
…Limits environmental impact beyond compliance.	0.843			
…Prevents and mitigates environmental crises.	0.831			
…Educates employees and the public about the environment.	0.767			

Resource: Author calculation

Table 3: Direct effect test results

Construct	Original sample	T-statistics	Sig values	Decision
Green Intellectual Capital -> Green Innovation	0.052	2.494	0.006	Significant
Green Intellectual Capital -> Environmental Performance	0.174	3.944	0.000	Significant
Green Transformational Leadership -> Green Innovation	0.911	83.445	0.000	Significant
Green Transformational Leadership -> Environmental Performance	0.061	0.597	0.276	Not significant
Green Innovation -> Environmental Performance	0.578	4.090	0.000	Significant

Resource: Author calculation

Table 4: Indirect effect test results

Construct	Original sample	T-statistics	Sig values	Decision
Green Intellectual Capital -> Green Innovation -> Environmental Performance	0.030	2.050	0.020	Partial Mediation
Green Transformational Leadership -> Green Innovation -> Environmental Performance	0.527	4.106	0.000	Full Mediation

Resource: Author calculation

orchestration theory, leaders are essential in managing the environment performance (Singh et al., 2020; Zhou et al., 2018). GTL is a type of leadership that supports using green intellectual capital in initiating green practices in organizations. SME owners play a key and strategic role in managing the organizational environment (Singh and El-Kassar, 2019), including implementing green innovation. Previous studies have proven that leadership motivation and the ability to engage in ethical activities are SMEs' main determinants of green innovation (Nkiko, 2013; Singh et al., 2020). SMEs that implement green innovation meet the pressure of pro-environmental stakeholders and effectively reduce energy consumption and environmental costs (Liu et al., 2022). However, this study failed to prove the effect of GTL on environmental performance. This result is probably because SME leaders are still focusing on improving economic performance after the Covid-19 pandemic, so they have not focused on environmental performance (Aristana et al., 2022). SME leaders do not fully understand the benefits of environmental performance on competitive advantage and industry reputation. This finding contradicts previous research, which found that practice GTL will lead organizations to achieve green performance (Chen and Chang, 2013) and environmental performance (Sobaih et al., 2020).

The results of the fifth hypothesis test reveal that green innovation improves environmental performance. Green innovation is one of the agendas that organizations conduct in environmental management. Green innovation is related to efforts to create environmentally friendly processes and products (Singh et al., 2020). The effective use of green innovation reduces the negative impact of business practices on the environment, such as reducing waste and costs (Weng et al., 2015) to improve social and financial performance. Previous empirical studies revealed that environmental performance is determined by process and service innovation to create environmentally friendly products (Oliva et al., 2019). This finding supports other studies that found that green innovation positively affects SMEs' environmental performance (Kraus et al., 2020; Rehman et al., 2021; Singh et al., 2020).

The sixth and seventh hypotheses were conducted to test the role of green motivation as a mediating variable in the relationship between GIC, GTL, and environmental performance. The test results of the sixth hypothesis show the role of green innovation as a partial mediation in the relationship between GIC and environmental performance. This study shows that GIC and green innovation variables significantly influence environmental performance. In the context of sustainability practices, effective GIC management encourages green innovation, ultimately increasing SMEs' financial performance. Green innovation also forces organizations to maximize the potential of human resources to innovate environmentally friendly products to improve environmental performance (Singh et al., 2020).

Unlike the sixth hypothesis testing, the results of the seventh hypothesis test show the role of green innovation as a full mediation in the relationship between GTL and environmental performance. Sustainability practices within the organization require the involvement of the owner or top management to institutionalize green practices within the organization. GTL is a type of leadership that can promote and initiate employees to implement green innovation in SME business practices (Singh et al., 2020). Nonetheless, this study shows that GTL cannot directly influence environmental performance. Therefore, green innovation becomes a mediating variable in the relationship between GTL and environmental performance. The GTL will initiate green practices in the organization through green innovation, further improving environmental performance.

5. CONCLUSION

This study aims to highlight the role of GIC and GTL on green innovation and environmental performance in SME in Indonesia. Regarding resource orchestration theory, this study orchestrates internal organizational resources to create environment-oriented innovations that improve environmental performance. This study proves that GIC managed effectively is a strong predictor for organizations to implement green innovation and improve environmental performance. Meanwhile, GTL has an inconsistent role. SMEs with the GTL motivate employees to create innovative processes and environmentally friendly products. These findings confirm the critical role of top management in embedding the concept of green business practices to promote green innovation. However, GTL cannot directly affect employees to improve environmental performance. The results also confirm that green innovation is a significant mediates variable for improving environmental performance.

This study yields theoretical and practical implications. Theoretically, the findings provide empirical results that apply resource orchestration theory in analyzing sustainability practices in SMEs. Referring to this theory, SMEs should maximize the role of IC and leadership roles to create green innovation within the organization. Moreover, green innovation plays a significant mediating role in the relationship between leadership type and environmental performance. Practically, the findings provide several recommendations for SMEs. First, SMEs should direct eco-oriented intellectual capital to adopt green innovations in their organizations. Environmentally oriented SMEs will collaborate with customers, suppliers, and partners concerned about environmental issues to improve environmental performance. Second, these findings emphasize the role and commitment of SME owners in formulating policies related to environmentally friendly business practices, including creating GIC. SMEs should be actively involved in designing production processes and product designs that are environmentally friendly.

This study is inseparable from research limitations. First, the environmental performance assessment is only based on the internal parties of SMEs. The answers given may be subjective, causing research bias. Further studies must involve respondents from external parties, such as vendors or customers, to provide comparative information regarding the organization's environmental performance. Second, the sample is limited to manufacturing industries in developing countries. Future research can expand research into other sectors and compare performance between sectors. In addition, further studies can compare the results of studies in developing countries with developed countries with different institution backgrounds.

6. ACKNOWLEDGMENT

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