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From Knowledge to Action: Exploring Green Intellectual Capital's Role in Sustainable Organizational Performance for Millennials

Lenny Christina Nawangsari*, Indra Siswanti, Agus Arijanto, Mas Wahyu

Faculty Economic and Business, Mercu Buana University, Jl. Raya Meruya Selatan, Jakarta Barat,Indonesia.
*Email: lenny.christina@mercubuana.ac.id

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ABSTRACT

In today's competitive landscape, the role of Green Intellectual Capital in driving Sustainable Organizational Performance is receiving increasing attention. Organizations are under pressure to adopt sustainable practices, so exploring the influence of intellectual capital on performance is important. This study aims to examine the effect of Green Intellectual Capital consisting of Green Human Capital, Green Relational Capital and Green Structural Capital on Sustainable Organizational Performance, with Green Innovation Behavior as a mediating variable and Perceived Green Organizational Support as a moderating factor. The research design used was quantitative involving 200 millennial managers and the data was analysed using Partial Least Squares (PLS). The results show that to achieve sustainable organizational performance, millennial managers need to focus their efforts on improving Green Structural Capital and encouraging Green Innovation Behavior. In addition, the development of Gren Human Capital and Green Relational Capital should be geared towards increasing Green Innovation as a pathway to achieving sustainability goals. Perceived Green Organizational Support is not enough to strengthen the relationship of innovation and performance, so a more holistic approach in promoting sustainability across the organization is needed. The novelty of this research lies in its focus on millennial managers and the complex interconnectedness of different components of Green Intellectual Capital. The findings suggest that organizations should prioritize increasing Green Structural Capital and encouraging Green Innovation Behaviors. Future research should explore other moderating factors, such as leadership style, to deepen understanding of the conditions that amplify the impact of green innovation on sustainable performance.

Keywords: Green Intellectual Capital, Sustainable Organizational Performance, Green Innovation Behavior, Perceived Green Organizational Support
JEL Classifications: L2, M2,O1

1. INTRODUCTION

In an era where sustainability is becoming increasingly important for organizational success, the role of Green Intellectual Capital (GIC) in driving Sustainable Organizational Performance (SOP) is receiving significant attention. Companies today face growing pressure from stakeholders, governments, and consumers to implement sustainable practices that balance profitability with environmental responsibility. This urgency is particularly relevant as businesses strive to remain competitive in a market that increasingly values sustainability. According to the World Economic Forum (2023), more than 80% of global companies now prioritize environmental, social and governance (ESG) factors in their strategies, reflecting the growing demand for sustainable operations. Millennials, who now make up the largest share of the global workforce, have unique characteristics that make them an important focus of research on Green Intellectual Capital (GIC) and Sustainable Organizational Performance (SOP). Millennials are known to have high environmental awareness and consider sustainability as a key factor in choosing a company to work for and contribute to. According to the Deloitte Millennial Survey report (2020), 75% of millennials think that companies should be actively

involved in environmental issues, and sustainability is one of the main reasons they remain loyal to the organization. This generation is also known to be more open to green innovation and technology, and has high expectations of organizations that support green behavior through clear policies. Perceived Green Organizational Support (PGOS) plays an important role in determining how much millennials will engage in Green Innovation Behavior (GIB), which can ultimately improve the sustainability performance of an organization. Therefore, examining the role of GIC and PGOS in the millennial context is critical to understanding how organizations can optimize the potential of this generation in achieving sustainability goals. In addition, millennials are expected to be the future leaders of organizations, so understanding how they respond to green policies and support green innovation can provide important insights for shaping long-term sustainability strategies. Companies that fail to adapt to millennial values risk losing top talent who are motivated to work in organizations that have a real commitment to sustainability. Green Intellectual Capital refers to the collective knowledge, skills and resources within an organization that contribute to innovation and environmental sustainability. Companies that utilize their intellectual capital effectively can foster Green Innovation Behaviour (GIB), which directly contributes to their sustainability goals. Recent studies highlight the importance of green knowledge management, innovation and structural support in driving sustainable performance. For example, Chen et al. (2022) emphasized that effective green knowledge management has a direct impact on an organization's ability to innovate sustainably. Moreover, as millennials increasingly demand greener practices, understanding how perceptions of support within the organization influence these behaviors is critical to retaining talent and maintaining competitiveness.

Several studies explored the relationship between Green Intellectual Capital, Sustainable Performance, and Green Innovation Behavior. Research by Jabbour et al. (2020), Najib and Lenny (2021) found that organizations with strong green intellectual capital are more likely to engage in environmentally innovative practices, resulting in better sustainability outcomes. Similarly, Dumont et al. (2022) research identified the mediating role of green innovation behavior in translating green human capital into sustainable organizational outcomes. On the other hand, Tang et al. (2023) research shows that Perceived Green Organizational Support (PGOS) plays an important role in reinforcing employees' green behavior, but its moderating effects on innovation behavior and performance remain unexplored. These studies provide valuable insights but still leave some questions unanswered regarding the specific mechanisms through which GIC influences SOP, particularly among millennial managers. Despite the growing body of literature on green intellectual capital and sustainability, there is still a gap in understanding how Green Innovation Behaviour mediates the relationship between GIC and SOP, especially when moderated by Perceived Green Organizational Support. While previous research has identified the importance of Green Human Capital and Green Structural Capital in driving sustainable innovation, little research has examined the combined impact of these factors on organizations led by millennials. Furthermore, the role of PGOS in moderating green behavior remains unclear, with limited empirical evidence showing how perceived organizational support influences the efficacy of green innovation in driving sustainable performance.

This study contributes to the existing literature by focusing specifically on millennial managers, a demographic that has not been thoroughly explored in the context of green intellectual capital and sustainability. Additionally, this study introduces Perceived Green Organizational Support (PGOS) as a potential moderating factor, which tests how perceived support affects the strength of the relationship between Green Innovation Behaviour and Sustainable Organizational Performance. The inclusion of mediation and moderation models presents a new framework for understanding how Green Intellectual Capital can be effectively leveraged to achieve sustainability goals in organizations with a significant millennial workforce. By addressing this gap, this research is expected to provide practical insights for organizations looking to improve their sustainability strategies through effective management of green intellectual capital and encouraging Innovation behavior among millennial employees.

2. LITERATURE REVIEW

2.1. Green Intellectual Capital (GIC)

Green Intelectual Capital refers to the knowledge, experience, and intellectual assets of an organization that contribute to environmentally friendly practices. GIC is usually divided into three components: Green Human Capital, Green Structural Capital, and Green Relational Capital. Green Human Capital involves employees' skills, knowledge, and environmental awareness. The study by Jabbour et al. (2020) emphasizes the importance of training employees on sustainability, enabling them to contribute to green innovation. Green Structural Capital refers to organizational processes, systems, and databases that support environmental practices. According to Chen et al. (2022), firms with strong green structural capital are more likely to achieve sustainable performance through effective knowledge management. Green Relational Capital involves external relationships with stakeholders, including suppliers, customers, and communities, that focus on sustainability. Dumont et al. (2022) highlighted the importance of external collaboration in driving green innovation. Collectively, GIC enables organizations to leverage intellectual resources to drive innovation and sustainability. This has been shown to have a direct influence on Sustainable Organizational Performance (SOP) by improving the firm's ability to respond to environmental challenges.

2.2. Green Innovation Behavior (GIB)

Green Innovation Behavior is defined as employee actions and initiatives that lead to the development of environmentally friendly products, processes and technologies. GIB is considered a key driver of sustainable performance as it enables organizations to adapt to market pressures and regulatory demands for sustainability. According to Robertson and Barling (2020), employees are more likely to engage in environmentally innovative behaviors when they feel strong support from their organization. This includes providing resources, recognition, and incentives for green actions. Norton et al. (2021) found that GIB is critical in

translating environmental knowledge into practical outcomes, such as energy conservation and waste reduction. Employees engaged in GIB directly contribute to the environmental performance of the organization.

Tang et al. (2023) emphasizes that GIB mediates the relationship between GIC and SOP, indicating that without employees' proactive involvement in green innovation, the potential of intellectual capital is unlikely to be fully realized. GIB not only improves operational efficiency but also helps organizations remain competitive by leading in environmental innovation. According to Robertson and Barling (2020), employees are more likely to engage in environmentally innovative behaviors when they perceive strong support from their organization. This includes providing resources, recognition, and incentives for green actions.

2.3. Perceived Green Organizational Support (PGOS)

Perceived Green Organizational Support refers to employees' perceptions of how much their organization supports and values their green initiatives. This construct is very important because it can influence the extent to which employees engage in Green Behavior. Zhao et al. (2022) found that PGOS moderates the relationship between GIC and GIB, meaning that the more employees feel supported in green initiatives, the more likely they are to engage in behaviors that contribute to sustainable performance. When PGOS is high, employees feel empowered to use their knowledge and skills to innovate and implement sustainable practices.

2.4. Sustainable Organizational Performance (SOP)

Sustainable Organizational Performance (SOP) refers to a company's ability to operate profitably while minimizing environmental impacts and enhancing social responsibility. SOP is typically measured through a combination of environmental, social, and financial metrics. Chen et al. (2022) argue that organizations with high levels of GIC are better positioned to achieve SOP because they can continuously innovate to meet environmental standards. They are also more resilient in responding to environmental regulations and market demands for sustainability. The study by Dumont et al. (2022) states that SOP is not just about compliance but involves proactive innovation driven by intellectual capital and green behaviors. Organizations that actively invest in building GIC and developing GIB are likely to reap long-term benefits in sustainability and overall performance.

Based on theory and previous research, the research model can be seen in Figure 1 below:

The hypothesis in this study are:

- H_1: Green Human Capital has a positive and significant effect on Sustainable Organization Performance
- H_2: Green Structural Capital has a positive and significant effect on Sustainable Organization Performance.
- H_3: Green Relational Capital has a positive and significant effect on Sustainable Organization Performance
- H_4: Green Human Capital has a positive and significant effect on Green Innovation Behavior
- H_5: Green Structural Capital has a positive and significant effect on Green Innovation Behavior
- H_6: Green Relational Capital has a positive and significant effect on Green Innovation Behavior
- H_7: Green Innovation Behavior has a positive and significant effect on Sustainable Organization Performance
- H_8: Perceived green organizational support moderates the Green Innovative Behavior on Sustainable Organization Performance
- H_9: Green Innovation Behavior mediates the effect of Green Human Capital on Sustainable Organizational Performance
- H_{10}: Green Innovation Behavior mediates the effect of Green Structural Capital on Sustainable Organizational Performance.
- H_{11}: Green Innovation Behavior mediates the effect of Green Relational Capital on Sustainable Organizational Performance.

3. RESEARCH METHODOLOGY

This research uses a quantitative research approach to examine the relationship between Green Intelectual Capital (Green Human Capital, Green Struktural Capital and Green Relational Capital), Green Innovation Behaviour (GIB), Perceived green organizational support (PGOS), and Sustanable Organization Performance (SOP). The population consists of 200 orang manager milenia. Data collection was carried out through a survey method, using a structured questionnaire with a Likert scale to measure respondents' perceptions of GIC, GIB, PGOS dan SOP. The measurement instrument was adapted from a validated scale. Data were analyzed using Partial Least Squares (PLS), a variance-based structural equation modeling (SEM) technique (Ghozali, 2014)

4. RESULTS AND DISCUSSION

4.1. Result

The results of the analysis using SEM-PLS can be seen Figure 2. The results of hypothesis testing using smartPLS 3 software can be seen in the following table 1 and table 2

4.2. Discussion

Green Human Capital (GHC) encompasses employees' knowledge, skills and attitudes related to environmental sustainability. However, the potential of GHC may not have been optimally implemented in the organizations studied so there is no strong integration with the management system and organizational culture. Although employees have green competencies, without a supportive structure, their contribution to organizational performance may not be maximized. The results of this study are in line with research conducted by Roscoe et al. (2020) which proves that Green Human Capital does not have a direct and significant influence on sustainable performance, but its influence can be more felt if combined with Green Structural Capital and organizational policy support. Research by Chen et al (2022) also proves that Green Human Capital is not proven to affect sustainability performance directly, Research by Kezia et.al (2020) also prove that Green Human Capital cannot stand alone in influencing organizational performance. The results of this study are different from the results of research by by Meng et al (2023) which states that GHC has an effect on SOP.

Green Structural Capital (GSC) includes the physical infrastructure, policies, procedures, and technologies that an organization has that support environmentally friendly practices. Organizations that have green infrastructure (e.g., energy-efficient technologies, environmental management systems, and sustainability policies) enable more efficient and sustainable business processes, thus positively impacting Sustainable Organization Performance. Reduced resource use, better waste management, and energy efficiency can increase productivity and reduce operating costs. Green Structural Capital allows organizations to more easily comply with environmental regulations and improve corporate reputation. Organizations that comply with environmental regulations and have good sustainability policies will be perceived as responsible companies, which can improve relationships with stakeholders and competitiveness in the market.

Previous research that supports the results of this study is research conducted by Wang et al. (2020) found that Green Structural Capital has a significant influence on organizational sustainability performance, especially through the application of green technology and environmental management systems. Research conducted by Yong et al. (2021) shows that companies that have good Green Structural Capital, such as strong environmental policies and green infrastructure, experience a significant increase in Sustainable Organizational Performance. Research conducted by Sanchez and Rodriguez (2022), Muhammad et al. (2022) and Marco et.al (2022) found that Green Structural Capital plays an important role in driving organizational sustainability performance, especially in terms of green innovation and operational efficiency. Li et al. (2023) in their research found that Green Structural Capital not only has a significant effect on organizational performance directly, but also strengthens the organization's ability to deal with changes in environmental regulations.

While Green Relational Capital (GRC) plays an important role in expanding a firm's environmental network, research suggests that GRC may not always have a significant direct influence on Sustainable Organizational Performance (SOP). This is due to several things, such as external dependencies. External relationships are often beyond the direct control of the company. Research by Zhao et al. (2022) shows that interactions with external stakeholders may not always have direct or significant results on sustainability performance due to differences in interests or goals between the company and external stakeholders. In some cases, these green relationships are more strategic and long-term oriented, so their impact on SOPs is not yet visible in the short term. Collaboration challenges are also one of the reasons, as research conducted by Tang et al. (2023) showed that while green external relationships have the potential to improve sustainability, gaps in communication, collaboration, and prioritization can hinder the expected results.

This explains why GRC often has no direct effect on SOPs, especially in the context of industries that face cross-organizational coordination challenges.

Green Human Capital (GHC) refers to the skills, knowledge, and environmental commitment possessed by employees, which play an important role in driving Green Innovation Behavior (GIB). GHC has a positive impact on GIB because human resources who are knowledgeable and skilled in green practices have a greater capacity to generate sustainable innovation. Employees who have strong knowledge of environmental issues are more capable of contributing to green innovation. Research conducted by Jabbour et al. (2020) highlighted that GHC strengthens employees' ability to identify environmentally friendly innovation opportunities, such as energy efficiency, waste reduction, and green product development. Employees who are adequately trained in green practices tend to be more creative in creating sustainable solutions. Employees who are environmentally conscious and committed to sustainability are more motivated to engage in GIB. Likewise, research conducted by Dumont et al. (2022) showed that employees who have a deep understanding of the importance of sustainability and its impact on the organization tend to be more active in innovating to support the company's green goals.

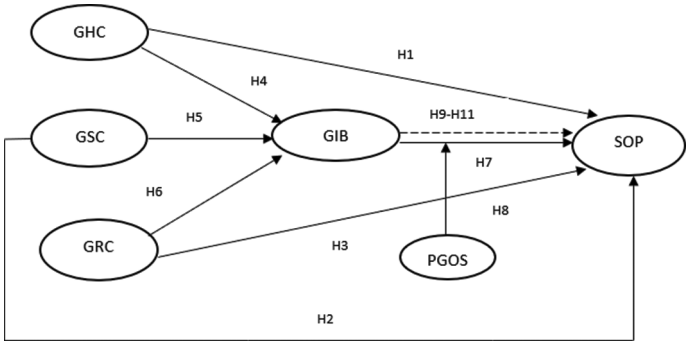
The results of the study indicate that Green Structural Capital has no direct effect on Green Innovation Behavior (GIB). The main reason is that organizational structure, although important for managing green resources, often only acts as a passive enabler or supporter and does not directly encourage green innovation behavior among employees. Research conducted by Chen et al. (2022) argues that GSC provides infrastructure to support green initiatives, but does not directly encourage green innovation. Green innovation is more often driven by knowledgeable human resources and supported by an organizational culture that supports sustainability, not just by the formal structure of the organization. Research by Dumont et al. (2022) shows that green systems and procedures may not be enough to trigger innovative behavior if employees are not properly encouraged or facilitated through knowledge and skills. Often, GIB requires initiative from individuals or teams of employees who have the capacity to innovate, which may not be achieved only through the available green infrastructure. Therefore, although GSC is important for overall sustainability, its impact on Green Innovation Behavior (GIB) may be limited because it is more structural and supportive, not the main driver of green innovation.

Green Relational Capital (GRC) plays an important role in Green Innovation Behavior (GIB) because strong external relationships allow companies to access external resources, knowledge, and innovative ideas that can be used to support green innovation within the organization. Research conducted by Tang et al. (2023), Khawajaet. et al (2022) and Sidra et al (2022) shows that GRC helps strengthen the organization's green network, which ultimately expands the potential for green innovation. Good relationships with external partners encourage the exchange of innovative ideas and green technologies that can enhance employee creativity in creating sustainable solutions.

Meanwhile, research by Chen et al. (2022) suggests that strong external relationships with stakeholders allow companies to access environmental knowledge and resources that can be used to support green innovation. By collaborating with external parties, companies can gain new ideas and technologies that enable them to develop more environmentally friendly products and processes.

Green Innovation Behavior (GIB) refers to employees' innovative actions that focus on environmentally friendly practices and solutions that contribute to the organization's sustainable performance. GIB has a positive and significant impact on Sustainable Organizational Performance (SOP) because green innovation improves operational efficiency, meets market demand for environmentally friendly products, and complies with increasingly stringent environmental regulations. Research by Norton et al. (2021) shows that green innovation enables companies to reduce energy use, manage waste more efficiently, and increase productivity through more environmentally friendly processes. These reductions in operational costs contribute directly to improving the overall performance of the organization.

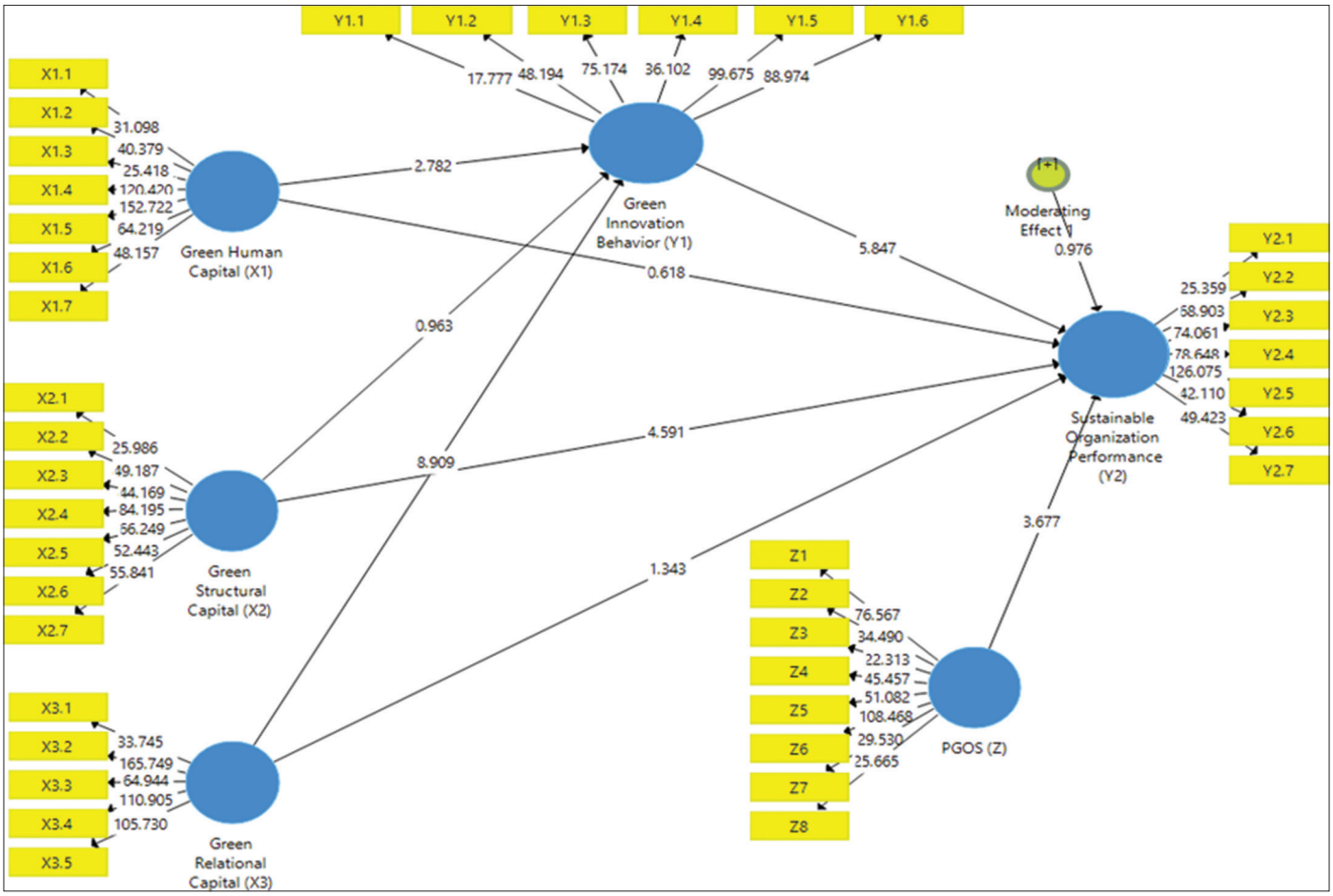
Figure 1: Research Model



Research by Zhao et al. (2022) shows that companies that consistently innovate in terms of sustainability have a better reputation in the eyes of stakeholders. This drives customer loyalty and attracts greater investment from parties that support sustainability, which ultimately contributes to Sustainable Organizational Performance (SOP).

Perceived Green Organizational Support (PGOS) refers to employees' perceptions of the extent to which the organization supports their green efforts. Several research results show the influence of PGOS on SOP, namely research by Mohammed (2020) and Ratih and Lenny (2024). The results of this study indicate that PGOS does not significantly moderate the relationship between GIB and Sustainable Organizational Performance (SOP) for several reasons. Several studies suggest that employees who already have strong internal motivation and competence in green innovation may not rely too much on organizational support to produce sustainable performance. Research by Norton et al. (2021) shows that employees who are proactive in green innovation are more influenced by intrinsic motivation and individual factors, such as knowledge and experience, than perceptions of organizational support. In this case, PGOS may not be significant in moderating the relationship between GIB and SOP. Research by Dumont et al. (2022) states that PGOS can fail to be a strong moderating factor if there are other more dominant external factors, such as government regulations or market pressures. Organizations

Figure 2: Bootstrapping with SmartPLS



Source: Processed from primary data using SmartPLS

Table 1: Hypothesis testing for direct effects

Relationship between variable	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
Green Human Capital (X1) -> Sustainable Organization Performance (Y2)	−0.035	0.056	0.618	0.537	No effect
Green Structural Capital (X2) -> Sustainable Organization Performance (Y2)	0.308	0.067	4.591	0.000	Positive and significant effect
Green Relational Capital (X3) -> Sustainable Organization Performance (Y2)	−0.094	0.070	1.343	0.180	No effect
Green Human Capital (X1) -> Green Innovation Behavior (Y1)	0.203	0.073	2.782	0.006	Positive and significant effect
Green Structural Capital (X2) -> Green Innovation Behavior (Y1)	−0.069	0.071	0.963	0.336	No effect
Green Relational Capital (X3) -> Green Innovation Behavior (Y1)	0.794	0.089	8.909	0.000	Positive and significant effect
Green Innovation Behavior (Y1) -> Sustainable Organization Performance (Y2)	0.484	0.083	5.847	0.000	Positive and significant effect
PGOS (Z) -> Sustainable Organization Performance (Y2)	0.310	0.084	3.677	0.000	Positive and significant effect
Moderating Effect 1 -> Sustainable Organization Performance (Y2)	−0.019	0.019	0.976	0.330	No effect

Source: Results of analysis using SmartPLS

Table 2: Hypothesis testing for indirect influence

Relationship between variable	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Results
Green Human Capital (X1) -> Green Innovation Behavior (Y1) -> Sustainable Organization Performance (Y2)	0.098	0.041	2.423	0.016	Positive and significant effect
Green Structural Capital (X2) -> Green Innovation Behavior (Y1) -> Sustainable Organization Performance (Y)	-0.033	0.035	0.953	0.341	No effect
Green Relational Capital (X3) -> Green Innovation Behavior (Y1) -> Sustainable Organization Performance	0.384	0.078	4.956	0.000	Positive and significant effect

Source: Results of analysis using SmartPLS

operating in contexts where environmental regulations are stringent may see a stronger relationship between GIB and SOPs without the need for perceived support from employees.

Green Human Capital (GHC) can directly affect Sustainable Organizational Performance (SOP), research shows that its influence is often mediated by Green Innovation Behavior (GIB). GIB is an important mechanism that bridges green knowledge and skills with the implementation of innovative actions that have an impact on sustainability.

Research by Chen et al. (2022) suggests that employees who have adequate green knowledge tend to be more capable of converting this knowledge into innovations that support sustainability. GHC provides a strong foundation for green innovation, but this innovation must be realized through real actions, such as developing environmentally friendly products and implementing more environmentally efficient processes. Therefore, GIB acts as an intermediary that converts knowledge into measurable results in terms of sustainability performance.

Green Innovation Behavior (GIB) does not mediate the effect of GSC on SOP because existing green infrastructure and processes often only act as a support, not as a driver of innovation. Innovative behavior is more influenced by individual and cultural aspects than by formal structures alone. Tang et al.'s (2023) research shows that although GSC can improve organizational efficiency, these green systems and processes may not be enough to facilitate or encourage employees to produce innovative behavior. GIB is usually more influenced by Green Human Capital and individual employee motivation to implement sustainable innovation, not just by existing structures or processes. According to Dumont et al. (2022), GSC can provide a foundation for sustainable operations but is not always directly related to innovative performance. Without encouragement from organizational culture or individual initiatives, green structures tend to be static supports that do not encourage the innovation needed to improve a company's sustainability performance.

Green Innovation Behavior (GIB) mediates the effect of Green Relational Capital (GRC) on Sustainable Organizational Performance (SOP) by converting external relationships into innovations that support corporate sustainability. Chen et al. (2022) highlighted that GRC provides access to innovative ideas that can be used by the organization, but these ideas are only effective when employees implement them in innovative behavior. Employees can utilize information from external partners to create green solutions that then contribute to the Company's sustainable performance. Meanwhile, research by Tang et al. (2023) emphasized that GRC facilitates external collaboration which is important for the development of green innovation. However, this collaboration must be internalized through Green Innovation Behavior (GIB) in order to have a significant effect on Sustainable Organizational Performance (SOP). Employees involved in green innovation can

utilize these external relationships to develop new practices that are more environmentally friendly.

For millennial managers, these findings suggest that success in achieving sustainable performance depends not only on human capital, but also on how this capital is translated into concrete innovation. Managers need to focus on improving organizational structures that support sustainability while encouraging innovative behavior among employees. On the other hand, efforts to strengthen organizational support for green practices need to be supported by policies that facilitate the actual implementation of green innovation, rather than relying solely on perceptions.

5. CONCLUSION AND SUGGESTIONS

5.1. Conclusion

This study highlights the importance of green intellectual capital in influencing sustainable organizational performance, focusing on green innovation behaviour as a mediating variable. From the results of the study, there are several important points that can be concluded: First, Green Structural Capital and Green Innovation Behaviour are the main factors that contribute directly to sustainable organizational performance. Green structural capital, such as systems and infrastructure that support sustainability, as well as innovative behaviour oriented towards green solutions, have been shown to be drivers of better performance in the organizational context. Second, Green Human Capital and Green Relational Capital do not have a direct influence on sustainable organizational performance, although human and relational capital are often considered crucial in building overall organizational capabilities. This suggests that although the existence of green human resources and external relationships is important, their direct contribution to sustainable performance requires utilization through innovation. Third, the influence of Green Human Capital and Green Relational Capital on sustainable organizational performance is mediated by Green Innovation Behaviour. This indicates that human and relational capital can only influence sustainable performance if they are able to encourage green innovation within the organization. Therefore, millennial managers need to pay attention to the importance of linking green expertise and relationships with innovation as a tool to achieve sustainability goals. Fourth, Green Structural Capital has no effect on Green Innovation Behaviour, indicating that green structural capital does not directly stimulate green innovation. This could mean that although infrastructure and systems support sustainability, they do not automatically encourage innovative behaviour. Millennial managers need to find ways to integrate structural capital with innovation efforts, for example through training, internal policies, or reward mechanisms. Fifth, Green Innovation Behaviour mediates the relationship between Green Human Capital and Green Relational Capital with sustainable organizational performance. This emphasizes the importance of innovation as a link between human resources, external relationships, and sustainability achievement. Sixth, Green Innovation Behaviour does not mediate the effect of Green Structural Capital on sustainable organizational performance, confirming that structural capital directly affects performance without going through green innovation. Seventh, Perceived Green Organizational Support does not moderate the relationship between Green Innovation Behaviour and sustainable organizational performance. Perceived organizational support does not play a significant role in strengthening the relationship between green innovation and performance outcomes, which may be due to the presence of other factors, such as leadership style or organizational culture, that are more relevant in supporting green innovation.

5.2. Suggestions

This research provides six practical management suggestions: First, Companies need to improve green technology by adopting infrastructure that supports energy efficiency and emission reduction, such as digital environmental management systems and renewable energy technologies. In addition, companies must update organizational policies and procedures by considering environmental impacts in every aspect, including procurement and resource management. To support this implementation, it is also important to build a green knowledge system by creating a database that stores best practices in environmental management, which can be accessed by all employees. Second, companies need to implement green competency training and development for employees to improve environmental skills, such as waste management, energy efficiency, and green innovation. In addition, companies should encourage employees to obtain professional environmental certifications, such as ISO 14001, to improve their capabilities in the field of sustainability. To further motivate, companies are also advised to create an environmental award program, which rewards employees who contribute to green initiatives, such as waste reduction and energy efficiency improvements. Third, Companies need to collaborate with green suppliers by building relationships with suppliers who focus on green products and processes, and conducting environmental assessments to ensure the sustainability of the supply chain. In addition, it is important to form partnerships with communities and environmental NGOs through involvement in community projects or environmental initiatives, in order to strengthen the company's reputation in the eyes of stakeholders. On the other hand, companies should also socialize green practices to clients and customers through educational campaigns on the benefits of green products and services, and encourage their participation in the company's green programs. Fourth, Companies need to build a green innovation environment by creating a work culture that encourages employees to generate innovative ideas related to sustainability through programs such as "green innovation labs" and brainstorming sessions on environmental issues. In addition, the launch of a structured green innovation program that focuses on the development of products and processes that reduce environmental impacts, such as the use of recycled materials and low-carbon technologies, is essential. Companies are also advised to empower cross-functional teams to work together on green innovation projects, leveraging perspectives from various business functions. In addition, providing incentives for environmentally friendly innovation in the form of bonuses or special awards to employees or teams who successfully implement innovative ideas with a positive impact on the environment will further encourage their contribution. Fifth, Companies need to maintain consistent communication about green commitments, ensuring that sustainability policies and

commitments are always transparent through newsletters, regular meetings, or internal media. In addition, companies are advised to provide support for employee green activities, such as allocating resources, time, and equipment for sustainability projects in the office or community.

Leadership that demonstrates environmental commitment is also very important, where leaders must be role models in supporting green initiatives. Finally, companies need to facilitate employee feedback on green initiatives, providing space for employees to submit ideas and receive quick responses as a form of real support for sustainability programs. Sixth, Companies are advised to integrate Green KPIs (Key Performance Indicators) related to the environment in performance assessments, such as reducing carbon footprint, increasing energy efficiency, and the number of green innovations implemented. In addition, periodic sustainability audits need to be conducted to assess the impact of environmentally friendly measures on the organization's operational and financial performance. Performance assessments should also be based on environmental impact, by measuring the social and environmental impacts of the organization's activities and publishing the results to strengthen employee and public perceptions of the Company's commitment to environmental responsibility.

Limitations and suggestions for further research: First, this study has limitations in terms of the accuracy of measuring the variables Green Human Capital, Green Relational Capital, and Green Structural Capital. The instruments used may not fully capture the complexity of each dimension of green capital. For example, Green Human Capital may require more indicators that are relevant to sustainability. Further research is suggested to use more detailed and specific measurement instruments, especially related to Green Human Capital and Green Relational Capital. Adding new indicators, such as employee involvement in ongoing training or long-term partnerships with external parties related to sustainability, can enrich the findings. Second, the absence of a moderating effect of perceived green organizational support may indicate limitations in the method or scale used to measure perceptions of organizational support for green initiatives. Other factors that may not be identified may be more relevant in this relationship. Future research should consider external factors, such as national environmental policies, regulations, and green market pressures, that may influence how Green Structural Capital affects Green Innovation Behaviour and Sustainable Organization Performance. These variables could be stronger mediators or moderators in the model. Third, the results of this study may be very contextual and limited to a particular industry or region, making it difficult to generalize to other sectors or in different locations. For example, sectors that are more oriented towards technological innovation may show different results compared to more traditional sectors. For future research, it is expected to increase the generalizability of the research results, it is better to conduct research in various industry sectors and geographic regions. This will provide a broader picture of how Green Intellectual Capital and Green Innovation Behaviour affect Sustainable Organizational Performance in various contexts.

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