SOCIAL AND MANAGEMENT SCIENCES RESEARCH JOURNAL

www.smsrj.com

p-ISSN: 2791-0415 **e-ISSN:** 2791-0423

Volume:3 Issue: 02 (2025)

GREEN INTELLECTUAL CAPITAL, GREEN INNOVATION AND SUSTAINABLE PERFORMANCE OF SMES IN MALAYSIA

Ramakrishnan Nair Gunasaigran
Amity Global Business School, Singapore.
Email: ramakrishnannairgp@gmail.com

Vijendran Govindaraju
Amity Global Business School, Singapore.
Email: govindarajuvijendran@gmail.com

Saralah Devi Mariamdaran Chethiyar
School of Applied Psychology, Social Work and Policy, College of Arts and Sciences, University Utara Malaysia.
Email: devi@uum.edu.my

Syed Muzaffar Hussain*
Department of Psychology, Multan University of Science and Technology.
Email: syedbzu@gmail.com

Abstract:

Small and Medium Enterprises (SMEs) are the backbone of Malaysia's economy, contributing significantly to GDP, employment, and exports. However, these firms face persistent challenges in adopting sustainable practices due to financial constraints, technological gaps, and limited awareness of environmental initiatives. With increasing global demand for sustainable business models, Malaysian SMEs must leverage intangible resources and innovation to remain competitive. This study investigates the influence of Green Intellectual Capital (GIC) and Green Innovation (GI) on the sustainable performance of Malaysian manufacturing SMEs. Grounded in sustainability and innovation management theories, the research develops a conceptual framework that integrates GIC—comprising green human, structural, and relational capital—with GI as key drivers of economic, environmental, and social performance. A quantitative approach was employed, collecting data from 325 SMEs using structured questionnaires and analyzing the results through SPSS. The study revealed empirical insights into how GIC and GI enhance sustainable performance, offering theoretical contributions to sustainability literature in the SME context and practical implications for policymakers and managers. Findings guide targeted policies, capacity-building programs, and green

innovation strategies, thereby supporting Malaysia's broader goals of achieving carbon neutrality by 2050 and aligning with the United Nations Sustainable Development Goals.

Keywords: *Green Intellectual Capital; Green Innovation; Sustainable Performance; SMEs; Malaysia; Manufacturing; PLS-SEM.*

1. INTRODUCTION

Small and Medium Enterprises (SMEs) are the backbone of Malaysia's economy, constituting 97.2% of all business establishments, contributing 38.4% to GDP, and providing nearly 48% of employment (SME Corp Malaysia, 2023). SMEs also account for 17.9% of Malaysia's total exports, underscoring their importance in the nation's trade performance. They play a vital role in job creation, entrepreneurship, regional development, and innovation diffusion. Beyond their economic role, SMEs contribute to social integration, skill-building, and community development, thus reinforcing Malaysia's inclusive development agenda (World Bank, 2020).

The Malaysian government, through SME Corp Malaysia, Bank Negara Malaysia (BNM), and related agencies, has introduced various programs to facilitate SME development. Notable initiatives include digitalization incentives, access-to-finance schemes, and green technology grants under the Green Technology Financing Scheme (GTFS). The Twelfth Malaysia Plan (2021–2025) highlights SMEs as central to achieving inclusive and sustainable growth, with a clear emphasis on sustainability, green transformation, and resilience (Government of Malaysia, 2021). Policies such as the National Policy on Climate Change (2009) and the Green Technology Master Plan (2017–2030) serve as important frameworks guiding SMEs toward sustainability.

Malaysia's manufacturing SMEs—particularly in electronics, automotive components, food and beverage processing, and palm oil downstream industries—are major contributors to export earnings. However, these firms face persistent challenges such as limited access to advanced technologies, skill shortages, and constraints in innovation capability (BNM, 2020). With increasing environmental awareness and rising global demand for sustainable practices, Malaysian SMEs are under pressure to embrace sustainability and green innovation to remain competitive (Yusliza et al., 2020; Asadi et al., 2020). This study aims to investigate how Green Intellectual Capital (GIC) and Green Innovation (GI) influence the sustainable performance of SMEs in Malaysia.

2. Problem Statement

Although SMEs are vital for Malaysia's economy, they face numerous barriers that hinder sustainable growth. The COVID-19 pandemic significantly impacted SMEs, with over 70% reporting a decline in revenue and many struggling to survive (BNM, 2020). While recovery has begun, SMEs continue to grapple with systemic challenges that make it difficult to achieve long-term sustainable performance.

Firstly, financial constraints remain a pressing issue. Many SMEs face difficulties in accessing bank loans or venture capital, particularly for investments in green technologies or sustainability-driven projects. Although the Malaysian government has introduced initiatives such as the Green

Technology Financing Scheme (GTFS), uptake among SMEs has been relatively slow due to complex application procedures, stringent requirements, and limited awareness (Asadi et al., 2020).

Secondly, technological adoption and skills gaps present another major challenge. SMEs often lack the technical expertise and skilled workforce needed to adopt green innovations effectively. Limited knowledge in areas such as renewable energy, cleaner production processes, and eco-friendly product design hinders their ability to compete with larger firms and meet global sustainability standards (Yusliza et al., 2020).

Thirdly, many SMEs in Malaysia exhibit low awareness and adoption of sustainability practices. Immediate survival and short-term profitability are often prioritized over long-term sustainability, leading to minimal investment in environmental and social initiatives. This mindset not only reduces competitiveness in export markets, where international buyers increasingly demand compliance with sustainability standards, but also limits the resilience of SMEs in adapting to future environmental regulations (World Bank, 2020).

In addition, global competitiveness pressures place further strain on Malaysian SMEs. International trade partners and multinational corporations require suppliers to demonstrate compliance with environmental, social, and governance (ESG) practices. SMEs that fail to align with these requirements risk exclusion from global value chains, thereby jeopardizing their growth and export potential (Khan & Johl, 2019).

Lastly, there is a research and policy gap in understanding how SMEs can leverage intangible assets, such as Green Intellectual Capital, and strategies like Green Innovation to overcome these challenges. While global studies confirm positive links between green practices and business performance (Wu et al., 2013; Wang & Juo, 2021), empirical evidence specific to Malaysian SMEs is limited. This lack of localized research leaves policymakers and SME managers without clear guidance on how to integrate sustainability effectively into their business models. In light of these challenges, this research seeks to fill the gap by examining the role of Green Intellectual Capital and Green Innovation in enhancing the sustainable performance of Malaysian SMEs, particularly in the manufacturing sector.

3. Literature Review

3.1 SMEs in Malaysia

SMEs in Malaysia are recognized as key drivers of economic development, innovation, and job creation. According to SME Corp Malaysia (2023), SMEs represent over 97% of business establishments, contribute more than 38% to GDP, and employ nearly half of the country's workforce. The government has long acknowledged their importance, implementing strategic initiatives such as the SME Masterplan and the Twelfth Malaysia Plan to strengthen their competitiveness. Despite this support, Malaysian SMEs still face barriers in productivity, access to financing, adoption of technology, and integration into global value chains (BNM, 2020). Compared with larger enterprises, SMEs are more vulnerable to market fluctuations, economic

downturns, and crises such as the COVID-19 pandemic (Shafi, Liu, & Ren, 2020). This highlights the urgency for Malaysian SMEs to adopt innovative and sustainable strategies to ensure resilience and long-term survival.

3.2 Green Intellectual Capital (GIC)

Green Intellectual Capital refers to the knowledge-based intangible resources that enable firms to improve environmental and social outcomes while achieving economic goals. It comprises three main dimensions: Green Human Capital, Green Structural Capital, and Green Relational Capital (Yusliza et al., 2020). Research shows that GIC enhances organizational learning and the capacity to implement eco-innovations (Asiaei et al., 2022). In the Malaysian context, developing GIC is particularly important given the country's push toward sustainability and low-carbon growth. However, empirical studies on how SMEs in Malaysia leverage GIC remain limited (Ali et al., 2021).

3.3 Green Innovation (GI)

Green Innovation encompasses product and process innovations aimed at reducing environmental impacts while improving business performance. Product innovation includes eco-friendly materials and energy-efficient goods, while process innovation involves adopting cleaner production methods, recycling, and energy-saving technologies. Prior studies suggest that GI contributes to both cost efficiency and market differentiation, enabling firms to gain competitive advantages (Asadi et al., 2020; Zhang & Ma, 2021). In Malaysia, the adoption of GI has been uneven, with larger corporations leading, while SMEs lag behind due to resource constraints and lack of technical expertise. Nevertheless, initiatives such as GTFS provide opportunities for SMEs to invest in GI (SME Corp, 2023).

3.4 Sustainable Performance

Sustainable performance integrates three dimensions: economic performance, environmental performance, and social performance. For SMEs, achieving sustainable performance requires balancing financial goals with broader sustainability objectives (Shrivastava, 1995). In Malaysia, sustainable performance aligns with national commitments to the SDGs, the Shared Prosperity Vision 2030, and the Twelfth Malaysia Plan (Government of Malaysia, 2021). Firms investing in green strategies are better positioned to achieve sustainable outcomes and long-term resilience (Crossley, Elmagrhi, & Ntim, 2021).

3.5 Research Gap

While existing literature acknowledges the importance of GIC and GI in driving sustainability, there is insufficient empirical evidence from the Malaysian SME sector. Most studies have focused on large corporations or contexts outside Malaysia (Khan, Hussain, & Sampene, 2023). This creates a gap in understanding how Malaysian SMEs, with their unique constraints and opportunities, can integrate GIC and GI to enhance sustainable performance. This study therefore contributes to filling this gap by providing localized insights and evidence.

4. Research Questions

1. To what extent is Green Intellectual Capital related to the sustainable performance of SMEs in Malaysia?

2. To what extent is Green Innovation related to the sustainable performance of SMEs in Malaysia?

5. Research Objectives

The objectives are twofold.

First, to examine the significant relationship between Green Intellectual Capital (GIC) and the sustainable performance of Malaysian SMEs.

Second, to examine the significant relationship between Green Innovation (GI) and the sustainable performance of Malaysian SMEs.

6. Scope of the Study

This study focuses on manufacturing SMEs in Malaysia, which are key contributors to industrial development and exports. The research adopts a quantitative approach, using structured questionnaires targeted at SME owners and senior executives. Respondents provided insights into their firms' adoption of GIC and GI practices. Data collection was relied on a Likert-scale survey instrument covering variables of GIC, GI, and sustainability indicators. Analysis will include descriptive statistics, Pearson's correlation, Confirmatory Factor Analysis (CFA), and PLS-SEM (Hair et al., 2019). The study population consists of Malaysian manufacturing SMEs registered under SME Corp Malaysia. A sample size of 300–400 firms will be determined using Krejcie and Morgan's (1970) table to ensure statistical reliability. Structured questionnaires will be distributed via online platforms and SME associations. Data is analyzed using SPSS. Variables include independent constructs (GIC), mediating factors (GI), and dependent variables (sustainable performance).

7. Significance of the Study

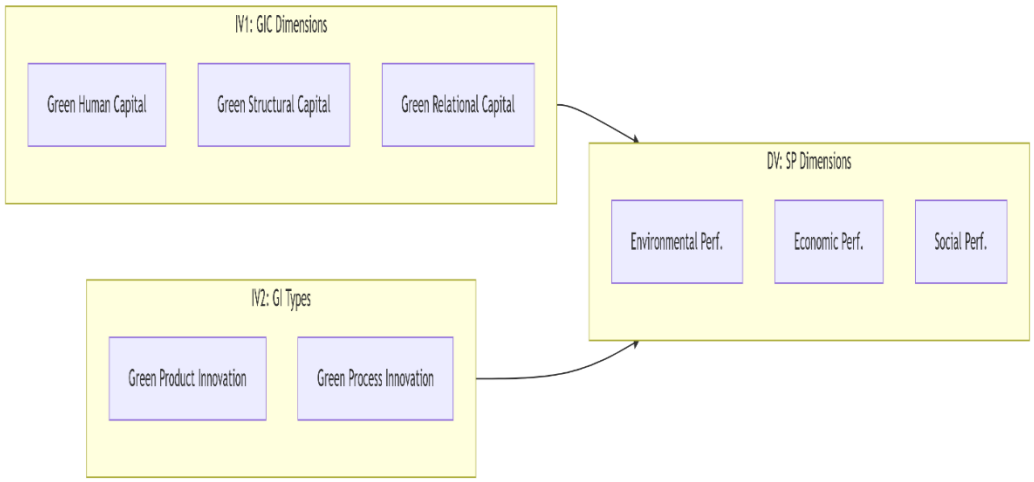
The significance of this study lies in both its theoretical and practical contributions. From a theoretical perspective, it contributes to sustainability literature by extending the application of Green Intellectual Capital theory and innovation management within an emerging economy context. By integrating GIC, GI, and sustainable performance into a single framework, the study offers a more holistic understanding of how intangible resources and innovation jointly affect sustainability outcomes (Wang & Sarkis, 2013).

From a practical standpoint, the findings will provide valuable insights for policymakers, industry practitioners, and SME managers. For policymakers, evidence from this study can guide SME Corp Malaysia and BNM in designing targeted programs and incentives to strengthen green competitiveness. For practitioners, the study highlights how SMEs can leverage GIC and GI to improve economic, environmental, and social performance, thereby achieving long-term competitiveness. For society at large, the research underscores the importance of SMEs in

contributing to Malaysia's environmental agenda and its target of carbon neutrality by 2050 (Government of Malaysia, 2021).

8. Research Framework

This study proposes a conceptual framework linking Green Intellectual Capital and Green Innovation to Sustainable Performance:



9. Research Framework

Proposed Hypothesis

H1: Green intellectual capital has significant relationship with Sustainable performance.

H2: Green innovation has significant relationship with Sustainable performance.

10. Research Methodology

10.1 Research Design

The study is quantitative, cross-sectional survey, which is based on the empirical study of the role of the Green Intellectual Capital (GIC) and Green Innovation (GI) on sustainable performance of Malaysian manufacturing SMEs. The quantitative method is suitable because it is possible to measure the latent constructs on the basis of validated scales, as well as test the hypothesized relationships with the help of statistical modeling (Creswell & Creswell, 2018). The design of the research is focusing on objectivity, replicability, and generalizability, which are aligned to the resource-based and sustainability theory perspectives and positivism epistemology.

10.2 Population and Sampling

The sample of the study includes manufacturing SMEs in Malaysia that are registered under SME Corp Malaysia. The emphasis on manufacturing is considered to be justified by its strategic impact on national export and environmental impact. SMEs will be determined based on the SME Corp

Malaysia criteria i.e. a firm that employs less than 200 full-time workers or has annual sales turnover that is less than RM 50 million.

A stratified random sampling was employed in a bid to guarantee that there is representation of the key manufacturing subsectors (e.g., electronics, food processing, automotive components, palm oil downstream). According to the table prepared by Krejcie and Morgan, (1970), a sample size of 300-400 firms is deemed sufficient to conduct a strong statistical analysis based on the Structural Equation Modeling (SEM). For the current study 325 respondents given the valid repose.

10.3 Data Collection Procedure

The data was collected with the help of the structured self-administered questionnaires that will be delivered online (via Google Forms and email) and via SME associations and chambers of commerce. The respondents are owners, general managers, or top managers who are familiar with the sustainability practices and innovation programs in their firm.

10.4 Measurement of Variables

The scales of measurement of all constructs will be based on the already existing scales that were adopted in other previous studies, with some slight alterations that will be done in line with the Malaysian context of SMEs. The items shall be rated using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Green Intellectual Capital (GIC)

GIC will be a higher-order construct comprising of three dimensions:

Green Human Capital (GHC): knowledge, skills, and attitudes of employees towards the environment (Yusliza et al., 2020).

Green Structural Capital (GSC): organizational routines, systems, and culture, which promote environmental practices (Asiaei et al., 2022).

Green Relational Capital (GRC): relations with stakeholders contributing to environmental-friendly activities (Ali et al., 2021).

Green Innovation (GI)

GI is divided into green product innovation and green process innovation, which reflect the level at which the company considers the environment in their product and process (Asadi et al., 2020; Zhang and Jiang, 2025).

Sustainable Performance (SP)

Sustainable performance will be operationalized under three dimensions, that is, economic, environmental, and social performance that were adopted by Wang and Juo (2021).

11. Results and Analysis

11.1 Demographic Profile

The descriptive statistics were used in SPSS to analyze the demographic characteristics of the 325 valid respondents. The majority of the respondents were men (61.2) as seen in Table 4.1 with 38.8 percent of the respondents being women. Regarding the age structure, most respondents (42.5) were between 36-45 years old, 33.2% between 26-35 years old, 18.5% between 46-55 years old, and 5.8% above 55 years old. On the issue of organizational position, 42.2% owners/managing directors, 36.0% general managers and 21.8% senior managers, or departmental heads. With regards to the size of the firm, 58.5% of the SMEs had less than 100 full-time workers, and 41.5% had 100200 workers. Regarding the period of operation, 34.8% of the firms had operated a 6-10 years, 29.2% 11-15 years, 22.5 greater than 15 years and 13.5 years less than 5 years.

Table 4.1: Demographic Profile of Respondents (n = 325)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	199	61.2
	Female	126	38.8
Age	26–35 years	108	33.2
	36–45 years	138	42.5
	46–55 years	60	18.5
	Above 55 years	19	5.8
Position	Owner/Director	137	42.2
	General Manager	117	36.0
	Department Head	71	21.8
Number of Employees	<100	190	58.5
	100–200	135	41.5
Years in Operation	<5 years	44	13.5
	6–10 years	113	34.8
	11–15 years	95	29.2
	>15 years	73	22.5

11.2 Correlation Analysis

The correlation of Pearson was done to analyze the relationships between the key variables. Table 4.2 results show that the independent variables were positively and significantly related to sustainable performance ($p < 0.01$). In particular, Green Intellectual Capital (GIC) had a significant positive correlation with Sustainable Performance ($r = 0.712$, $p < 0.01$) whereas Green Innovation (GI) had moderate positive correlation with Sustainable Performance ($r = 0.658$, $p < 0.01$). The coefficients of correlation were less than 0.85 which meant that there were no issues of multicollinearity.

Table 4.2: Correlation Matrix

Variables	1	2	3
1. Green Intellectual Capital (GIC)	1		
2. Green Innovation (GI)	0.624**	1	
3. Sustainable Performance (SP)	0.712**	0.658**	1

11.3 Multiple Regression Analysis

The multistage analysis involves a multiple regression analysis. A multiple regression test was conducted to estimate the liberated hypothesized relationships between Green Intellectual Capital (GIC), Green Innovation (GI) and Sustainable Performance (SP).

The regression model was also found to be significant with $R = 0.789$, $R\ 2 = 0.623$ and Adjusted $R\ 2 = 0.620$ which implies that 62.3% of the variance in Sustainable Performance was explained by the combination of GIC and GI.

The total model was significant statistically, $F(2, 322) = 266.07$, $p < 0.001$, which indicates that there is a good fit to the model.

Table 4.3: Multiple Regression Results

Independent Variables	Unstandardized β	Std. Error	Standardized β	t-value	Sig. (p)
Constant	0.742	0.178	—	4.17	0.000
Green Intellectual Capital (GIC)	0.489	0.056	0.534	8.73	0.000
Green Innovation (GI)	0.362	0.059	0.397	6.12	0.000

12. Results and Discussion

The findings indicate that there is a significant positive correlation between Green Intellectual Capital (GIC) and Sustainable Performance (SP) that is statistically significant ($b = 0.534$, $p < 0.001$). This means that the SMEs which have better environmentally oriented human, structural and relational capital are in a better position to produce better sustainability results.

This observation is in line with the Resource-Based View (RBV) that asserts that competitive advantage is based on valuable, rare, inimitable and non-substitutable (VRIN) resources by firms. The idea of green intellectual capital is such a strategic asset in the sense that it helps increase the level of environmental knowledge of the employees (Green Human Capital), institutionalizes environment-friendly processes and structures (Green Structural Capital) and the relations with the stakeholders who attach importance to sustainability (Green Relational Capital).

Empirically, this outcome correlates with Yusliza et al. (2020) and Asiaei et al. (2022), who proved that green intellectual capital boosts financial and non-financial sustainability performance in the Malaysian organizations. It implies that, when the SMEs are more knowledge-based and have better organizational learning capacities, they are able to more readily incorporate the principles of sustainability within their operational and strategic frameworks.

It has also been shown that the effect of Green Innovation (GI) on Sustainable Performance (SP) is very significant and positive ($b = 0.397$, $p < 0.001$). This result suggests that the companies that engage in green product and process innovation are likely to be more successful in economic, social, and environmental aspects.

This conforms to Sustainability Theory that pushes on the combination of innovation with environmental and social objectives as a route to long-term sustainability. Green innovation helps the company to improve the efficiency of the processes, minimize the waste, and improve the corporate image- therein sustainable growth is supported.

This outcome is consistent with the results of Asadi et al. (2020) and Zhang and Jiang (2025) who noted that green innovation leads to competitiveness and eco-efficiency in the Asian manufacturing industries. In the Malaysian context, it means that the SMEs that exploit environmental innovation are in a better position to meet the policies of the government on sustainability as well as the globalization on supply chain green requirements.

References

Ali, W., Wen, J., Hussain, H., Khan, N. A., Younas, M. W., & Jamil, I. (2021). Does green intellectual capital matter for green innovation adoption? Evidence from manufacturing SMEs. Journal of Intellectual Capital, 22(5), 868-888.

Ali, W., Wen, J., Hussain, H., Khan, N. A., Younas, M. W., & Jamil, I. (2021). Does green intellectual capital matter for green innovation adoption? Evidence from manufacturing SMEs. *Journal of Intellectual Capital, 22*(5), 868–888.

Asadi, S., Pourhashemi, S. O., Nilashi, M., Abdullah, R., Samad, S., & Razali, N. S. (2020). Influence of green innovation on sustainability performance: Malaysian hotel industry. Journal of Cleaner Production, 258, 120860.

Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting. Business Strategy and the Environment, 31(1), 76-93.

Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting. *Business Strategy and the Environment, 31*(1), 76–93

Bank Negara Malaysia (2020). Annual Report 2020. BNM.

Crossley, R. M., Elmagrhi, M. H., & Ntim, C. G. (2021). Sustainability and legitimacy theory in SMEs. Business Strategy and the Environment, 30(8), 3740-3762.

Government of Malaysia (2021). Twelfth Malaysia Plan (2021–2025). Economic Planning Unit.

Khan, P. A., & Johl, S. K. (2019). Nexus of comprehensive green innovation and firm performance. Cogent Business & Management, 6(1), 1691833.

Mohanamerry A/P Vedamanikam , Saralah Devi A/P Mariamdaran, (2020). Money Mule Recruitment Among University Students in Malaysia: Awareness Perspective. International Journal of Teaching, Education and Learning, 4(1), 19 - 37.

Saralah Devi A/P Mariamdaran, Rathiga A/P K Rukumangadan, (2020). The Significant of Mindfulness Module to Reduce Aggression Among Prison Female Inmates. People: International Journal of Social Sciences, 6(1), 570 - 584.

Saralah Devi A/P Mariamdaran, (2016). Impact Of Information and Communication Overload Syndrome (I& Cos) On Performance of Academicians of Universiti Utara Malaysia . Journal Of Advanced Research in Social and Behavioural Sciences, 5(1), 74 - 82.

Saralah Devi A/P Mariamdaran, (2016). Aggression And Ability Changes Among Male and Female Inmates: A Case of Inmates in Northern Malaysia. Jurnal Persatuan Kaunselor Pendidikan Malaysia, 1(1), 65 - 69.

Saralah Devi A/P Mariamdaran, Muzaffar Asad, Mohammad Rahim Ud Kamaluddin, Ahsan Ali, Mohammed Ali Bait Ali Sulaiman, (2019). Impact of Information and Communication Overload Syndrome on the Performance of Students: Controlling Effect of Gender Differences. Opcion, 35(SI 24), 390 - 405.

Shafi, M., Liu, J., & Ren, W. (2020). Impact of COVID-19 on SMEs. Research in Globalization, 2, 100018.

SME Corp Malaysia (2023). SME Annual Report 2022/23: Supporting SMEs for Sustainability.

Venothiney Dewi A/P Muniandy , Saralah Devi A/P Mariamdaran, Mohamed Aboobucker Mohamed Sameem, (2021). Level Of Cybercrime Awareness Among Diploma Students During the Pandemic of Covid-19. Kalam – International Journal, 14(3), 53 - 60.

Virishna A/L Muthu Krishnan , Saralah Devi A/P Mariamdaran, (2020). The Effectiveness of Module Digital Youth (Dy) As Youth Empowerment Through Crime Awareness: A Case Study of South Malaysia. People: International Journal of Social Sciences, 6(3), 150 - 170.

Wang, C. H., & Juo, W. J. (2021). An environmental policy of green intellectual capital: Green innovation strategy for performance sustainability. *Business strategy and the environment*, *30*(7), 3241-3254.

Wang, C. H., & Juo, W. J. (2021). Green innovation strategy for performance sustainability. Business Strategy and the Environment, 30(7), 3241-3254.

Wang, Y., & Sarkis, J. (2013). Facilitating firm innovativeness through collaboration. International Journal of Production Economics, 146(1), 72-80.

Wu, Y. C., Lin, B. W., & Chen, C. J. (2013). How openness affects innovation and performance. IEEE Transactions on Engineering Management, 60(4), 704-716.

Yusliza, M. Y., Yong, J. Y., Ramayah, T., & Faezah, J. N. (2020). Green intellectual capital and sustainable performance. Journal of Cleaner Production, 249, 119334.

Yusliza, M. Y., Yong, J. Y., Ramayah, T., & Faezah, J. N. (2020). Green intellectual capital and sustainable performance. *Journal of Cleaner Production, 249*, 119334.

Zhang, Q., & Jiang, J. (2025). The role of green innovation appropriability and firm performance: Evidence from the Chinese manufacturing industry. *Sustainability*, *17*(2), 517.

Ahmad, N. R. (2025). *Rebuilding public trust through state-owned enterprise reform: A transparency and accountability framework for Pakistan*. **International Journal of Business and Economic Affairs**, 10(3), 45–62. https://doi.org/10.24088/IJBEA-2025-103004