Sustainable Performance: Evidence of SMEs in Indonesia

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ABSTRACT

Manuscript type: Research paper

Research aims: This study aims to analyse the influence of green accounting and intellectual capital on sustainable performance, with financial performance as an intervening variable.

Design/Methodology/Approach: This research used 251 samples of Batik SMEs located in 4 cities/regencies in Central Java, Indonesia they are Semarang City, Semarang Regency, Solo City and Pekalongan Regency, which were analysed using SmartPLS.

Research findings: The research results show that green accounting has a negative effect on financial performance and sustainable performance, while intellectual capital has a positive impact on financial performance and sustainable performance. Financial performance has a positive effect on sustainable performance.

Theoretical contribution/Originality: This study contributes to achieving sustainable performance for organisations by improving processes, conveying information, and stimulating relationships between stakeholders that positively impact environmental and social performance.

Practitioner/Policy implications: This research implies that the presence of intellectual capital in SMEs improves financial performance and realises sustainable performance by considering efforts to protect the environment, reduce carbon footprints, and invest in environmentally responsible businesses.

Research limitation/Implication: This research is still limited to SMEs in 4 cities/regencies in Central Java, Indonesia, namely Semarang City, Semarang Regency, Solo City and Pekalongan Regency.

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1. Introduction

Sustainable performance (SP) is an indicator of a company's success in facing its competition. SP is generally related to the size of the business. Small and Medium Enterprises (SMEs) are still an interesting issue to discuss. The strategic role of SMEs can be seen in national economic development, namely increasing economic growth and employment as well as distributing development results. The Ministry of Cooperatives and Small and Medium Enterprises reported that the total number of SMEs in Indonesia was 8.71 million business units in 2022, with a contribution to Gross Domestic Product (GDP) of 60.51% or IDR 9,580 trillion, with the ability to absorb 96.9% of the total workforce. However, the development of SMEs in Indonesia still needs to improve, including the low level of awareness of SMEs towards the environment. These improvements will help Indonesians SMEs to optimise their potential and then be able to compete with SMEs from other countries.

A study conducted by Dowling & Preffer (1975) confirmed that organisations continue to seek legitimacy by aligning social values and norms with industry values and maintaining the harmony of these two values. As long as industry values or norms align with social values, the industry will gain legitimacy and support from stakeholders (Ashforth & Gibb, 1990). Dowling & Preffer (1975); O'Donovan (2002), one of the media is green accounting (GA) to improve company performance (Clarkson et al., 2011) and investor confidence in making sustainable investments (Ganda et al., 2015), which is low carbon and climate resilient.

In the current green economy era, SMEs can improve their financial performance (FP) by implementing GA to maintain environmental sustainability in waste management. This aims to ensure that GA can control the responsibilities of SMEs in the environment where the business operates.

The unexpected negative impact seen on GA can be attributed to traditional economic indicators such as GDP and Netto National Product (NNP) not considering negative externalities such as pollution and environmental damage. GA aims to remedy this by including non-market goods, services, and investments and adjustments for negative externalities in the economic balance

sheet. This happens because when certain externalities, such as CO_2 emissions, decrease, their impact on green output becomes relatively greater, resulting in a lower estimated output level but a higher growth rate. Despite these unexpected negative impacts, GA is important to provide a more accurate representation of economic growth and enable policymakers to analyse the true impact of economic activities on the environment. However, this activity requires very high costs if the industry is in financial uncertainty (Doran & Ryan, 2012). Several studies also examined several factors that influence FP, including the findings of Chariri et al., (2018; 2019); Kumarasiri & Jubb (2016); Khojastehpour & Johns, (2014); Mangla, (2014); Murovec et al., (2012); Uadiale & Fagbemi (2012); Wahba & Elsayed (2015); Manrique, (2017); Surroca et al., (2010); Turcsanyi & Sisaye (2013); Zhu (2017) and influences SP (Winner, 2016). However, the body of existing research still leaves a lot of room for improvement, especially in effectively achieving sustainable rates of financial performance, thus motivating researchers to develop a model for improving FP based on GA towards SP of SMEs in Central Java.

The existence of intellectual capital (IC) can also support SP. IC is an intangible asset in the form of information resources, innovation and knowledge (Buallay & Hamdan, 2019). It increases competitive ability while protecting the environment, which can increase SP. Meanwhile, science and technology are created, which ultimately become intangible assets owned by SMEs. This knowledge is IC, which can take the form of experience, textual information and opinions of experts in their field, so that SMEs will be sustainable if they use this information or experience.

In order to create SME competencies, IC is explained through three indicators, including human capital (HC), structural capital (SC) and relational capital (RC). Having HC that understands business, organisational structure and commitment that supports the implementation of SP, as well as good relationships with stakeholders, will encourage the creation of environmentally friendly products or services, which are currently in demand by consumers. It will certainly increase sales so that, from a business perspective, it improves FP, but from an environmental and social perspective, it will not be harmed. It is supported by research from Chowdhury et al., (2018), which states that IC has a positive effect on FP. This view is proven in several studies, such as research on IC, which is proven to influence SP in research (Yusliza et al., 2019). Mixed results were also found in research by Yusoff et al., (2019) that SC and RC have a positive effect on performance. However, HC does not influence SP.

Many studies link GA and IC to FP and SP. Unfortunately, most previous research only focuses partially on this. Therefore, this research examines GA and IC on SP mediated by FP. The novelty of this research is that the research model looks at GA and IC to improve the SP of SMEs in Indonesia through FP as a mediating variable.

2. Theoretical Literature

2.1 Stakeholder Theory

Stakeholder theory explains the relationship between company management and stakeholders. The demands of stakeholders reflect increasing global concern regarding weather conditions, natural disasters and greenhouse gas emissions. Companies must adopt effective environmental performance initiatives to reduce environmental damage. Stakeholders play a major role in influencing corporate environmental performance, including (1) green accounting through carbon taxes regulated by law; (2) green consumers, consumers who choose and use environmentally friendly products regardless of price; (3) environmentally friendly employees, employees who prefer to work in companies with low carbon performance; and (4) green investors, inventors who prioritise green portfolios (Freeman, 1984).

2.2 Green Accounting (GA)

GA, also called environmental accounting, is an accounting concept that links or includes environmental costs or budgets in company activities. GA identifies, measures, presents and discloses indirect costs and benefits from company activities related to the environment and society. GA aims to increase the efficiency of environmental management by assessing environmental activities from the perspective of costs (environmental costs) and benefits or effects (economic benefits). Various companies apply GA to produce quantitative assessments of the costs and impacts of environmental protection (Cohen, 2011).

2.3 Financial Performance (FP)

FP is an achievement achieved by a company in a certain period, which can reflect the company's health level (Manrique, 2017). FP results from a company's achievements regarding financial conditions as seen from financial reports in a certain period (Akisik & Gal, 2017).

In other words, financial condition represents what the company's FP is like. It can be measured using ROA, which helps to assess a company's FP. The company's FP can be seen from the analysis of the company's financial reports. Such as balance sheets, profit and loss reports, changes in equity reports, and cash flow reports. From the results of this analysis, the company can make decisions to determine policies and plan good strategies for the company in the future so that it can maintain what has been obtained.

2.4   Intellectual Capital (IC)

IC is the knowledge and abilities of a social collectivity, such as an intellectual community organisation or professional practice, and intellectual capital represents resources with high value and the ability to act based on knowledge (Chowdhury et al., (2018), IC disclosure is one of the voluntary disclosures that can be a positive signal for the company to information users. According to Buallay & Hamdan (2019), IC disclosure is one of the relevant aspects to reduce information asymmetry between issuers and various participants in the capital market. It is based on the knowledge and abilities possessed by an organisation, such as employee education and expertise, which can create added value for the company.

2.5   Sustainable Performance (SP)

Sustainability can be defined as current sustainable development efforts which do not ignore the needs of future generations by looking at the economic, social and environmental aspects. Sustainability plays an important role in the management context and has been linked to corporate social responsibility by assessing many dimensions such as political, social, cultural, economic and natural environment (Al Hammadi & Hussain, 2019). Yusliza et al., (2019) define SP in three categories, namely economic performance, environmental performance, and social performance. Economic performance is an organisation's ability to reduce costs associated with purchased materials, energy consumption, waste processing, waste disposal, and fines for environmental accidents. Environmental performance is an organisation's ability to reduce air emissions, energy consumption, hazardous materials, material use, and compliance with environmental standards. Social performance is an organisation's ability to improve social welfare, public health and safety, risks to the general public, occupational health and employee safety (Yusliza et al., 2019).

2.6   Hypotheses

2.6.1   Green Accounting (GA) and Financial Performance (FP)

According to stakeholder theory, established companies must establish good relationships with stakeholders. The stronger the bond between the company and its stakeholders, the better the company will be and vice versa. For investors, information plays an important role in making investment decisions, while the market utilises information to reach a new equilibrium price. Investors' confidence in the quality of SMEs will influence them to invest larger amounts of capital. The more capital provided, the greater the profitability.

Oware & Thathaiah (2019) stated that implementing GA has a positive relationship with company performance, where the company will try to achieve and maintain these performance results, namely by maximizing company performance. Apart from the company's economic, social, and environmental performance also receives attention from the public because problems related to the environment are increasingly becoming a global issue. Nyeadi et al., (2018) found a significant influence between environmental accounting disclosures and company FP regarding profitability. Similar results were also expressed by Indriastuti & Mutamimah (2023), Najihah et al., (2021), Indriastuti & Najihah (2020); Lestari et al., (2020); Andries & Stephan (2019); Chasbiandani et al., (2019); Gangi et al., (2019); Ho et al., (2019); Ling (2019); Agyemang & Ansong (2017); Chtourou & Triki (2017); Ezeagba et al., (2017); Kurnia & Tandiontong (2015) that GA activities can improve FP.

H1: GA has a positive effect on FP

2.6.2   Intellectual Capital (IC) and Financial Performance (FP)

Stakeholder theory explains the relationship between company management and its stakeholders. Company management is expected to be responsible and able to adjust the company's performance under stakeholders' expectations. By utilising all the company's potential, both employees (human capital), physical assets (physical capital), and structural capital, SMEs can create added value for the company. By increasing the added value, the FP of subsidiary companies increases.

Nuryaman (2015) expressed that if a company can manage intellectual resources (HC, SC, RC) efficiently, then this will impact increasing company performance. Similar results were obtained by research by Chowdhury et al., (2018), which proved the influence of

IC on FP in public companies in Bangladesh. Apart from that, García Castro et al., (2021) also researched Colombian companies, which demonstrated that IC has a positive effect on ROA, Market value and Tobin's Q. Several other studies also show the same results that IC is a determining factor in company's FP (Xu et al., 2022; Vetchagool 2022; Acuña-Opazo & González, 2021; Xu & Zhang, 2021; Xu & Wang, 2018). In line with the results of Liu et al., (2022), IC can improve the FP of SMEs. Rana & Hossain (2023) added that Intellectual Capital Efficiency (ICE), Human Capital Efficiency (HCE), and Tangible Capital Employed Efficiency (TCEE) can improve the company's FP.

H2: IC has a positive effect on FP

2.6.3 Green Accounting (GA) and Sustainable Performance (SP)

Stakeholder theory not only focuses on increasing company profits but also focuses on increasing stakeholder welfare. Therefore, stakeholders and companies have a relationship that influences each other. Currently, corporate responsibilities are increasingly expanding, not only limited to responsibilities to investors or creditors but also to the social environment. One form of corporate responsibility is the implementation of GA. Implementing GA for a company certainly takes the company in a better direction.

Furthermore, by implementing GA, the company has indirectly carried out its responsibilities to stakeholders and brought sustainability, especially to SMEs. GA focuses on the accounting treatment and reporting of information on the sacrifice of a company's economic assets for the costs of social and environmental responsibility. Sacrificing some company economic assets for social and environmental interests is to provide added value to society and the environment. Good environmental performance will produce ecoefficiency, which supports the SP of SMEs. It means that GA has a positive influence on SP (Lenssen et al., 2014; Devie et al., 2018; Indriastuti & Mutamimah, 2023). Rahman & Islam (2023) added that GA can improve environmental performance. Accordingly, the company is concerned and involved in environmental management, impacting SP.

H3: GA has a positive effect on SP

2.6.4. Intellectual Capital (IC) and Sustainable Performance (SP)

Stakeholder theory explains the relationship between company management and its stakeholders. If the company's performance

is considered good, then stakeholder trust increases. Good and maximum management of the company's potential can create added value that encourages SP to keep increasing. Al-Musali & Ismail (2014) explained that Value Added Human Capital (VAHU) is an indicator of the quality of human resources in a company by measuring the company's ability to produce added value from every unit of rupiah spent on HC.

HC, as one of the components of IC, is a factor that is considered the most significant for a company's innovation and competitiveness. When producing optimal intellectual performance and overall company business performance, the ability to fulfill routine business processes and structures carried out by employees is required, referred to as SC. Structural Capital Value Added (SCVA) is used as an indicator in measuring the amount of SC needed to produce one rupiah in Value Added (VA) in value creation (Sardo et al., 2018). SMEs that can create competitive advantages can improve the relationship between IC and SME performance. Xu & Wang (2018) found that IC can increase sustainable growth. Rana & Hossain (2023) added that ICE and HCE can increase sustainable growth.

H4: IC has a positive effect on SP

2.6.5 *Financial Performance (FP) and Sustainable Performance (SP)*

The company's survival also depends on stakeholder support, so the more powerful the stakeholders, the greater the company's efforts to adapt Manrique (2017); Turcsanyi & Sisaye (2013); Galant & Cadez (2017). When a company has high FP, the company will face urgent demands from financial and non-financial stakeholders. Therefore, companies must have good financial capabilities to invest in programs for social, environmental and economic progress (Manrique, 2017). SP is performance produced by balancing three aspects in the form of people-planet-profit, which is known as the Triple Bottom Line concept. Therefore, company managers need to make decisions about making investments. Saxena & Khandelwal (2012); Winner (2016) show that a company's FP has a positive effect on SP.

H5: FP has a positive effect on SP.

Figure 1: Research Model
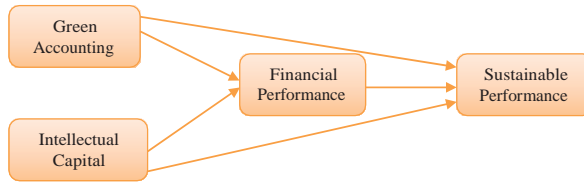
3. Research Methods

All SMEs in 4 cities/regencies in Central Java, Indonesia, namely Semarang City, Semarang Regency, Solo City, and Pekalongan Regency, are the population in this research 1,592,318 (https://dataindonesia.id/). The reason for choosing SMEs is that they are the most dynamic sector of the economy, and they have the potential for higher growth, international expansion, and greater market penetration. Sample determination was carried out using the Slovin method with an error tolerance of 6% (Slovin, 1960).

$$n = \frac{N}{1 + N(e)^2}$$

Information:
n = sample size
N = population
e = error level 6%

thus:
n = (1.592.318)/(1+1.592.318 (6%)^2)
n = 277,72
n = 278 (rounding)

The data collection method uses a questionnaire distributed via Google Forms to 500 SMEs in 4 cities/regencies in Central Java. The data returned was 251 questionnaires, so this study had a 50.2% response rate. This research consists of 4 variables. The independent variables of this research are GA and IC, where GA emphasises the construct of savings, namely material and energy. It is measured through waste recycling activities and environmental costs (Gray, 2010). IC emphasises the knowledge and abilities possessed by a social collectivity (Buallay & Hamdan, 2019). FP is a mediating variable, namely the achievements or accomplishments shown by the company within a certain period (Arthur et al., 2013). FP indicators include profits, sales growth, and business capital adequacy (Arthur

et al., 2013). In addition, this research uses SP as the dependent variable, namely performance, which is measured using economic, environmental, and social dimensions (GRI, 2016; 2018). All indicators are measured using a Likert scale and processed using the SmartPLS application.

4. Results and Discussion

4.1 Statistics Test Results

The results of descriptive statistics in this research can be seen in table 1 below:

Table 1: Research Variables Description

Variable	N	Min	Max	Mean	Median	Standard Deviation
GA	251	10,000	30,000	25,382	26,000	3,567
IC	251	7,000	25,000	19,211	20,000	3,864
FP	251	10.000	30,000	25,498	25,000	3,365
SP	251	11,000	25,000	20,888	21,000	3,019

Source: Processed secondary data (2023)

GA has a mean value of 25.382. It indicates that some research samples were stated to have implemented GA well. IC has an average value of 25,000 and is greater than the median value. SMEs have human resources with IC that are quite competent and can utilise this IC well towards SP. Meanwhile, the FP variable has a mean value of 25,498 and a maximum value of 30,000. The FP used as a sample for this research is said to be optimal. SP has an average value of 20,888 and a median value of 21,000, so the SP of SMEs in Central Java is quite good.

4.2 Outer Model Analysis

Outer model analysis or measurement model is used to analyse the validity and reality of research. Latent variables will be described in the measurement model, along with the indicators used in each latent variable.

4.2.1 Internal Consistency Reliability

Internal consistency reliability in research is explained by the results of composite reliability and Cronbach's alpha. Variables in research are determined to be optimal if they have composite reliability

and Cronbach's alpha results exceed 0.70. The results of composite reliability and Cronbach's alpha are displayed in the latent variable coefficients results

Table 2: Composite Reliability and Cronbach's Alpha

	Composite reliability	Cronbach's Alpha
GA	1,000	1,000
IC	1,000	1,000
FP	1,000	1,000
SP	1,000	1,000

Source: Processed secondary data (2023)

Based on the results of the composite reliability and Cronbach's alpha values of more than 0.70, namely 1.000. It means that each latent construct has good reliability because it meets the requirements of the composite reliability and Cronbach's alpha tests.

4.2.2 Convergent Validity

The level to which indicators correlate with alternative indicators on the same construct in research is explained by convergent validity (Sholihin & Ratmono, 2020). Convergent validity can be analysed from the outer loading of each indicator and the average variance extracted (AVE) value. Each indicator in the outer loading produces a correlation of more than 0.70, so it is feasible.

Table 3: Convergent Validity

	GA	IC	FP	SP
Outer Loading	1,000	1,000	1,000	1,000
AVE	1,000	1,000	1,000	1,000

Source: Processed secondary data (2023)

Output results convergent validity visited from outer loading and average variance extracted shows that the AVE value is good for each construct because it has a value greater than 0.50 or 1,000. Thus, it is said to meet the requirements and is feasible.

4.2.3 Discriminant Validity

Discriminant validity explains the construct level that differs from other constructs in the research results (Sholihin & Ratmono, 2020).

Discriminant validity can be analysed through the results of cross-loadings on each indicator in the construct.

Table 4: Discriminant Validity

	GA	IC	FP	SP
GA	1,000	-0,915	-0,961	-0,972
IC	-0,915	1,000	0,941	0,945
FP	-0,961	0,941	1,000	0,969
SP	-0,972	0,945	0,969	1,000

Source: Processed secondary data (2023)

Based on the table above shows that each construct and its indicators have a higher cross-loading value than the other constructs. It demonstrates the latent construct can be predicted better by each indicator than through indicators from other constructs.

4.3 Structural Model Test Results (Inner Model)

4.3.1 Coefficient of Determination (R2)

The independent variable can convey almost all the information needed to explain the dependent variable if the R^2 result is close to one. The more optimal the capability of the independent variable is to explain the research dependent variable, the closer it is to a value of one. The results of R^2 are shown in the latent variable coefficients results.

Table 5: R-Square (R^2)

	R-Square	R Square Adjusted
FP	0,947	0,946
SP	0,968	0,947

Source: Processed secondary data (2023)

Based on the table above, it can be seen that the R-Square value for the FP variable is 0.947 or 94.7%. These results explain that the FP variable can be explained by the GA and IC variables amounting to 94.7%; other variables explain the remaining 5.3%.

The R-Square value for the SP variable is 0.968 or 96.8%. These results explain that the variable SP can be explained by GA, IC, and FP by 96.8%; other variables explain the remaining 3.2%.

4.3.2 Hypothesis Test Results

Testing the relationship between the hypothesised research variables through the results of the path coefficient and P values shown in hypothesis testing. A significance value of 0.05 ($\alpha = 5\%$) was used in the research. The relationship between the independent variable and the dependent variable is determined to be significant if the result is less than 0.05 (*P* value < 0.05). Meanwhile, if the P-value results are more than 0.05, it indicates that the relationship between the independent variables and the research dependent variable is not significant.

Table 6 Hypothesis Test Results

	Original Sample (O)	Sample Mean (M)	Std Dev (STDEV)	T Statistics (|O/ STDEV|)	P Values	Decision
GA → FP	-0,609	-0,609	0,044	13,798	0,000	H1 rejected
IC → FP	0,384	0,384	0,0046	8,425	0,000	H2 accepted
GA → SP	-0,492	-0,492	0,049	9,982	0,000	H3 rejected
IC → SP	0,245	0,245	0,024	10,179	0,000	H4 accepted
FP → SP	0,267	0,266	0,051	5,215	0,000	H5 accepted

Source: Processed secondary data (2023)

Based on the results of measuring the path coefficient above, the effect of GA on FP has an original sample negative direction of -0.609 and a p-value of 0.000 (p-value < 0.05), so H1 states that GA has a positive effect on FP is rejected. The influence of IC on FP has a positive original sample direction with a p-value of 0.000; thus, H2, which states that IC has a significant positive effect on FP, is accepted. The effect of GA on SP obtained the original sample value in the negative direction, namely -0.492, and the p-value was 0.000; hence H3, which states that GA has a positive effect on SP, is rejected. The influence of IC on SP has a positive direction of 0.245 in the original sample and a p-value of 0.000. It means that H4, which states that IC has a significant positive effect on SP, is accepted. FP in SP has a positive original sample direction, namely 0.267, with a p-value of 0.000. It can be concluded that H5, which states that FP has a positive effect on SP.

4.4 Green Accounting and Financial Performance

GA has a significant negative influence on FP. It means that the H1 is rejected. The implementation of GA has not been a positive signal. It has not been accepted by consumers and investors even though stakeholders have played a role in all company business processes under stakeholder theory. This research is in line with research by Mariana (2017), where GA does not have a significant effect on a company's FP. On the other hand, contrary to the findings of Indriastuti & Mutamimah (2023), Najihah et al., (2021), Indriastuti & Najihah (2020); Lestari et al., (2020); Andries & Stephan (2019); Chasbiandani et al., (2019); Gangi et al., (2019); Ho et al., (2019); Ling (2019); Nyeadi et al., (2018); Agyemang & Ansong (2017); Chtourou & Triki (2017); Ezeagba et al., (2017); Kurnia & Tandiontong (2015) that GA activities can improve FP. It is due to the imposition of environmental costs on Batik SMEs in 4 cities/regencies, namely Semarang City, Semarang Regency, Solo City, and Pekalongan Regency. They will reduce capital so that SMEs prioritize increasing profits. Ultimately, consumers and investors need to see how FP is in implementing GA.

4.5 Intellectual Capital and Financial Performance

IC has a significant positive influence on FP. It signifies the H2 is accepted. SMEs emphasize maintaining a competitive strategy by utilizing existing resources to create competitive advantages. Capital meets the criteria as a unique resource to maintain and create competitive advantages for companies to obtain added value (Nuryaman, 2015). The three components of IC, namely HC, SC, and RC, if managed effectively, will create maximum FP. Supported by the results of previous research conducted by Chowdhury et al., (2018), García Castro et al., (2021) stated that IC has a significant and positive influence on company performance. The higher the value of a company's IC, the greater the FP. It is in line with the findings of Xu et al., (2022); Vetchagool (2022); Acuña-Opazo & González (2021); Xu & Zhang (2021); Xu & Wang (2018). Liu et al., (2022) similarly found that IC can improve the FP of SMEs. Rana & Hossain (2023) added that ICE, HCE, and TCEE can improve the company's FP.

4.6 Green Accounting and Sustainable Performance

GA has a significant negative influence on SP. It indicates that the H3 is rejected. SMEs that charge components of environmental costs, waste recycling costs, and development costs in their business

processes are not a benchmark for consumers and investors. Charging costs for the environment will also reduce the company's capital because this burden must be financed by SMEs so that companies prioritize their production processes to increase profits. It is also still voluntary for companies to disclose costs related to GA. Charging environmental costs also does not provide confidence for consumers so that it does not affect the company's sales and profit levels. Therefore, GA has not yet become the main thing for companies in implementing SP. These results are not supported by research from Indriastuti & Mutamimah (2023), Rahman & Islam (2023), Jian et al., (2020), Su et al. (2020); Kim & Stepchenkova (2018); Devie et al., (2018); Lenssen et al., (2014) that GA can improve environmental performance.

4.7 *Intellectual Capital and Sustainable Performance*

IC has a significant positive influence on SP. It suggests that the H4 is accepted. SMEs that have higher IC will show higher market value; this implies that IC is an important resource in producing the competitive advantage needed by a company so that it can increase SP. Based on research by Yusliza et al., (2019), it shows a positive relationship between IC and SP. Further findings show that companies with large IC tend to have greater market value. This states that every SME that invests in IC will increase the company's market value. IC management allows companies to innovate and express signals to the market about their growth opportunities that will lead to the improvement of the company. This research is supported by Sardo et al., (2018); Al-Musali & Ismail (2014) found a significant relationship between IC and SP. If IC increases, it can increase company value. Supported by the findings of Xu & Wang (2018) that IC can increase sustainable growth. Rana & Hossain (2023) added that ICE and HCE can increase sustainable growth.

4.8 *Financial Performance and Sustainable Performance*

FP has a significant positive influence on SP. It implies that the H5 is accepted. With high FP, a business actor, especially SMEs who are the sample for this research, will optimize their business performance better and be more careful in their operations. When a business actor has good financial knowledge, it will be easier to manage their business. It is also supported by research by Manrique (2017), which states that if business actors in the SME sector have good financial capabilities, the resulting business decisions and financial

management will lead to development that improves over time. When a company has high FP, the company will face urgent demands from financial and non-financial stakeholders. Therefore, companies must have good financial capabilities to invest in programs for social, environmental, and economic progress. Research conducted by Turcsanyi & Sisaye (2013); Galant & Cadez (2017) show that a company's FP has a positive effect on SP. Saxena & Khandelwal (2012); Winner (2016) show that a company's FP has a positive effect on SP.

5 Conclusion

Based on the research results that have been described, GA has a significant negative influence on FP and SP. Meanwhile, IC has a significant positive effect on FP and SP. FP successfully mediates the influence of GA and IC on SP. This research is still limited to SMEs in 4 cities/regencies in Central Java, Indonesia, namely Semarang City, Semarang Regency, Solo City and Pekalongan Regency. Therefore, further research can expand the research object not only to Batik SMEs located in 4 cities/districts but also throughout Central Java, Indonesia. Apart from that, this research distributed questionnaires using online media, namely Google Forms, so that for further research the interview method was applied to produce accurate data. IC can contribute to achieving SP for organisations by improving processes, conveying information, and stimulating relationships between stakeholders that positively impact environmental and social performance. IC can also bring about cultural change in organisations and society towards a commitment to sustainability. The development of IC potential is related to long-term value and can be a source of competitive advantage for organisations.

The results of this research have implications for SMEs in 4 cities/districts in Central Java, Indonesia, as mentioned above. SMEs can focus on knowledge sharing, creativity, innovation, IT capabilities, and entrepreneurial orientation. Financial resources can also strengthen the relationship between IC and SMEs' efficiency. IC management needs to be done well through training, workshops, and seminars so that IC targets business at a higher level. SMEs can leverage their IC to improve sustainability efforts and gain a competitive advantage. For regulators, the results of this research can be used as a guide in formulating regulations related to environmental management so that SMEs in 4 cities/districts in Central Java, Indonesia, can care about and be involved in good environmental management. Regulators are important in improving

SP regarding GA and IC by establishing and enforcing environmental regulations that encourage organisations to adopt sustainable practices. For stakeholders, it can be used as a reference when making investment decisions in these SMEs.

Acknowledgment

References

Acuña-Opazo, C. & González, O.C. (2021). The impacts of intellectual capital on financial performance and value-added of the production evidence from Chile, *Journal of Economics, Finance and Administrative Science*, *26*(51), 127-142. https://doi.org/10.1108/JEFAS-08-2019-0178

Agyemang, O. S., & Ansong, A. (2017). Corporate social responsibility and firm performance of Ghanaian SMEs: Mediating role of access to capital and firm reputation. *Journal Global Responsibility*, *8*(1), 47–62. https://doi.org/10.1108/JGR-03-2016-0007

Akisik, O & Gal, G. (2017). The impact of Corporate Social Responsibility and Internal Controls on Stakeholders' View of the Firm and Financial Performance. *Sustainability Accounting, Management and Policy Journal*, *8*(3), 246–280.

Al-Musali, M. A. K., & Ismail, K. N. I. K. (2014). Intellectual Capital and its Effect on Financial Performance of Banks: Evidence from Saudi Arabia. *Procedia - Social and Behavioral Sciences*, *164*, 201–207. https://doi.org/10.1016/j.sbspro.2014.11.068

Al Hammadi, F. & Hussain, M. (2019). Sustainable organizational performance: A study of health-care organizations in the United Arab Emirates, *International Journal of Organizational Analysis*, *27*(1), 169-186. https://doi.org/10.1108/IJOA-10-2017-1263

Andries, P., & Stephan, U. (2019). Environmental innovation and firm performance: how firm size and motives matter. Sustainability (Switzerland), 11(13), 1–17. https://doi.org/10.3390/su11133585

Ashforth, B.E. & Gibbs, B. W. (1990). The Double-Edge of organizational legitimation. *Organization Science*, *1*(2), 177–194.

Arthur, S., Abanis, T., Eliab, B., and Sumil, N. (2013). Financial performance in the selected microfinance institutions in

Uganda. *International Journal of Engineering Research & Technology (IJERT)*, *2*(2), 1–11. https://www.ijert.org/research/financial-performance-in-the-selected-microfinance-institutions-in-uganda-IJERTV2IS2211.pdf

Buallay, A., & Hamdan, A. (2019). The relationship between corporate governance and intellectual capital: The moderating role of firm size. *International Journal of Law and Management*, *61*(2), 384–401. https://doi.org/10.1108/IJLMA-02-2018-0033

Chariri, A; Bukit, G. R; Eklesia, O. B; Christi, B. U; Tarigan, D. M. (2018). Does Green Investment Increase financial Performance Empirical Evidence from Indonesia Companies. E3S Web of Conferences. ICENIS, 1–7. https://doi.org/doi:doi.org/10.1051/e3sconf/20183109001

Chariri, A; Nasir, Mohammad; and Januarti, I. D. D. (2019). Determinants and consequences of environmental investment: an empirical study of Indonesian firms. *Journal of Asia Business Studies*, *13*(3), 433–449. https://doi.org/doi: 10.1108/JABS-05-2017-0061

Chasbiandani, T., Rizal, N., and Satria, I. (2019). Penerapan green accounting terhadap profitabitas perusahaan di Indonesia. *AFRE Accounting and Financial Review*, *2*(2), 126–132. http://jurnal.unmer.ac.id/index.php/afre

Chowdhury, L. A. M., Rana, T., Akter, M., & Hoque, M. (2018). Impact of intellectual capital on financial performance: evidence from the Bangladeshi textile sector. *Journal of Accounting and Organizational Change*, *14*(4), 429–454. https://doi.org/10.1108/JAOC-11-2017-0109

Chtourou, H. & Triki, M. (2017). Commitment in corporate social responsibility and financial performance: a study in the Tunisian context. *Social Responsibility Journal*, *13*(2), 370–389. https://doi.org/10.1108/SRJ-05-2016-0079

Clarkson, P.M; Li, Y; Richardson, G.D; and Vasvari, F. P. (2011). Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *Journal of Accounting and Public Policy*, *30*(2), 122–144.

Cohen, N & Robbins, P. (2011). Green Business: An A-to-Z Guide, Thousand Oaks. SAGE Publications.

Devie, D; Liman, L; Tarigan, J; Jie, F. (2018). Corporate social responsibility, financial performance and risk in Indonesian natural resources industry. *Social Responsibility Journal*. https://doi.org/10.1108/SRJ-06-2018-0155

Doran, J; & Ryan, G. (2012). Regulation and firm perception, eco-innovation and firm performance. *European Journal of Innovation Management*, *15*(4), 421–441.

Dowling, J & Preffer, J. (1975). Organizational Legitimacy, Social Values and Organizational Behavior. *Pacific Sociological Review*, *18*.

Ezeagba, C. E., Rachael, J.-A. C., and Chiamaka, U. (2017). Environmental Accounting disclosures and financial performance: a study of selected food and beverage companies in Nigeria (2006-2015). *International Journal of Academic Research in Business and Social Sciences*, *7*(9). https://doi.org/10.6007/IJARBSS/v7-i9/3315

Freeman, R. E. (1984). Strategic management: A stakeholder approach. In Strategic Management: A Stakeholder Approach. https://doi.org/10.1017/CBO9781139192675

Galant, A. & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: A review of measurement approaches. *Economic Research Ekonomska Istraživanja*, *30*(1), 676–693.

Ganda, Fortune; Ngwakwe, Collins C; and Ambe, C. M. (2015). Profitability as a Factor That Spurs Corporate Green Investment Practices in Johannesburg Stock Exchange (JSE) Listed Firms. *Managing Global Transitions*, *13*(3), 231–252.

Gangi, F., Mustilli, M., and Varrone, N. (2019). The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: evidence from the European banking industry. *Journal Knowledge Management*, *23*(1), 110–134. https://doi.org/10.1108/JKM-04-2018-0267

García Castro, J. P., Duque Ramírez, D. F., and Moscoso Escobar, J. (2021). The relationship between intellectual capital and financial performance in Colombian listed banking entities. *Asia Pacific Management Review*, *26*(4), 237–247. https://doi.org/10.1016/j.apmrv.2021.03.002

Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability, and how would we know? An exploration of narratives of organizations and the planet. *Accounting,*

Organizations and Society, *35*(1), 47–62. https://doi.org/10.1016/j.aos.2009.04.006

GRI: Global Reporting Initiative (2016). http://www.Globalreporting.org

GRI: Global Reporting Initiative (2018). http://www.Globalreporting.org

Ho, A. Y. -F., Liang, H. -Y, and Tumurbaatar, T. (2019) The impact of corporate social responsibility on financial performance: evidence from commercial banks in Mongolia. *Advances in Pacific Basin Business, Economics and Finance*, *7*, 109–153. https://doi.org/10.1108/S2514-465020190000007006

Indriastuti, Maya & Mutamimah. (2023). Green accounting and sustainable performance of micro, small, and medium enterprises: the role of financial performance as mediation. *Indonesian Journal of Accounting Research*, *26*(2), 249-272. DOI: 10.33312/ijar.687

Indriastuti, M., & Najihah, N. (2020). Enhancing financial performance through environment performance and corporate social responsibility. *Trikonomika*, *19*(2), 70–75. https://journal.unpas.ac.id/index.php/trikonomika/article/view/2221/1584

Jian, P., Chen, X., Zou, Y., nd Nie, Q. (2020). Environmentally Specific Transformational Leadership and Team Pro-environmental Behaviors: the Roles of Pro-environmental Goal Clarity, Pro-environmental Harmonious Passion, and Power Distance. *Human Relations*, *74*(11). https://doi.org/10.1177/0018726720942306.

Khojastehpour, M. & Johns, R. (2014). The effect of environmental CSR issues on corporate/brand reputation and corporate profitability. *European Business Review*, *26*(4), 330–339.

Kim, M. & Stepchenkova, S. (2018). Does environmental leadership affect market and eco performance? Evidence from Korean franchise firms, *Journal of Business & Industrial Marketing*, *33*(4), 417-428. https://doi.org/10.1108/JBIM-02-2017-0046.

Kumarasiri, J. & Jubb, C. (2016). Carbon emission risks and management accounting: australian evidence. *Accounting Research Journal*, *29*(2), 137–153.

Kurnia, T. & Tandiontong, M. (2015). The Effect of Corporate Social Responsibility (CSR) and Financial Ratio to Corporate Values Indonesian. *Journal of Accounting Research*, *18*(2), 227-252. https://ijar-iaikapd.or.id/index.php/ijar/article/view/382/51.

Lenssen, J. J., Dentchev, N. A., and Roger, L. (2014). Sustainability, Risk management and governance: towards an integrative approach. *Corporate Governance (Bingley)*, *14*(5), 670–684. https://doi.org/10.1108/CG-07-2014-0077

Lestari, R., Aisya Nadira, F., Nurleli, N., and Helliana, H. (2020). The effect of the application of green accounting on the level of profitability of the company. *Accounting Review*, *20*(2), 124–131. https://doi.org/10.29313/ka.v20i2.5990

Ling, Yantao. (2019). Influence of corporate social responsibility on organizational performance. *VINE Journal of Information and Knowledge Management Systems*, *49*(3), 327–352. https://doi.org/10.1108/VJIKMS-11-2018-0096

Liu, Lujing., Zhang, Jiyue., Xu, Jian., and Wang, Yiqun. (2022). Intellectual Capital and Financial Performance of Chinese Manufacturing SMEs: An Analysis from the Perspective of Different Industry Types. *Sustainability*.

Mangla, S. M. (2014). Multi Objective Decision Modelling Using interpretive Structural Modeling For Green Supply Chains. *International Journal of Logistics Systems*.

Manrique, S. C.-P. M.-B. (2017). nalyzing the Effect of Corporate Environmental Performance on Corporate Financial Performance in Developed and Developing Countries. *Sustainability*, *9*. https://doi.org/doi:10.3390/su9111957

Murovec, N; Erker, R.S; and Prodan, I. (2012). Determinants of Enviromental Investment : Testing The Structural Model. *Journal of Cleaner Production*, *17*, 265–277.

Najihah, N., Indriastuti, M., and Suhendi, C. (2021). The effect of corporate social responsibility and environmental cost on financial performance. In: Barolli, L., Poniszewska-Maranda, A., Enokido,T. (eds.) CISIS 2020. AISC, vol. 1194, pp. 418–425. Springer, Cham. https://doi.org/10.1007/978-3-030-50454-0_42

Nuryaman. (2015). The Influence of Intellectual Capital on The Firm's Value with The Financial Performance as Intervening Variable. *Procedia - Social and Behavioral Sciences*, *211*, 292–298. https://doi.org/10.1016/j.sbspro.2015.11.037

Nyeadi, J; Ibrahim, M; and Sare, Y. (2018). Corporate social responsibility and financial performance nexus. *Journal of Global Responsibility*, *3*(1), 41–60.

O'Donovan, G. (2002). Environmental disclosures in the annual report. *Accounting, Auditing & Accountability Journal*, *5*(3), 344–371. https://doi.org/10.1108/095135702104358700

Oware, K., & Thathaiah, M. (2019). Corporate social responsibility investment, third- party assurance and firm performance in India The moderating effect of financial leverage. *Department of Business Administration*, 303–324.

Rahman, Md. Mominur., & Islam, Mohammad Ekramol (2023). The impact of green accounting on environmental performance: mediating effects of energy efficiency. *Environmental Science and Pollution Research*, *30*, 69431–69452

Rana, M. Sohel & Hossain, Z. (2023). Intellectual Capital, Firm Performance, and Sustainable Growth: A Study on DSE-Listed Nonfinancial Companies in Bangladesh. *Sustainability*.

Sardo, F., Serrasqueiro, Z., & Alves, H. (2018). On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels. *International Journal of Hospitality Management*, *75*, 67–74. https://doi.org/10.1016/j.ijhm.2018.03.001

Saxena, R.P. & Khandelwal, P. K. (2012). Greening of Industries for Sustainable Growth : An Exploratory Study on Durable and Service Industries. *International Journal of Social Economics*, *551–586*.

Su, Xiaofeng; Xu, Anxin; Lin, Wenhe; Chen, Youcheng; Liu, Songtao; and Xu, Wenxing. (2020). Environmental leadership, green innovation practices, environmental knowledge learning, and firm performance. *Sage Open*, *10*(2). DOI: 10.1177/2158244020922909

Surroca, J; Tribó, J. A; and Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, *31*, 463–490. https://doi.org/doi:10.1002/smj.820

Turcsanyi, J. & Sisaye, S. (2013). Corporate social responsibility and its link to financial performance. *World Journal of Science, Technology and Sustainable Development*, *10*(1), 4–18. https://doi.org/10.1108/20425941311313065

Uadiale, O. & Fagbemi, T. (2012). Corporate Social Responsibility and Financial Performance in Developing Economies: The Nigerian Experience. *Journal of Economics and Sustainable Development*, *3*(4), 44–54.

Vetchagool, W. (2022). Asia Social Issues. *The Effect of Intellectual Capital on Firm Profitability and Efficiency: Evidence from Thai Listed Companies in the Agriculture and Food Industry.* DOI:10.48048/asi.2023.253049

Wahba H, & Elsayed, K. (2015). The mediating effect of financial performance on the relationship between social responsibility and ownership structure. *Future Business Journal*, *1*(1), 1-12. https://doi.org/10.1016/j.fbj.2015.02.001

Winner, R. J. (2016). CSR and sustainability reporting practices of top companies in India. *An International Journal*, *21*(1), 36–55.

Xu, Jian & Zhang, Yi. (2021). Does Intellectual Capital Measurement Matter in Financial Performance? An Investigation of Chinese Agricultural Listed Companies. *Agronomy*. DOI:10.3390/agronomy11091872

Xu, Jian., Haris, M., and Liu, Feng. (2022). Intellectual capital efficiency and firms' financial performance based on business life cycle. *Journal of Intellectual Capital*.

Yusliza, M.; Yong, J. Y.; Tanveer, M. I.; Ramayah, T.; Juhari, N. F.; and Muhammad, Z. (2019). A structural model of the impact of green intellectual capital on sustainable performance. *Journal of Cleaner Production*, *234*, 626–637.

Yusoff, Y.M.; Omar, M.K.; Zaman, M.D.K.; and Samad, S. (2019). Do all elements of green intellectual capital contribute toward business sustainability? Evidence from the malaysian context using the partial least squares method. *Journal of Cleaner Production.*, *234*, 626–627.

Zhu, Q. F. (2017). The Role of Customer Relational Goverment In Enviromental and Economic Performance Improvement Through Green Supply Chain Management. *Journal of Cleaner Production*, *155*, 46–53.