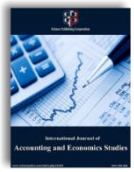
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Research paper



The Influence of AKHLAK as a Green Corporate Identity on The Sustainability Performance of SOEs With Green Innovation as an Intervening Variable: Case Study of SOE-Indonesia in the Manufacturing Sector

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Abstract

Awareness of environmental preservation makes the company's goal not only to seek profits but also to contribute to society and the environment to achieve sustainable performance. Likewise with state-owned enterprises, which not only seek profits but also become government tools to achieve benefits for society and the environment, including carrying out special government assignments. Therefore, this research aims to analyze the influence of AKHLAK as a green corporate identity on sustainability performance with green innovation as an intervening variable. The research was conducted at state-owned enterprises in the manufacturing sector by distributing questionnaires to company management. We analyzed data using PLS-SEM, with the results that green corporate identity had no significant effect on sustainability performance, green corporate identity influenced green innovation, green innovation influenced sustainability performance, and green innovation was able to be a mediating variable between green corporate identity and sustainability performance. This research is expected to provide implications for relevant stakeholders such as company management and regulators so that they can improve the implementation of green corporate identity and encourage green innovation to achieve sustainability goals.

Keywords: *green corporate identity; green innovation; sustainability performance; AKHLAK.*

1. Background

Sustainability is important considering that environmental damage is increasingly widespread, resulting in climate change and its very dangerous impact on humans. Problems of environmental degradation, such as depletion of natural resources, carbon pollution, climate change, and decline in biodiversity, lead to a decline in ecological balance. Based on the 2024 Environmental Performance Index (EPI) (Block et al., 2024)Indonesia is ranked 163rd out of 180 countries in the world with an EPI Index of 33.6, growing from 2022 with a ranking of 164 and an EPI value of 28.2. An EPI value below 50 is considered low, or environmental conservation performance in Indonesia is still not optimal.

Rising environmental concerns have heightened global companies' awareness, including state-owned enterprises (SOEs), where the government gives assignments to state companies to take part in environmental preservation. Therefore, SOEs must integrate sustainable practices into their business models. The goals of law are that, as stated in the State-Owned Enterprises Law, the goal of state companies is not only to seek profits but also to help achieve social welfare, including currently also encouraging the achievement of net-zero emissions.

Sustainability performance can be said to be the goal of the company's business processes, which is the responsibility of company managers in helping the company and its stakeholders to assess/assess how the company's operational activities contribute without reducing/disrupting sustainable development goals (Warhurst, 2002). Zhang (2010) defines sustainability performance as the quantification of an organization's total performance based on performance indicators, which can include policies, decisions, and actions that create economic, social, and environmental results. Measurement of sustainability performance in several studies based on the triple bottom line, where company performance will be measured using three dimensions, namely environmental dimensions, social dimensions, and economic dimensions. These three dimensions have also been used in research by Chin et al. (2015), Hussain et al. (2018).

In the corridor of state-owned enterprises, sustainability goals can be divided into environmental, economic, social, financial, and special government assignment dimensions. These objectives are based on the State-Owned Enterprises Law and regulations related to SOEs. The economic performance dimension is associated with cost efficiency (Acquah et al., 2021; Afum et al., 2020; Baumgärtner & Quaas, 2010; Firmansyah et al., 2021; Yildiz Çankaya & Sezen, 2019; Zhu et al., 2008), social performance is associated with benefits for society and employees (Mohamed et al., 2020; McKenzie, 2004), environmental performance is associated with improving the environment and natural resources (Firmansyah et al., 2021; Akhimien & Adekunle, 2023; Obeidat et al., 2020), financial performance is associated with increasing

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added value for company shareholders (Akhimien & Adekunle, 2023; Ong & Chen, 2013; Hourneaux Jr et al., 2018), and performance special assignments relate to the effectiveness of implementing activities assigned by the Government (Borman & Motowidlo, 1997; Motowidlo & Van Scotter, 1994).

To achieve sustainability goals, one factor that is often tested is green corporate identity. Green corporate identity (GCI) is a concept that refers to a company's image that focuses on sustainability and commitment to the environment. A strong corporate identity in the context of sustainability can influence a company's sustainability performance. Albert & Whetten (1985) states that environmental problems can be resolved depending on the identity of the organization itself, which is considered a shared identity. An environmentally friendly corporate identity will realize sustainable performance (Y. Chen, 2011). Previous research has proven that GCI has a positive effect on SP (Zehir & Ozgul, 2020; Xing et al., 2019; Suraporn & Chalermporn, 2021). Research from Dinarjito & Ahmar (2023) found that there is still little research involving the direct influence of green corporate identity on sustainable performance for all aspects, economic, social, environmental, and financial. About SOE, the green corporate identity reflected in core value AKHLAK is regulated in the circular letter of the Minister of SOE Number SE-7/MBU/07/2020 concerning the main values of human resources for state-owned enterprises, which consist of trustworthy, competent, harmonious, loyal, adaptive, and collaborative. Details regarding the AKHLAK core values can be found on the Ministry of State-Owned Enterprises' website (https://bumn.go.id/profil/erabarukami/nilai-organisasi?lang=en). These basic values remain applicable until superseded by new regulations.

Apart from GCI, green innovation (GI) is also believed to be a determining factor in achieving sustainability goals. Green innovation (GI) can be said to be any type of innovation that contributes to the creation of new processes, products, or services to minimize environmental damage and prevent degradation, and at the same time, maximize the utilization of natural resources (Leal-Millán et al., 2017). Several previous studies stated that with green innovation, sustainability goals including economic, environmental, social, financial, and assignment dimensions will be (Asadi et al., 2020); Elzek et al., 2021). However, other research produces different results, namely that green innovation does not affect sustainability performance (Fitriani, 2015; Tay & Sundiman, 2021).

Apart from influencing sustainability performance, GCI also encourages the creation of green innovation. To create environmentally friendly innovation, employees must be based on an environmentally friendly identity or value. Study Khan et al. (2022) states that culture, which is part of a company's identity, will increase company innovation. This statement is supported by Dougherty (1990) Stated Organizational identity has the power to bring similarities between individuals in the organization, which results in a passion for innovation to satisfy customers. Yousaf et al. (2022) in his research found that there was a significant positive relationship between green corporate identity to green innovation. This supports previous research conducted by Mushtaq et al. (2019) and Soewarno et al. (2019). In contrast to the research above, (Hatta & Parahyanti, 2016) stated that organizational identity does not have a significant influence on innovation behavior.

Based on previous research, it appears that research related to GCI concerning SP and GI is still limited (Dinarjito & Ahmar, 2023). Apart from that, taking the research object in the form of a state-owned enterprise becomes a novelty because previous research tends to be on private companies. Then, the results of previous research showed differences in results, which became a research gap. Therefore, it is very important to re-examine the influence of GCI and GI on SP and the role of GI as a moderator variable of the relationship between GCI and SP in state companies in the manufacturing sector. The choice of SOE in the manufacturing sector is because Manufacturing companies tend to have a greater chance of damaging the environment (Lalo & Hamiddin, 2021). Environmental costs are greater for non-manufacturing companies.

This research is presented from the introduction, literature review, research methodology, results, and discussion. The article then concludes with conclusions, limitations, and practical implications. This research is expected to provide academic implications in the form of increasing literature related to GCI, GI, and SP, especially in state companies. Apart from that, this research is expected to provide practical implications for stakeholders in increasing the implementation of the AKHLAK core value as a green corporate identity and encouraging green innovation to achieve sustainability performance.

2. Literature Review

Sustainability performance refers to a company's effectiveness across all dimensions and measures of corporate sustainability (Schaltegger & Wagner, 2006). This aligns with the triple bottom line thesis (Elkington, 1998), which posits that firms bear three responsibilities: people, planet, and profit. These duties are manifested in sustainability performance measures encompassing environmental, social, economic, and financial metrics.

Collaboration among all stakeholders is necessary to attain sustainability objectives. Stakeholder theory asserts that organizations must consider and address the interests of diverse entities that impact their business activities (Freeman, 2010). Organizations must cultivate connections with stakeholders by addressing their wishes and requirements, particularly those stakeholders who possess influence over the resources essential for the company's operations, including employees, customers, and owners (Hörisch et al., 2020). Organizations that prioritize stakeholder needs and expectations generally have enhanced long-term relationships, less conflict risk, and heightened trust and loyalty (Burguete et al., 2022; Godam et al., 2019; Siew, 2023).

The Green Corporate Identity, seen as an intangible asset, is thought to yield both economic and non-economic advantages for the organization (Suraporn & Chalermporn, 2021; Xing et al., 2019; Zehir & Ozgul, 2020). GCI should be acknowledged as an asset in the financial accounts; nevertheless, it remains unrecognized due to measurement challenges. Numerous intangible assets are considered to confer advantages to the organization, including green intellectual capital. Prior studies indicate that GIC positively influences sustainability performance (Yusliza et al., 2020; Zalfa & Novita, 2021)It remains unrecognized in accounting.

The topic of GCI, green innovation, and desired performance is also related to legitimacy theory. Legitimacy theory can help in analyzing the relationship between companies and their environment (Mousa & Hassan, 2015). (Dowling & Pfeffer, 1975) mentioned that legitimacy theory comes from the concept of Organizational Legitimacy, which is defined as a state and event that arises when the value system run by an entity is in line with the value system of a large social system, in which the entity is part of the social system. (Donaldson & Preston, 1995) stated that legitimacy can be understood as the alignment between institutional actions and prevailing social values. Legitimacy theory concentrates on the concept of social contracts, which implies that the operational limitations of a company also depend on the extent to which the company complies with the boundaries and norms of society (Brown & Deegan, 1998). Therefore, to achieve desirable performance, companies need to respect the rights of the community in which the company operates.

Stakeholders assess sustainability performance through the preparation of sustainability reports by firms. Sustainability reports have emerged as a crucial necessity for managerial accountability. The IFRS S1 and S2 standards endeavor to incorporate information pertaining

to environmental performance within their disclosures. GRI guidelines offer direction for organizations to disclose their sustainability performance in a sustainability report.

Sustainability reporting has emerged as a method for organizations to assess and convey organizational performance in pursuit of sustainable development objectives (Alsayegh et al., 2023). This technique also entails accountability for performance to both internal and external stakeholders (Vluggen et al., 2019). Sustainability reporting serves as a management and accountability instrument (Rahi et al., 2022). This entails documenting how a business incorporates sustainability into its operations, along with its environmental, social, and economic implications (Tommasetti et al., 2020). Consequently, firms must enhance their performance across all dimensions to attain sustainability objectives. The sustainability performance must be documented in a report to facilitate stakeholder decision-making. One of the factors that influences a company's sustainability performance is green corporate identity, and in Indonesian BUMN, it is referred to as AKHLAK. This research is based on Resources-based theory (RBT), which states that company resources are diverse, dissimilar, and in the form of productive goods or services that give each company a unique character (Kor & Mahoney, 2004). RBT believes that companies can gain competitive advantage by utilizing company resources in the form of corporate identity which contains values that are respected by all elements of the company or relying on intangible assets (intangible assets). One of the important things in the RBT concept, so that companies can gain a competitive advantage, is by implementing a green corporate identity, which is the identity and main values of the company that are believed by all elements of the company to be environmentally friendly. Corporate identity can be added value, unique, and irreplaceable if implemented well. This organizational identity will be an added value for the company in producing green innovation and achieving the company's sustainability goals.

According to Porter et al. (2016)Green organizational culture is defined as a collection of organizational assumptions, beliefs, symbols, and artifacts that represent the desire or need to function in an ecologically sustainable manner. Culture is part of the company's identity, which is always recognized by company elements in supporting the achievement of company goals. Corporate identity is a set of beliefs that are the most important, sacred, and special for the company. Organizational identity can be said to be the basis of the company, and the company's goals are to be achieved (Albert & Whetten, 1985). Green corporate identity is a company identity that is oriented towards environmental sustainability. Green corporate identity can help companies realize the 2 two main goals of business today, namely, continuing to seek profits and maintaining the environment (Firmansyah, 2017). Green corporate identity is an interpretation scheme about environmental management and protection, whose members collectively develop their behavior towards the environment (Chen, 2011).

AKHLAK is the main value of human resources of State-Owned Enterprises as a work culture glue that supports continuous performance improvement. This is following the Circular Letter of the Minister of State-Owned Enterprises Number SE-7/MBU/07/2020, which emphasizes Trustworthy, Competent, Harmonious, Loyal, Adaptive, and Collaborative behavior. The purpose of the AKHLAK identity is to ensure that SOE operates with integrity and under established standards. This will become an intangible asset that can support the company in achieving its sustainability goals.

Green Innovation (GI) or green innovation is any form of innovation that aims to reduce all negative impacts on the environment by carrying out company activities that enable the use of environmentally friendly natural resources and energy (Sáez-Martínez et al., 2016; Aboelmaged, 2018; Rezende et al., 2020Green innovation is currently important to increase additional value for companies. Green innovation will result in the sustainability of all forms of resources for the next generation (Chen et al., 2006).

Concerning sustainability goals, the implementation of AKHLAK core values is expected to be able to increase the company's green innovation and increase employee integrity to encourage the achievement of sustainability performance. Green innovation will not be realized if no identity, behavior, or culture is oriented towards environmental sustainability. The environment is a company resource to achieve long-term goals.

Sustainable performance, or often referred to as sustainability performance (SP), can be interpreted as company performance in all dimensions and for all indicators of corporate sustainability (Schaltegger & Wagner, 2006). Zhang (2010) defines sustainability performance as a quantification of an organization's total performance based on performance indicators, which can include policies, decisions, and actions that create economic, social, and environmental outcomes. Previous studies often use economic, social, environmental, and financial dimensions to measure sustainability performance (Chin et al., 2015; Hussain et al., 2018; Yildiz Çankaya & Sezen, 2019; Firmansyah et al., 2021; Afum et al., 2020; Shahzad, Du, et al., 2020; Inman & Green 2018; Acquah et al., 2021). However, in this research, the dimension of special assignments was added as one of the objectives of establishing a SOE by the SOE Law.

3. Hypothesis Development

3.1 Green Corporate Identity to Sustainability Performance

Intangible assets that can help achieve company goals include corporate identity. Based on RBT theory, corporate identity can be a resource that can achieve corporate excellence. According to Albert & Whetten (1985)Organizational identity is the basis of the company and the company's goals to be achieved. Identity is needed to show company characteristics in building interactions with internal and external parties (Albert et al., 2000). Organizational identity will help each employee understand what and how they interact by the values that characterize the company, which will later be used to achieve company goals. The company's current goal is sustainability performance. Having good identity characteristics will help the company be accepted by society, making it easier for the company to achieve sustainable performance (legitimacy theory).

GCI can help companies realize 2 two main business goals today, namely, continuing to seek profits and maintaining the environment (Firmansyah, 2017). Green corporate identity is an interpretation scheme about environmental management and protection, whose members collectively develop their behavior towards the environment (Chen, 2011). According to Chang & Chen (2013) green corporate identity is the main key to the context of interpretation in an organization related to environmental management. In their research, Chang & Chen (2013) stated that green corporate identity direct effect on green innovation, which will influence its later sustainability performance. Zehir & Ozgul (2020) in their research found that green corporate identity has a direct positive effect on firm performance and has a direct positive effect on green innovation, which will also have a positive effect on green corporate identity.

Building on this literature, we propose the following hypotheses:

H1: Green Corporate Identity Influences Sustainability Performance

H1a: Green Corporate Identity influences Economic Performance

H1b: Green Corporate Identity Influences Environmental Performance

H1c: Green Corporate Identity influences Social Performance

H1d: Green Corporate Identity influences Financial Performance

H1e Green Corporate Identity Influences Task Performance

3.2 Green Innovation to Sustainability Performance

Green innovation reflects steps taken to reduce the unfavorable effects that production and operations may have on the environment, with an emphasis on improving processes, technologies, systems, products, as well as management methods (Chen et al., 2018). Green innovation is one form of implementation of the RBT theory. Innovation shows the company's ability to use new methods, new ways, new processes, and technology that can achieve the company's competitive advantage.
If businesses change their production and services to provide more choices for customers and help them live more sustainable lives, they will have a central role in shaping a more sustainable future. Business sustainability is reflected in the implementation of strategies and activities that can meet the current requirements of economic entities and their beneficiaries, while at the same time protecting, maintaining, and enhancing human and natural resources for the future (Labuschagne et al., 2005).
With the continuous development of innovation carried out by the company, the company's sustainability goals will be achieved, both in terms of economic, social, operational, and environmental goals. Asadi et al. (2020) in their research in Malaysia show that green innovation has a positive effect on sustainability performance.
From the explanation above, the hypothesis in the research is as follows:
H2: Green Innovation influences Sustainability Performance
H2a: Green Innovation influences Economic Performance
H1b: Green Innovation influences Environmental Performance
H2c: Green Innovation influences Social Performance
H2d: Green Innovation influences Financial Performance
H2e: Green Innovation influences Task Performance

3.3 Green Corporate Identity to Green Innovation

Talke et al. (2010) argue that companies that aim to bring renewal and innovation within the company must increase knowledge, skills, abilities, and expertise because they have been proven to influence the success of innovation. This is because under RBT theory, innovation and corporate identity are intangible assets that can utilize other resources to achieve the company's competitive advantage. Dougherty (1990) explains that organizational identity has the power to bring similarities between individuals in the organization, which results in a passion for innovation to satisfy customers. Yousaf et al. (2022) in their research found that there is a significant positive relationship between green corporate identity against GI. This supports previous research conducted by Mushtaq et al. (2019) and Soewarno et al. (2019). Research with similar results also occurred in research by Chang & Chen (2013). Hatta & Parahyanti (2016) argue that the factors that influence innovation behavior more are internal individuals within the company. Corporate identity embedded in individual company employees will foster environmentally friendly innovation. Green corporate identity can take the form of internal and external identities as discussed above.
Building on this literature, we propose the following hypotheses:
H3: Green Corporate Identity influences Green Innovation

3.4 Green Corporate Identity through Green Innovation to Sustainability Performance

Organizational identity is the basis of the company and the company's goals to be achieved (Albert & Whetten, 1985). Identity is needed to show the company's characteristics in building interactions with internal and external parties (Albert et al., 2000). Organizational identity will help each employee understand what and how they interact by the values that characterize the company, which will later be used to achieve company goals. This shows that GOI is an important asset that can encourage the achievement of corporate sustainability according to RBT theory. The company's current goal is sustainability performance (SP). Therefore, with the formation of green corporate identity, It is hoped that this will increase environmentally based innovation, which will later have an impact on sustainability performance. In their research, C. H. Chang & Chen (2013) stated that green corporate identity has a direct influence on green innovation, which will later influence green corporate identity.
Zehir & Ozgul (2020) research found that green corporate identity has a significant effect on company performance through green innovation. Then Fatoki (2021) and Xing et al. (2019) found that green innovation has mediated the relationship between green corporate identity to corporate environmental performance. Fatoki (2021) Also produces the same result. Green innovation mediates the relationship between green organizational culture and environmental performance.
Having reviewed the literature, we now outline our hypotheses as follows:
H4: Green Corporate Identity Influences Sustainability Performance Through Green Innovation
H4a: Green Corporate Identity influences Economic Performance through Green Innovation
H4b: Green Corporate Identity influences Environmental Performance through Green Innovation
H4c: Green Corporate Identity influences Social Performance through Green Innovation
H4d: Green Corporate Identity influences Financial Performance through Green Innovation
H4e: Green Corporate Identity Influences Task Performance Through Green Innovation

4. Methodology

This research is quantitative research with a structural equation model (SEM) approach. The research method uses a non-probability sampling technique, and the sampling technique uses purposive sampling. Data was collected through a questionnaire delivered to SOE managers in the manufacturing sector. The selected SOEs are SOEs that are going concerns and are not in the status of being/have been disbanded or have been self-managed to other SOEs. The results of the questionnaire distributed to all State-Owned Enterprises in the manufacturing sector and those who returned answers amounted to 60 respondents.
Respondents who filled out the questionnaire were managers from the lower manager level to the top manager. The lower managers who filled out the questionnaire were 27 people; the middle managers were 26 people, and 7 people were top managers. The managers came from state-owned manufacturing companies consisting of PT PLN, PT Pertamina, PT Biofarma, PT Biro Klasifikasi Indonesia, PT Len Industri, PT Krakatau Steel, PT Mineral Industri Indonesia, PT Pupuk Indonesia, PT Semen Indonesia, and PT Industri Kereta Api.

The variables used in this research consist of sustainability performance (SP), which is the dependent variable and is measured using five dimensions taken from research Firmansyah et al. (2021), Yildiz Çankaya & Sezen (2019), Zhu & Sarkis (2007), Paulraj (2011) for the economic performance (ESP) dimension; Firmansyah et al. (2021), Yildiz Çankaya & Sezen (2019), Paulraj (2011) for the social performance (SSP) dimension; Firmansyah et al. (2021), Antoni et al., (2020), Asiaei et al. (2022), Gholami et al. (2022), Shahzad, Du, et al. (2020) for the environmental performance (ENP) dimension; Ahmad et al. (2019), Ong & Chen 2013) for financial performance (FSP); and Lee et al. (1999); (Schermerhorn Herni Setiawan & Ariadi (2012); Herni Setiawan & Ariadi (2012); Kerzner (2009); (Khan et al., 2022) for task performance (TSP). Measurements of these five dimensions were also developed by considering existing indicators in regulations related to SOE.

Then, the independent variable in this research consists of Green Corporate Identity (GCI), which is measured using 6 indicators by the core values in SOE, namely AKHLAK, which stands for Trustworthy, Competent, Harmonious, Loyal, Adaptive, and Collaborative. Then, the intervening variable used is Green Innovation (GI) measured using 10 indicators developed by Y.-S. Chen et al. (2006), Soewarno et al. (2019).These indicators are also adjusted to regulations related to State-Owned Enterprises. Appendix 1 shows the indicators used in this research.

The data analysis technique uses a structural equation model test (Structural Equation Modeling - Partial Least Squares (SEM-PLS). The use of the SEM-PLS model is because, according to J. F. Hair, Risher, et al. (2019) SEM-PLS can be used for developing structural models/exploratory studies. The PLS-SEM evaluation process involves a structural equation model consisting of a measurement model (measurement models/outer models) and structural models (structural models/inner models).

Figure 1 and Figure 2 show the structural model used in this research to answer the research objectives. Figure 1 depicts a structural model to test the influence of GCI, GI on SP with GI as a mediating variable. Figure 1 shows the second-order model where the SP variable is measured through the dimensions of economic performance (ESP), social performance (SSP), environmental performance (ENP), financial performance (FSP), and task performance (TSP).

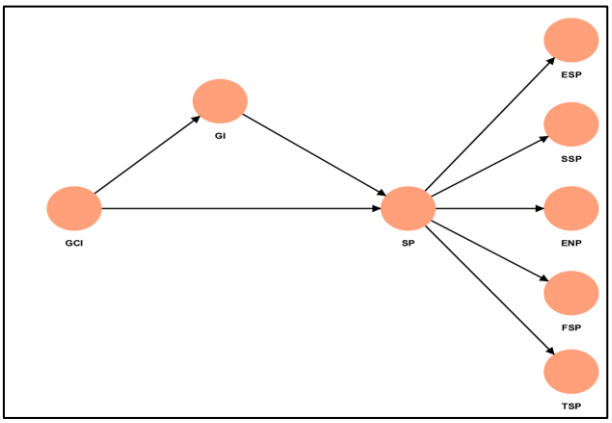


Fig. 1: Structural Model of GCI, GI and SP

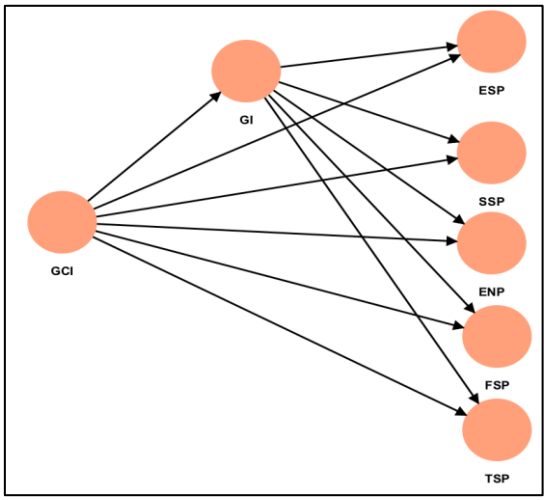


Fig. 2 shows a structural first-order model to see the influence of GCI, GI on each SP dimension

with GI as a mediating variable. Model 2 is an expansion model of Model 1 to analyze in more detail the relationship of the GIC and GI variables to each dimension of SP.

Figure 2. Structural Model of GCI, GI, and SP Dimensions

5. Results

Table 1 presents the descriptive statistical outcomes derived from the questionnaire administered to respondents. According to Table 1, the respondents' feedback indicates that the implementation of GCI and GI is favorable, with the average response above 4. Subsequently, both GCI and GI, which are already commendable, indicate that the performance of SOE in the manufacturing sector is also satisfactory, with scores exceeding 4 in social performance, environmental performance, and task performance, whereas economic performance and financial performance are nearly at 3.9. This suggests that GCI and GI are considered capable of enhancing the sustainability performance of SOE.

Table 1: Descriptive Statistics

Variable	Mean	Std Dev
Green Corporate Identity	4,281	0,4615
Green Innovation	4,092	0,5865
Sustainability Performance:	4,047	0,5458
Economic Performance	3,931	0,5126
Social Performance	4,117	0,5586
Environmental Performance	4,107	0,5726
Financial Performance	3,986	0,5753
Task Performance	4,093	0,5101

After carrying out descriptive statistical tests, structural equation testing was carried out, which included outer model and inner model tests. Because the performance variable is a second-order form because it has dimensions, the outer model test is carried out with dimension and variable stages. In testing the outer model at the dimension level, the outer loading test is not all valid. In the GCI variable, there is 1 indicator whose outer loading value is below 0.7, namely GCI3, which is the Harmonious core value. Then, for the GI variable, all indicators are valid with an outer loading value above 0.7. Furthermore, for the ESP dimension in the SP variable, the ESP1 and ESP2 indicators are invalid, the SSP dimension, the SSP5 and SSP6 indicators are declared invalid, the ENP dimension, the ENP2, ENP3, ENP4 and ENP5 indicators are declared invalid, the FSP dimension, the FSP1 indicator are declared invalid and the TSP5 indicator in the TSP dimension is declared invalid. Then, a specification test was carried out by eliminating all invalid indicators and the results were all valid with an outer loading value above 0.7.

After testing the outer model at the dimension level, a variable level outer loading test was carried out with the results of all measurement constructs having outer loading values above 0.7, so that all were valid as shown in Table 2.

Table 2: Outer Loading Test

Variables	Dimension	Outer Loading	Decision
Green Coporate Identity (GCI)	GCI1<- GCI	0,799	Valid
	GCI2<- GCI	0,796	Valid
	GCI4<- GCI	0,709	Valid
	GCI5<- GCI	0,862	Valid
	GCI6<- GCI	0,802	Valid
Green Innovation (GI)	GI1 <- GI	0,841	Valid
	GI2 <- GI	0,862	Valid
	GI3 <- GI	0,801	Valid
	GI4 <- GI	0,847	Valid
	GI5 <- GI	0,807	Valid
	GI6 <- GI	0,787	Valid
	GI7 <- GI	0,817	Valid
	GI8 <- GI	0,803	Valid
	GI9 <- GI	0,811	Valid
	GI10 <- GI	0,830	Valid
Sustainability Performance (SP)	ENP<- SP	0,771	Valid
	ESP<- SP	0,781	Valid
	SSP<- SP	0,934	Valid
	FSP<- SP	0,877	Valid
	TSP<- SP	0,897	Valid

Next, reliability is carried out by looking at the values of Cronbach's Alpha and Composite Reliability, with the results can be seen in Table 3. The results show that all measurement items are declared reliable and reliable in measuring each variable.

Table 3: Reliability Test

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Decision	AVE
Green Corporate Identity	0,854	0,863	0,895	Reliable	0,632
Green Innovation	0,946	0,946	0,954	Reliable	0,674
Sustainability Performance	0,950	0,954	0,956	Reliable	0,522

Then, test the validity of another table 3 through the level of Convergent Validity, which is measured using Average Variance Extracted (AVE) for the measured variables, showing a value above 0.50. The evaluation results show that all variable AVE values are above 0.50, which means that convergent validity is met.

The next outer model test is the evaluation of discriminant validity through the Fornell-Lacker test, as in Table 4. The results of the discriminant validity test show that the variables measured are valid.

Table 4: Fornell-Lacker test

	GI	GCI	SP
GI	0,821		
GCI	0,654	0,795	
SP	0,878	0,674	0,736

After carrying out the outer model test, the researchers carried out an inner model test, which included significance tests, F-squared, R-squared, and Q-squared tests. Based on Table 5, you can see the results of the significance test for hypothesis testing. Of all the hypotheses tested, there were 5 hypotheses that were not proven, namely H1, H1b, H2a, H4a, and H4c.

Table 5: Significance Test Results

No	Hipothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-stat	P-values	Decision
H1	GCI-> SP	0,205	0,228	0,120	1,709	0,088	not significant
H1a	GCI-> ENP	0,708	0,683	0,123	5,770	0,000	significant
H1b	GCI-> SSP	-0,022	0,033	0,161	0,134	0,893	not significant
H1c	GCI-> ESP	0,527	0,488	0,154	3,427	0,001	significant
H1d	GCI-> FSP	0,919	0,870	0,135	6,818	0,000	significant
H1e	GCI-> TSP	0,397	0,433	0,151	2,624	0,009	significant
H2	GI->SP	0,757	0,727	0,124	6,123	0,000	significant
H2a	GI-> ENP	0,143	0,174	0,124	1,148	0,251	not significant
H2b	GI-> CNS	0,888	0,833	0,137	6,481	0,000	significant
H2c	GI-> ESP	0,284	0,321	0,145	1,956	0,050	significant
H2d	GI-> FSP	0,919	0,870	0,135	6,818	0,000	significant
H2e	GI->TSP	0,522	0,481	0,167	3,133	0,002	significant
H3	GCI-> GI	0,654	0,666	0,131	5,014	0,000	significant
H4	GCI->GI->SP	0,496	0,473	0,078	6,362	0,000	significant
H4a	GCI->GI->ENP	0,093	0,126	0,105	0,881	0,378	not significant
H4b	GCI->GI->SSP	0,578	0,538	0,095	6,113	0,000	significant
h4c	GCI->GI->ESP	0,185	0,222	0,130	1,427	0,154	not significant
H4d	GCI->GI->FSP	0,599	0,567	0,121	4,945	0,000	significant
H4e	GCI->GI->TSP	0,340	0,302	0,091	3,732	0,000	significant

The next inner model test is the F-squared test to see the effect at the structural level. The results of the F-squared test can be seen in Table 6. Based on Table 6, the influence of GI on SP, FSP, SSP, and TSP is classified as having a high influence. Then, the influence of GI on ENP, ESP is classified as moderate. Then the influence of GCI on GI, ENP, ESP is classified as high, GCI on SP, and FSP is classified as moderate, and GCI on SSP is classified as low influence.

Table 6: F-Square Test

	f-square	Note
GI -> SP	1,772	High
GCI -> GI	0,749	High
GCI -> SP	0,149	Medium
GIVEN -> ENP	0,034	Medium
GI -> ESP	0,104	Medium
GI -> FSP	1,366	High
GI -> CNS	1,919	High
GI -> TSP	0,523	High
GCI -> ENP	0,829	High
GCI -> ESP	0,358	High
GCI -> FSP	0,065	Medium
GCI -> SSP	0,011	Low
GCI -> TSP	0,301	Medium

Based on the goodness of fit of those tested, the R-squared value in the structural model shows that the influence of GCI on GI shows a moderate influence because it is above 0.33 ((Chin & Marcoulides, 1998)GCI and GI on SP show a high influence, GCI and GI on ENP, ESP have a medium influence, and GCI and GI on FSP, SSP, and TSP show a high influence. The R-squared value shows the amount of variation in the endogenous variable that can be explained by other exogenous/endogenous variables in the model.

Table 7: R-squared Test

	R-square	R-square adjusted
GI	0,428	0,420
SP	0,819	0,814
ENP	0,455	0,447
ESP	0,628	0,623
FSP	0,763	0,759
SSP	0,865	0,863
TSP	0,806	0,803

Tests: Other goodness of fit can be seen in the Q-square test with results as in Table 8. Size q-square describes a measure of prediction accuracy, namely, how well each change in exogenous/endogenous variables can predict endogenous variables. Based on Table 8, the Q2 value shows a value above 0, which means that the model built has high predictive relevance.

Table 8: Q-square Predict

	Q^2predict
GI	0,381
SP	0,460
ENP	0,514
ESP	0,463
FSP	0,057
SSP	0,246
TSP	0,508

6. Discussion

Based on Resource-Based Theory, intangible assets are developed so that companies can achieve competitive advantage, one of which is by implementing a green corporate identity. It is believed that a green corporate identity will realize sustainable performance (Y. Chen, 2011). Sustainability performance will not be realized if the company does not have an identity that really wants to preserve the environment. Albert & Whetten (1985) states that environmental problems can be resolved depending on the identity of the organization itself, which is considered a shared identity. However, research results show that GCI does not have a significant effect on sustainability performance (SP). These results are not by (Zehir & Ozgul, 2020) and (Suraporn & Chalermporn, 2021) which states that GCI influences sustainability performance.

The research results in Table 5 also show that corporate identity does not affect the dimensions of social performance, while the other dimensions (ESP, ENP, FSP, and TSP) have a significant and positive effect. This indicates that the absence of GCI on SSP causes the total influence of GCI on SP to be insignificant. There is a possibility that GCI has no influence on SP in total because SOE has not optimally implemented these core values. Apart from that, this lack of influence could also be caused by the invalidity of the "Harmonious" indicator. Harmony can mean behavior that respects differences and creates a conducive environment. This disharmony can create obstacles in achieving sustainable performance. As in previous studies by (Sari & Imsar, 2023) and (Lestari et al., 2022)Harmony is one of the indicators that does not affect the performance of BUMN employees. This is a finding that needs to be a concern for regulators regarding one of BUMN's core values. Understanding and implementing core values need to be a priority so that BUMN harmony can be maintained.

The minimal impact of GCI on social performance can be analyzed via the lens of legitimacy theory. Management's inability to exhibit adherence to social responsibility may render GCI values ineffective in delivering social benefits (Newson & Deegan, 2002). Managers must exhibit AKHLAK identity in executing firm operations to adhere to the social contract by revealing facts in alignment with societal expectations. A further explanation for the lack of influence is the company's failure to undertake or disclose Corporate Social Responsibility activities (Bebbington et al., 2008).

If we look at the influence of GCI on the SP dimensions, only the influence of GCI on social performance has a significant effect. This indicates that SOE has not been able to implement the AKHLAK core value in serving employees and the community. SOE has not been able to provide direct benefits and impacts to society that can encourage the creation of sustainable performance. Social performance is performance that can be directly felt by the community, so that it will have a significant impact on the company and other stakeholders (Mitra & Gaur, 2020).

This research also shows that GI has a significant effect. This is in accordance with RBT, where companies can use resources in the form of green innovation to achieve a competitive advantage. By implementing green innovation, SOE can achieve cost efficiency, improve financial performance, reduce environmental damage, provide benefits to society, and increase the company's ability to carry out government assignments. The results of this research support previous research where green innovation has a positive effect on sustainability performance (Asadi et al., 2020; Elzek et al., 2021).

If we look at the influence of GI on the dimensions of sustainability performance, GI does not have a significant effect on environmental performance (ENP). These results support research from (Tay & Sundiman, 2021) where green innovation does not affect sustainability performance due to a lack of awareness and concern for environmental sustainability, such as using raw materials that are not environmentally friendly, products that are difficult to decompose, and are not easily recycled. This causes a negative impact on environmental sustainability in supporting sustainability goals. The reason why GI does not affect ENP is also the possibility that, apart from being asked to make a profit, SOEs also should create social welfare value (Afum et al., 2023). Therefore, SOE green innovation activities may be more likely to focus on social performance, which has a greater impact on social welfare than environmental performance. However, SOEs tend to take a more moderate approach to green innovation, neither excessively pursuing high-end green technologies nor excessively low-end green technologies (Liu et al., 2024).

The research results also found that GCI had a positive effect on Green Innovation. The core value of AKHLAK as part of GCI SOE provides encouragement for companies to always carry out green innovation to always strive to create views, systems, processes, technology or policies that support environmental preservation and improve community welfare. These findings support previous research such as (Asadi et al., 2020; C. H. Chang & Chen, 2013; Khan et al., 2022; Soewarno et al., 2019; Yousaf et al., 2022; Zehir & Ozgul, 2020) which resulted in the finding that GCI had a positive effect on green innovation.

Regarding the role of green innovation as a mediator variable between GCI and SP, Table 5 shows that GI can play a mediating role in the influence of GCI on SP. In the direct influence of GCI on SP, the relationship did not have a significant effect, and in the indirect relationship, it was found that GI was able to mediate the influence of the GCI variable on SP. This shows that GI is capable of being a full mediator variable. The results of this study support the research Zehir & Ozgul (2020), who found that green corporate identity has a significant effect on company performance through green innovation.

However, if we look at the relationship between GCI and the SP dimension through GI, it is found that only the indirect relationship between GCI and ENP and FSP is not significant with GI as an intervening variable. This shows that there is a possibility that the innovation produced by the company does not fully support environmental preservation or that the investment made by the company has not been fully successful in reducing the negative impact on the environment, the impact of which also does not support financial performance. Therefore, SOE can produce innovation by increasing the effectiveness of GCI in preserving the environment, which will later be able to improve the company's financial performance.

7. Conclusions and Limitations

Based on the discussion above, it can be concluded that the structural equation model used in this research is reliable and valid in testing and predicting the influence of green corporate identity towards sustainable performance through green innovation. The research results show that green corporate identity does not have a significant effect on SP. However, green corporate identity has a significant effect on green innovation, and green innovation has a significant effect on sustainability performance. If you look in more detail, green corporate identity only affects the environmental, economic, financial, and task performance dimensions, while on the financial and social dimensions, green corporate identity has no direct effect. The influence of green innovation on the dimensions of sustainability performance, except for the environment, shows a significant and positive influence. Then, related to the role of green innovation as a mediating variable, it appears that green innovation can act as an intermediate mediator between green corporate identity with sustainable performance. Apart from that, green innovation is also able to act as a mediator in relationships with green corporate identity on the dimensions of social performance, financial performance, and task performance.

This research has several limitations, such as theoretical limitations due to the lack of previous research studies on this topic that use mediating variables to test the effect of green corporate identity towards sustainability performance through sustainability performance. Apart from that, there is a possibility that the respondent will not be proportional to the number of State-Owned Enterprises involved in this research. Then, factors such as industry differences among the SOE sample may also influence the results.
Given the presence of persistent invalid AKHLAK indicators, more research should encompass a comprehensive evaluation of BUMN firms outside the confines of the manufacturing sector. The incorporation of independent variables can further enhance the model's comprehensiveness. Secondary data can also be utilized to augment the existing literature.

Practical Implication

This research is expected to provide benefits for many stakeholders such as managers, regulators, society, academics, and other parties in increasing knowledge from the results of this research. Seeing the results of this research related to sustainability performance, stakeholders are expected to be able to take the right strategy to monitor the implementation of GCI and increase green innovation in SOE. BUMN leaders and employees are to be able to carry out AKHLAK training, prioritize green investments, and make sustainability reports by existing standards. AKHLAK training can be conducted regularly, including monthly seminars and workshops to absorb AKHLAK values. Socialization occurs regularly, including the creation of banners to reinforce AKHLAK principles. Employing internal audits or establishing a dedicated team to monitor the execution of AKHLAK values. The selection of AKHLAK ambassadors can be executed as exemplary and paragons. Green investment can be achieved by establishing targets for the primary performance indicators of each state-owned enterprise to facilitate green investment and innovation. Organizations may conduct green innovation contests and offer financial support to employees pursuing green innovations. State-owned enterprises can partner with other entities to foster green innovation. Shareholders can compel a gradual transition to renewable energy sources.
Then, for regulators, the results of this research are expected to provide an understanding of the importance of implementing GCI and GI to achieve sustainability performance. In real terms, BUMN regulators can create regulations to require companies to carry out green innovation and require employees to undertake training on AKHLAK and matters related to increasing competition to develop green innovation. In theory, GCI combined with green innovation will have an influence on improving sustainability performance.

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Appendix

	Indicators	Mean	Standard Dev
GCI1	Employees firmly believe in their duties, values and ethics, including those related to environmental preservation (Trust).	4.450	0,3896
GCI2	Employees complete tasks of the best quality, including environmental preservation (Competent).	4.300	0,4625
GCI3	Employees care for each other and build a conducive (harmonious) work environment.	4.017	0,5306
GCI4	Employees prioritize the interests of the nation and state; the company includes environmental preservation (Loyal).	4.383	0,4590
GCI5	Employees are proactive, innovate and follow developments in environmentally friendly technology (Adaptive).	4.283	0,4590
GCI6	Employees build synergistic cooperation in using natural resources while preserving the environment (Collaborative).	4.250	0,4681
	Average	4.281	0,4615
GI1	Our company uses and develops environmentally friendly technology.	4.217	0,5958
GI2	In our company there is a roadmap for innovation and information technology.	4.083	0,5986
GI3	Our company is increasing its innovation and information technology budget.	4.050	0,6396
GI4	Our company is trying/has been improving *patent* or other intellectual property rights (*intangible assets*).	4.100	0,6174
GI5	Our company uses environmentally friendly materials to produce goods and services.	4.067	0,5208
GI6	Our company uses many local ingredients for product production in the development of goods and services.	4.000	0,6465
GI7	Our company evaluates the products produced as easy to reuse, recycle and decompose in developing goods and services.	4.100	0,5625
GI8	Our company uses technology to save energy.	4.117	0,5681
GI9	Our company creates differentiated customer experience through technology in the marketing process.	3.950	0,5729
GI10	Our company enhances the digital ecosystem in the development, production and marketing of environmentally friendly products and services.	4.233	0,5431
	Average	4.092	0,5865
ESP1	There is a reduction in material/material/equipment costs in our company.	3.833	0,6611
ESP2	There is a reduction in energy consumption costs in our company.	3.867	0,0560
ESP3	There is a reduction in waste management costs in our company.	3.750	0,6785
ESP4	There is growth in market share in our company.	4.017	0,5736
ESP5	There is an increase in contribution to state revenue.	4.117	0,5681
ESP6	There is an increase in sustainable business and employment opportunities.	4.000	0,5382
	Average	3.931	0,5126
SSP1	There is increased customer and community satisfaction.	4.133	0,5736
SSP2	There is an improvement in our company image.	4.100	0,5903
SSP3	There is increasing investment in social, educational, and cultural projects in our company.	4.017	0,6146
SSP4	There is increased awareness and protection of the claims and rights of people in communities closely connected to our company.	4.017	0,5451
SSP5	There is increasing gender equality in business in our company.	4.217	0,5681
SSP6	There is an increase in employee health and safety.	4.167	0,5250
SSP7	There are increased relations with the community such as non-governmental organizations (NGOs) and community activists.	4.167	0,4938
	Average	4.117	0,5586
ENP1	There are improvements in the environmental conditions at our company locations.	4.250	0,4507
ENP2	There is a reduction in waste (water and/or solids).	4.083	0,5847
ENP3	There is a reduction in carbon emission levels.	4.000	0,6465
ENP4	There is a decrease in consumption for hazardous/toxic substances.	3.950	0,5868
ENP5	There is a decrease in the frequency of environmental accidents.	3.933	0,6694
ENP6	There is increased compliance with regulations related to the environment and K3.	4.250	0,5618
ENP7	There is an environmental impact mitigation policy.	4.283	0,5083
	Average	4.107	0,5726
FSP1	There is an increase in profit margin compared to the industry average.	4.033	0,5222
FSP2	There is an increase in positive cash flow to meet short-term and long-term obligations.	3.917	0,5708
FSP3	There is a higher rate of return on capital.	3.967	0,5667
FSP4	Adopted internal control system adequate regarding the presentation of accurate financial reports.	4.067	0,5931
FSP5	Availability of adequate financial resources for long-term survival.	3.983	0,6403
FSP6	Maintaining long term margin	3.950	0,5590
	Average	3.986	0,5753
TSP1	Completion of assignments on time.	4.150	0,5201
TSP2	Costs for completing assignments according to planning.	4.100	0,5333
TSP3	Assignments are in accordance with the planned quality.	4.150	0,5042
TSP4	The results of the assignment are accepted by the Government/regulator/client and the community.	4.067	0,4549
TSP5	Successful collaboration with the team.	4.000	0,5382
	Average	4.093	0,5101