

## The Influence of Business Analysis and Environmental Orientation on Green Business Strategy with Green Innovation as a Mediation Variable in SMEs that are members of the Sibakul Jogja Platform in Yogyakarta City

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ARTICLE INFO	ABSTRACT
<b>Keywords:</b> Business Analysis, Environmental Orientation, Green Business Strategy, Green Innovation	<i>This study aims to determine the influence of business analysis and environmental orientation on green business strategies with green innovation as a mediating variable in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City. This study uses a quantitative descriptive method. The sample in this study is 100 SMEs. The sampling technique uses a saturated sampling technique or census. The data analysis method used in this study is Partial Least Squares (PLS). The result of this study is that business analysis has a positive and significant effect on green business strategies. Environmental orientation has a positive and significant effect on green business strategies. Business analysis has a positive and significant effect on green innovation. Environmental orientation has a positive and significant effect on green innovation. Green innovation has a positive and significant effect on green business strategies. Green innovation has a positive and significant effect on mediating business analysis on green business strategies. Green innovation positively and significantly mediates environmental orientation towards green business strategies</i>

### INTRODUCTION

Entrepreneurship is an activity in creating and developing innovative and sustainable businesses. Currently, entrepreneurship is considered a symbol of the success of a business (Armanu et al., 2021), the sensitivity and initiative of an entrepreneur in identifying opportunities, innovating and continuing to explore new ideas in the business world is certainly an advantage in the midst of increasing environmental uncertainty. Therefore, strengthening entrepreneurship, Small and Medium Enterprises (SMEs) and cooperatives is the government's agenda in the National Medium-Term Development Plan (RPJMN) for the 2020-2024 period. The growth of new entrepreneurs with small and medium scale (SMEs) is the beginning of productive businesses that can be run by the community, and over time SMEs can develop into businesses that have competitiveness. Of course, this is an opportunity to reduce poverty levels, create jobs, generate export foreign exchange, stimulate investment, and achieve equal distribution of community income (Coordinating Ministry for Economic Affairs, 2020).

The Special Region of Yogyakarta is one of the provinces that has the most tourist destinations, based on statistical data from the Yogyakarta Provincial Tourism Office in 2023 there are around 274 tourist attractions consisting of natural tourism, cultural tourism, artificial tourism and village/village tourism. Of course, with the many tourist destinations, it opens up many business opportunities in the field of Small and Medium Enterprises, where SMEs have become one of the economic sectors that has grown rapidly since market policy reforms in the 1980s and 1990s in most developing countries (Othumary Mgeni, 2015). SMEs are businesses that are an important pillar in the country's economy, contributing to innovation and a more equitable distribution of income (Kumar et al., 2018).

According to government regulation No. 4 of 2023 concerning SMEs, SMEs are defined as businesses that have certain criteria based on the number of workforce, annual turnover and assets. This regulation emphasizes

the importance of partnerships between SMEs and the government, the private sector and other institutions to create an ecosystem that supports the development of SMEs that are expected to contribute to sustainable development by paying attention to social and environmental impacts in business practices to be carried out.

There are three main reasons why a country encourages the growth and prosperity of SMEs, namely 1) In general, SMEs have a better performance in creating a productive workforce; 2) SMEs often achieve increased productivity through investment and technological changes because SMEs are dynamic businesses and always adapt to the environment, and 3) SMEs have proven to have an advantage in flexibility compared to large companies (Sabihaini & Eko., 2020). In order for SMEs to remain competitive and adaptive in rapidly changing market conditions, SMEs need strategies that can be adapted to the needs of global trade, technical breakthroughs, demographic changes, innovation, financial aid, and entrepreneurship. However, these developments must also be balanced with environmental management (Sabihaini et al., 2024). Currently, environmental problems are the most frequent problems in the Special Region of Yogyakarta. Environmental problems that often arise include air pollution, water pollution, and soil pollution. Environmental problems in Yogyakarta are strengthened by the results of a report from the Yogyakarta Environment and Forestry Service regarding the environmental quality index (IKLH). IKLH is an indication or initial description that provides a quick conclusion of an environmental condition in a certain scope and period, IKLH submitted by the DIY Environment and Forestry Service shows figures of 60.53 (2021), 59.92 (2022) and 66.29 (2023).

According to Eef Saifullah et al. (2024), several business sectors contribute a large amount of waste so that it becomes a concern that has an impact on the environment, thus raising concerns that the limited resources produced from waste will have an impact on environmental pollution, ecosystem damage, water source pollution, lack of clean water sources and energy availability. Therefore, the issue of environmental management is one of the important aspects of the overall management function which determines and implements in achieving the company's goals oriented towards environmental conservation, especially for SMEs (Sezen & Cankaya, 2013). This is because SMEs are sometimes considered to cause more pollution than large companies. SMEs account for about 70% of industrial waste and pollution due to higher emission percentages and lack of attention to environmental conservation (Eef Saifullah et al., 2024). Today, environmentally friendly business management is a mechanism to achieve good environmental performance. Environmental orientation can help companies build an environmentally friendly image, so that it can improve environmental performance which will certainly bring economic benefits (Yu & Huo, 2018). In this case, green innovation practices will greatly enable SMEs or companies to develop capabilities that lead to improved company performance (Irfan et al., 2023).

Green innovation is defined as environmentally friendly product innovation carried out by companies or SMEs, in order to reduce the impact of business processes on the environment (Tjahjadi et al., 2020). Green product innovation is the production of new products or services that do not have a negative impact on the environment from existing products or competitors (Wong, 2012). Another thing was also conveyed by Irfan et al (2023) that green innovation is the improvement of existing production processes, the use of environmentally friendly technology to produce goods that do not have a negative impact on the environment, especially in today's era of environmentally conscious business competition, of course green innovation will be very influential in reducing negative impacts on the environment. Solehudin et al (2024) stated that business analysis is an important foundation for understanding and managing factors that affect company performance. Business analysis not only includes an understanding of internal aspects such as operations and finance, but also involves an in-depth evaluation of external conditions such as market trends, industrial competition, and global economic dynamics. With business analysis, companies can identify strengths, understand weaknesses, and design strategies that can improve competitiveness. Therefore, business analysis is not only a tool, but also a holistic approach to managing risk, responding to market changes, and shaping a sustainable future for companies in the midst of evolving business dynamics (Lukmanudin et al., 2024).

In general, an eco-friendly business is the same as any other business, which is that it must generate enough profits to be able to continue operating. The difference lies in what is the main concern of the eco-friendly business itself by considering the value of sustainability and human resources (Koester, 2010). According to Yasir et al (2020), there are several aspects in green business strategies, including green HRM, green finance, green marketing, green production, green R&D, and green purchasing. A green business strategy is a systematic aspect, so that it can significantly improve the safety and environmental sustainability of all actions inside and outside the company or SME (Eef Saifullah et al., 2024). Yasir et al (2020) stated in their research that green business strategies are significantly influenced by environmental orientation. Environmental orientation is a mechanism

that contributes positively in terms of providing valuable information related to stakeholders. Another point put forward by Chen et al (2006) is that green innovation can be used as an appropriate environmental approach to improve environmental efficiency, environmental protection, and waste management for green business strategies.

Green innovation not only improves processes, products and organizations by improving technological capabilities, but can also prevent pollution and save energy. In 2018, the Special Region Government of Yogyakarta through the Office of Cooperatives and Small Enterprises and Small and Medium Enterprises (SMEs) established the SiBakul Jogja platform. SiBakul Jogja is an Information System for the Development of Cooperatives and Business Actors in the Special Region of Yogyakarta (DIY) which is a form of digitization of the DISKOP UKM DIY circular development model for Cooperatives and SMEs in DIY. Digital transformation which includes data collection and grouping activities, growth of cooperatives and SMEs, training, coaching, facilitation, consultation and mentoring. SiBakul Jogja also provides services aimed at SMEs who are already SiBakul partners and intend to get support related to marketing. Until 2023, SMEs that have joined SiBakul Jogja have reached 312,870 business actors. Currently, DIY is focusing on the green economy program, therefore through SiBakul Jogja of the Yogyakarta Regional Government, in this case the Yogyakarta Cooperative and SME Office runs a green SME program and begins to encourage SMEs to use environmentally friendly materials and packaging, as well as change consumer behavior. The Green UKM program is an initiative that can encourage SMEs to adopt environmentally friendly business practices, to support this program, SiBakul Jogja provides delivery incentives both domestically and internationally for SMEs that successfully use environmentally friendly materials and packaging. According to Sabihaini et al. (2018), there are two benefits of having environmental awareness, including: 1) A high understanding of the environment can increase their concern for the environment; 2) Environmental awareness will affect participation in the environment. Sabihaini et al (2024) also said that in order for SMEs to remain competitive and adaptive in rapidly changing market conditions, strategies and adjustments to global trade needs, technical breakthroughs, demographic changes, innovation, and entrepreneurship are needed. The results of previous studies show several different findings. Research by Fuji Wara et al (2024) states that green innovation can mediate between green entrepreneurial orientation and entrepreneurial performance in SMEs. However, this research still needs to be expanded to find out how business analysis as an important aspect in business strategy affects the implementation of green business strategies through green innovation. While business analysis is important in decision-making, in-depth research on how SMEs use business analytics to shape green business strategies is still limited, as most of the literature focuses on large companies and requires more specific studies in the context of SMEs.

Environmental orientation reflects a company's commitment to environmentally friendly practices and companies that have a strong environmental orientation tend to be more successful in adopting sustainable business strategies (Jabbour et al., 2013). Bansal (2002) also said that environmental orientation has been discussed in the context of sustainability, but most of the research focuses on large companies without considering the unique dynamics that SMEs face. Based on some of the literature descriptions mentioned above, this research is important to do, because research that specifically examines the influence of these two variables on green business strategies in the context of SMEs still needs to be done because most of the literature focuses on large companies. This research can provide deeper insights into how green innovation can mediate the influence of business analysis and environmental orientation on green business strategies. Therefore, the author is interested in conducting a research entitled "The Influence of Business Analysis and Environmental Orientation on Green Business Strategy with Green Innovation as a Mediation Variable in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City".

## **RELATIONSHIP BETWEEN VARIABLES**

### **The influence of business analysis on green business strategy**

Business analysis is a way for SMEs to gain an understanding of customers, suppliers, and market trends that help develop environmentally friendly products (Kunc et al., 2018). Meanwhile, according to Zameer et al (2022), business analysis is an important research direction for learning, developing, innovating, and exploring new knowledge that can be integrated into special practices to achieve company added value. Business analysis not only includes an understanding of internal aspects such as operations and finance, but also involves an in-depth evaluation of external conditions such as market trends, industrial competition, and global economic dynamics (Solehudin et al., 2024). Business analysis can be said to be a supporter of a strategic planning and

decision-making process with insights and knowledge based on data (Phillips et al., 2021). Arafat et al (2018) stated that business analysis is a tool used by companies to build the ability to continuously identify opportunities to improve their business. In this case, of course, business analysis and green business strategy have a related and mutually supportive relationship, because business analysis plays an important role in designing and implementing an effective green business strategy.

### **The influence of environmental orientation on green business strategy**

According to Yasir et al (2020) environmental orientation is defined as the extent to which a company can recognize environmental problems and attitudes to overcome environmental problems, environmental orientation also refers to the company's responsibility to the environment, namely the importance of recognizing the company's impact on the environment, and its need to minimize these impacts, covering various measures that the company takes to reduce harmful environmental impacts from daily activities (Yu & Huo, 2018). Environmental orientation is an attitude or belief- and value-based construct (Gabler et al., 2015) that captures the level of recognition of companies of their importance and inclination towards environmental protection (Chan et al., 2012). In this case, of course, environmental orientation and green business strategy have a related relationship, Yasir et al (2020) stated that environmental orientation has a positive and significant effect on green business strategy.

### **The influence of business analysis on green innovation**

Business analysis can be said to be a supporter of a strategic planning and decision-making process with insights and knowledge based on data (Phillips et al., 2021). Arafat et al (2018) stated that business analysis is a tool used by companies to build the ability to continuously identify opportunities to improve their business. Davenport et al (2013) stated that business analysis has an important purpose for an organization or company, this is because business analysis can provide companies with the ability to handle new types of data and drive important innovations to create significant advantages. With business analysis companies can identify their strengths, understand weaknesses and design strategies that can improve competitiveness. (Solehudin et al., 2024). Of course, in this case, business analysis and green innovation have a related and mutually supportive relationship, because business analysis plays an important role in designing effective green innovation and helping companies understand and navigate a dynamic business environment.

### **The influence of environmental orientation on green innovation**

Chan et al (2012) stated that environmental orientation is a valuable intangible resource that can inspire companies to improve environmental performance. Environmental orientation also refers to a company's responsibility to the environment, i.e. the importance of recognizing the company's impact on the environment, and its need to minimize that impact, covering various measures that the company takes to reduce the harmful environmental impact of daily activities (Yu & Huo, 2018). Another finding was also put forward by Feng et al (2018) that internal environmental orientation as a managerial view of corporate behavior norms, internal efforts and values for environmental protection. In this case, of course, environmental orientation and green innovation have a related and mutually supportive relationship, because environmental orientation has a positive effect and plays an important role in designing effective green innovation.

### **The influence of green innovation on green business strategy**

Green innovation can be defined as services, products and processes that do not harm or reduce environmental degradation, are environmentally friendly and increase natural resources (Huang & Li, 2017). Green innovation is a mechanism that can minimize industrial pollution and reduce environmental impacts that can harm companies (Wong et al., 2013). The same thing was also expressed by Soewarno et al (2018) that green innovation refers to innovation that emphasizes waste reduction, pollution prevention and the implementation of environmental management systems. Green innovation is also perceived as an environmentally friendly product and process innovation carried out by companies in order to reduce the impact of their business processes on the environment. Green innovation shows the extent to which green products or processes compete in the market as a result of companies that reduce their overall environmental impact (Irfan et al., 2023). Of course, in this case,

green innovation and green business strategy have a mutually supportive relationship, because green innovation can provide a clear direction to encourage green business strategy.

### The influence of business analysis on green business strategy with green innovation as a mediating variable

Solehudin et al. (2024) that business analysis is a critical foundation for understanding and managing factors that affect company performance. Business analysis aims to provide in-depth insight into various aspects that affect the performance of a company/organization. In research conducted by Rizwan Raheem et al (2023), it is stated that green innovation is services, products, and processes that do not harm or reduce environmental degradation, are environmentally friendly and increase natural resources. The same thing was also conveyed by Wong et al (2013) that environmentally friendly innovation refers to various innovations that allow the reduction of adverse impacts on the environment so as to provide a great opportunity for companies to achieve environmental performance targets and benefits. Green innovation shows the extent to which green products or processes compete in the market as a result of companies that reduce their overall environmental impact (Irfan et al., 2023). Basically, business analysis provides a strong foundation for formulating green innovation, which can provide a clear direction to encourage green business strategy.

### The influence of environmental orientation on green business strategy with green innovation as a mediating variable

Chan et al (2012) stated that environmental orientation is a valuable intangible resource that can inspire companies to improve environmental performance. Environmental orientation refers to a company's responsibility to the environment, i.e. the importance of recognizing the company's impact on the environment, and its need to minimize that impact, encompassing various measures that the company takes to reduce the harmful environmental impact of daily activities (Yu & Huo, 2018). It is also stated by Feng et al. (2018), that environmental orientation is defined as the extent to which company managers recognize the importance of environmental issues. Of course, in this case, green innovation plays a role as a quick way to change environmental orientation into a successful green business strategy. Thus, the long-term achievements that a company/organization wants to achieve can be realized.

### RESEARCH HYPOTHESIS

H1 : Business analysis has a positive effect on green business strategy  
H2 : Business analysis has a positive effect on green innovation  
H3 : Environmental orientation has a positive effect on green business strategy  
H4 : Environmental orientation has a positive effect on green innovation  
H5 : Green innovation has a positive effect on green business strategy  
H6 : Green innovation mediates positively business analysis on green business strategy  
H7 : Green innovation positively mediates the environmental orientation towards the green business strategy.

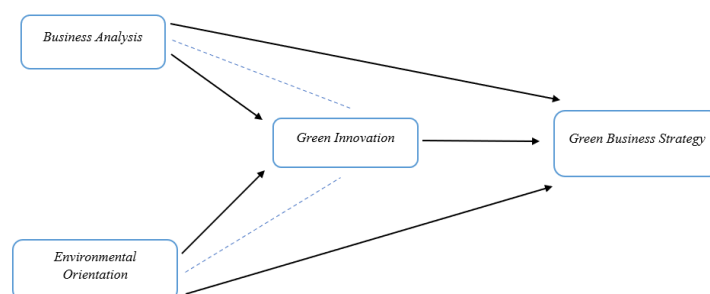


Figure 1. Framework of Thought

### METHOD

This study uses a quantitative research method, which is a scientific method whose data is in the form of numbers or numbers that can be processed and analyzed using mathematical or statistical calculations. The type

of research used in this study is hypothesis testing research. The purpose of hypothesis testing is to test the hypothesis proposed by the researcher, namely the influence of business analysis and environmental orientation on green business strategy with green innovation as a mediating variable. Hypothesis testing must be able to explain certain traits and relationships as well as understand the differences between the groups or independent variables concerned (Sekaran & Bougie, 2017). The unit of analysis in this study is SMEs, where each SME is represented by an owner or manager as well as a respondent. Sekaran & Bougie (2017) posited that a population is the entire group of people, events or interests that the researcher wants to investigate. The population in this study is as many as 100 owners or managers of SMEs who are members of the SiBakul Jogja platform in Yogyakarta City. Among them are 44 culinary SMEs, 43 fashion SMEs and 13 handicraft SMEs. In this study, the researcher uses a saturated sampling technique or census technique to determine the sample to be used. The saturated sampling technique or census technique is a sampling technique that involves all members of the population.

Table 1. Operational Definitions and Variable Indicators

Definisi Operasional dan Indikator Variabel			
Variabel	Definisi Variabel	Indikator	Skala Pengukuran
<i>Business Analysis</i>	<i>Business analysis</i> merupakan proses yang dilakukan UKM untuk memecahkan masalah bisnis, memonitoring dan mengidentifikasi serta mencari peluang baru dalam pertumbuhan dan pengembangan produk ramah lingkungan.	1. Deskriptif 2. Prediktif 3. Preskriptif Sumber: Kunc et al (2018).	Skala Likert 5 point
<i>Environmental Orientation</i>	<i>Environmental orientation</i> diartikan sebagai sejauh mana perusahaan dapat mengenali permasalahan lingkungan dan sikap untuk mengatasi permasalahan lingkungan.	1. <i>Environmental Orientation Internal</i> 2. <i>Environmental Orientation Eksternal</i> Sumber: Yasir et al (2020).	Skala Likert 5 point
<i>Green Business Strategy</i>	<i>Green business strategy</i> diartikan sebagai integrasi masalah lingkungan kedalam proses pengambilan keputusan, dengan pertimbangan untuk menciptakan budaya kesadaran dan tindakan untuk mendukung tanggung jawab lingkungan.	1. <i>Green HRM</i> 2. <i>Green Finance</i> 3. <i>Green Marketing</i> 4. <i>Green Production</i> 5. <i>Green R&amp;D</i> 6. <i>Green Purchasing</i> Sumber: Yasir et al (2020); Astuti & Walsyuni (2018); Berto et al (2020); Moravcikova et al (2017); Aisyah et al (2018); Ganda (2017) & Joshi et al (2015).	Skala Likert 5 point
<i>Green Innovation</i>	<i>Green innovation</i> adalah pendekatan lingkungan yang tepat untuk meningkatkan efisiensi lingkungan, perlindungan lingkungan, serta pengelolaan limbah. <i>Green innovation</i> juga dapat diartikan sebagai layanan, produk dan proses yang tidak merugikan atau mengurangi degradasi lingkungan, ramah lingkungan dan meningkatkan sumber daya alam.	1. <i>Green Product Innovation</i> 2. <i>Green Process Innovation</i> Sumber: Tjahjadi et al (2020).	Skala Likert 5 point

## RESULTS AND DISCUSSION

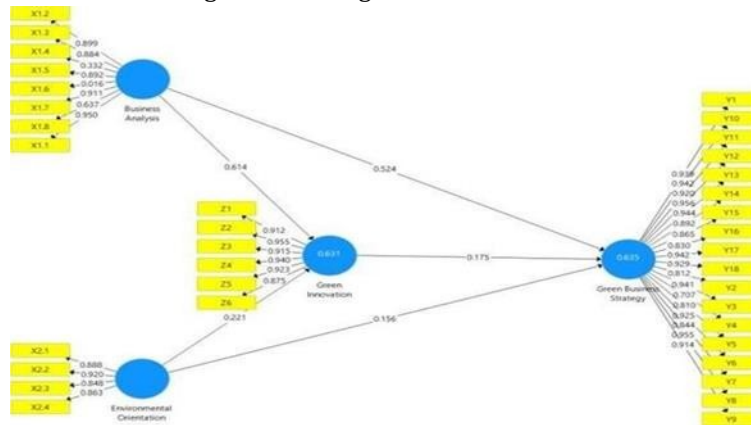
In this study, hypothesis testing uses the Partial Least Square (PLS) analysis technique which consists of an outer model or measurement model, and an inner model or structural model (Hair et al.) The outer model or measurement model is a measurement model that connects indicators with other variables and the inner model or structural model is a structural model that connects latent variables.

### 1. Outer Model Results

#### a. Validity Test Results

Validity tests are used to measure the validity or validity of a questionnaire. A questionnaire is said to be valid if the questions in the questionnaire can measure a variable measured by the questionnaire (Ghozali, 2021).

Figure 2. PLS Algorithm Test Results



b. Convergent Validity

Convergent Validity is the value of the outer loading on the latent variable with the related indicator. At this stage, a correlation value greater than 0.70 is considered good (Hair et al.) The following are the results of the outer loading in this study:

Tabel 2. Outer Loading 30 Responden

<b>Business Analytics (BA)</b>	BA1	0.950	> 0.7	Valid
	BA2	0.899	> 0.7	Valid
	BA3	0.884	> 0.7	Valid
	BA4	0.332	< 0.7	Invalid
	BA5	0.892	> 0.7	Valid
	BA6	0.016	< 0.7	Invalid
	BA7	0.911	> 0.7	Valid
	BA8	0.637	< 0.7	Invalid
<b>Orientation Environment (EO)</b>	EO1	0.888	> 0.7	Valid
	EO2	0.920	> 0.7	Valid
	EO3	0.848	> 0.7	Valid
	EO4	0.863	> 0.7	Valid
<b>Business Strategy Green (GBS)</b>	GBS1	0.939	> 0.7	Valid
	GBS2	0.942	> 0.7	Valid
	GBS3	0.920	> 0.7	Valid
	GBS4	0.956	> 0.7	Valid
	GBS5	0.944	> 0.7	Valid
	GBS6	0.892	> 0.7	Valid
	GBS7	0.865	> 0.7	Valid
	GBS8	0.830	> 0.7	Valid
	GBS9	0.942	> 0.7	Valid
	GBS10	0.929	> 0.7	Valid
	GBS11	0.812	> 0.7	Valid
	GBS12	0.941	> 0.7	Valid
	GBS13	0.707	> 0.7	Valid
	GBS14	0.810	> 0.7	Valid
	GBS15	0.925	> 0.7	Valid

<b>Green Innovation (GI)</b>	GBS16	0.844	> 0.7	Valid
	GBS17	0.955	> 0.7	Valid
	GBS18	0.914	> 0.7	Valid
	GI.1	0.912	> 0.7	Valid
	GI.2	0.955	> 0.7	Valid
	GI.3	0.915	> 0.7	Valid
	GI.4	0.940	> 0.7	Valid
	GI.5	0.923	> 0.7	Valid
	GI.6	0.875	> 0.7	Valid

Based on Table 2. It can be seen that 33 items in the research variable have an outer loading value of > 0.7 so that they are declared feasible or valid for use in the study, while there are 3 items in the research variable have an outer loading value of < 0.7 so that they are declared unsuitable or invalid so that the 3 items are omitted.

Tabel 3. Outer Loading 30 Responden

<b>Business Analysis (BA)</b>	BA1	0.968	> 0.7	Valid
	BA2	0.922	> 0.7	Valid
	BA3	0.908	> 0.7	Valid
	BA5	0.877	> 0.7	Valid
	BA7	0.905	> 0.7	Valid
<b>Orientation Milieu (EO)</b>	EO1	0.888	> 0.7	Valid
	EO2	0.920	> 0.7	Valid
	EO3	0.848	> 0.7	Valid
	EO4	0.863	> 0.7	Valid
<b>Business Strategy Green (GBS)</b>	GBS1	0.938	> 0.7	Valid
	GBS2	0.942	> 0.7	Valid
	GBS3	0.920	> 0.7	Valid
	GBS4	0.956	> 0.7	Valid
	GBS5	0.944	> 0.7	Valid
	GBS6	0.892	> 0.7	Valid
	GBS7	0.864	> 0.7	Valid
	GBS8	0.830	> 0.7	Valid
	GBS9	0.942	> 0.7	Valid
	GBS10	0.930	> 0.7	Valid
	GBS11	0.812	> 0.7	Valid
	GBS12	0.941	> 0.7	Valid
	GBS13	0.707	> 0.7	Valid
	GBS14	0.810	> 0.7	Valid
	GBS15	0.925	> 0.7	Valid
	GBS16	0.844	> 0.7	Valid
	GBS17	0.956	> 0.7	Valid
	GBS18	0.914	> 0.7	Valid
<b>Green Innovation (GI)</b>	GI1	0.911	> 0.7	Valid
	GI2	0.956	> 0.7	Valid
	GI3	0.915	> 0.7	Valid
	GI4	0.940	> 0.7	Valid
	GI5	0.923	> 0.7	Valid
	GI6	0.875	> 0.7	Valid

Source: Data processed, 2024

c. Discriminant Validity

The validity test of discrimination uses cross loading, an indicator will be declared to meet the validity of discrimination if the loading value of the intended construction is greater than the loading value of other constructs. The following are the cross-loading values of each indicator in this study:

Tabel 4. Cross Loading

	<b>Business Analysis</b>	<b>Milieu Orientation</b>	<b>Green Business Strategy</b>	<b>Green Innovation</b>
<b>BA.2</b>	0.899	0.677	0.716	0.644
<b>BA.3</b>	0.884	0.695	0.673	0.682
<b>BA.4</b>	0.332	0.341	0.215	0.311
<b>BA.5</b>	0.892	0.623	0.648	0.750
<b>BA.6</b>	0.016	-0.086	-0.098	-0.026
<b>BA.7</b>	0.911	0.715	0.668	0.727
<b>BA.8</b>	0.637	0.514	0.691	0.495
<b>EO.1</b>	0.684	0.888	0.601	0.597
<b>EO.2</b>	0.759	0.920	0.641	0.757
<b>EO.3</b>	0.573	0.848	0.543	0.360
<b>EO.4</b>	0.615	0.863	0.570	0.620
<b>GBS.1</b>	0.798	0.641	0.939	0.697
<b>GBS.2</b>	0.720	0.670	0.942	0.720
<b>GBS.3</b>	0.697	0.618	0.920	0.742
<b>GBS.4</b>	0.705	0.644	0.956	0.665
<b>GBS.5</b>	0.747	0.586	0.944	0.632
<b>GBS.6</b>	0.716	0.482	0.892	0.529
<b>GBS.7</b>	0.674	0.567	0.865	0.561
<b>GBS.8</b>	0.595	0.511	0.830	0.432
<b>GBS.9</b>	0.741	0.719	0.942	0.709
<b>GBS.10</b>	0.733	0.697	0.929	0.725
<b>GBS.11</b>	0.722	0.517	0.812	0.587
<b>GBS.12</b>	0.778	0.643	0.941	0.690
<b>GBS.13</b>	0.430	0.518	0.707	0.279
<b>GBS.14</b>	0.623	0.501	0.810	0.582
<b>GBS.15</b>	0.702	0.624	0.925	0.608
<b>GBS.16</b>	0.563	0.509	0.844	0.503
<b>GBS.17</b>	0.747	0.650	0.955	0.652
<b>GBS.18</b>	0.741	0.666	0.914	0.643
<b>GI.1</b>	0.679	0.554	0.610	0.912
<b>GI.2</b>	0.817	0.772	0.708	0.955
<b>GI.3</b>	0.779	0.615	0.703	0.915
<b>GI.4</b>	0.763	0.703	0.585	0.940
<b>GI.5</b>	0.659	0.552	0.597	0.923
<b>GI.6</b>	0.578	0.552	0.599	0.875
<b>BA.1</b>	0.950	0.647	0.671	0.717

Source: Data processed, 2024

d. Average Extracted Variance (AVE)

In addition to looking at the cross loading value, the validity test can also be found by looking at the average variance extracted (AVE) value. The AVE score can meet the criteria if > 0.5 (Ghozali, 2021). The following are the AVE values in this study:

Table 5. AVE Scores

Variable	Criterion	AVE Score
Business Analytics	> 0.5	0.579
Environmental Orientation	> 0.5	0.775
Green Business Strategy	> 0.5	0.801
Green Innovation	> 0.5	0.847

Source: Data processed, 2024

Based on Table 5. It can be seen that the AVE value exceeds 0.5, so it can be concluded that each variable has sufficient validity and can be used in future research.

e. Composite Reliability

The reliability test of the construct is measured by two criteria, namely composite reliability and Cronbach's alpha. Composite reliability is a measure of internal consistency in scale items (Ghozali, 2021). The following are the Composite reliability values in this study:

Tabel 6. Composite Reliability

Variable	Criterion	Composite Reliability
Business Analytics	> 0.7	0.901
Environmental Orientation	> 0.7	0.932
Green Business Strategy	> 0.7	0.986
Green Innovation	> 0.7	0.971

Source: Data processed, 2024

Based on Table 6, the composite reliability value of each variable exceeds 0.7, so it can be concluded that each variable is declared reliable and can be used in future research.

f. Cronbach's Alpha

To reinforce the results of reliability tests, Cronbach's alpha was used to assess how well the items in the questionnaire measured the same construct. In confirmatory studies, Cronbach's alpha value greater than 0.7 was used. Meanwhile, in exploratory research, Cronbach's alpha value in the range of 0.6 to 0.7 is still considered acceptable (Ghozali, 2021). Here are Cronbach's alpha values in this study:

Tabel 7. Cronbach's Alpha

Variabel	Kriteria	Cronbach's Alpha
Analisis Bisnis	> 0.7	0.858
Lingkungan Orientasi	> 0.7	0.904
Bisnis Hijau Strategi	> 0.7	0.985
Inovasi Hijau	> 0.7	0.964

Source: Data processed, 2024

Based on Table 7. The value of Cronbach's alpha shows > 0.7, so it can be concluded that each of the research variables has met the reliability assumption, so that it can be used for further research and analysis.

## Inner Model Results

Testing of the structural model is carried out by looking at the value of the determination coefficient (R<sup>2</sup>) which is a goodness-of-fit model test. The value of the determination coefficient (R<sup>2</sup>) in the results of the PLS algorithm can be seen by selecting R-Square (Ghozali & Latan, 2015). The R<sup>2</sup> value is used to measure how much

endogenous variables are affected by other variables. The R<sup>2</sup> values are 0.67 (strong), 0.33 (moderate) and 0.19 (weak) (Ghozali, 2021). The following are the R<sup>2</sup> values in this study:

**Table 8.**  
**R-Square**

	R-Square	R-Square
<b>Customized Green Business Strategy</b>	<b>0.635</b>	<b>0.592</b>
<b>Green Innovation</b>	<b>0.631</b>	<b>0.603</b>

**Source: Data processed, 2024**

Based on the data in Table 4.16, it shows that the value of the coefficient of determination of green business strategy is 0.635, which means that the ability of the model of factors influencing the green business strategy is 63.5%. The value of the green innovation determination coefficient is 0.631, meaning that the ability of the model of factors affecting green innovation is 63.1%.

The goodness-fit model in PLS analysis can also be evaluated by looking at the percentage of variance described, namely by looking at the R<sup>2</sup> value for the endogenous latent variable using predictive-relevance (Q) which measures how well the observation value produced by the model and also the parameter estimation. A Q<sup>2</sup> value greater than zero (0) indicates that the model has predictive-relevance, while a Q<sup>2</sup> value smaller than zero (0) indicates that the model does not have predictive-relevance.

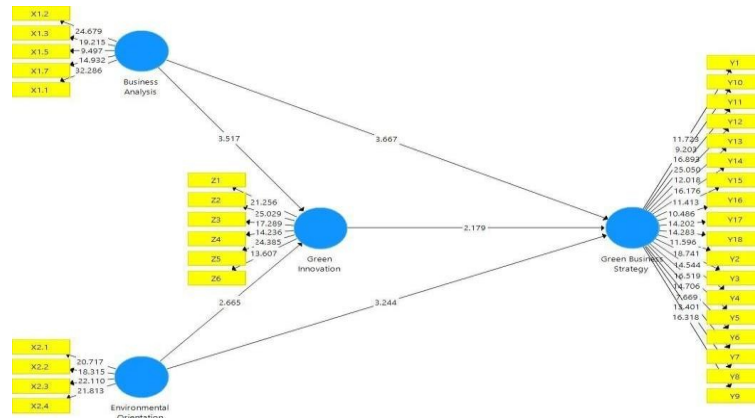
$$\begin{aligned}
 Q\text{-Square} &= 1 - [(1 - R_1^2) (1 - R_2^2)] \\
 &= 1 - [(1 - 0.635) (1 - 0.631)] \\
 &= 1 - 0.134 \\
 &= 0.866
 \end{aligned}$$

Based on the results of the calculation above, it can be seen that the entire model has a contribution of 86.6%. Based on these results, the model in this study can be stated to have good goodness-of-fit, which shows that the exogenous latent variable is feasible (good) as an explanatory variable that is able to predict endogenous variables.

## HYPOTHESIS TEST RESULTS

Hypothesis testing was carried out using *Partial Least Square (PLS)* to test whether there was an influence of each variable of business analysis and environmental orientation on green business strategy with green innovation as the mediating variable. The analysis was carried out using *SmartPLS 3.0 software*. Hypothesis testing in the study was carried out to test the influence of independent variables (X1 and X2) on dependent variables (Y) and the influence of independent variables (X1 and X2) on dependent variables (Y) mediated by mediating variables (Z). The relationship between latent constructs in this research model is seen from the path coefficient and its significance level (*p-value*). The level of significance (*p-value*) used in this study is sig α (0.05). The proposed hypothesis test was carried out by testing the structural model (*inner model*) by looking at the path coefficient that shows the parameter coefficient and t-statistical significance value. The significance of the estimated parameters provides very useful information to know the relationship between variables in the study. The hypothesis is accepted if the p-value < 0.05. The results of the *Smart PLS 3.0 bootstrapping* process can be seen in the Figure and Table.

**Figure 3. Bootstrapping Test Results**



## Results of Direct Hypothesis Testing

**Tabel 8.**  
**Hasil Pengujian Hipotesis Langsung**

	Asli Sampel (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	Statistik T ([O/STDEV])	Nilai P	Informasi
<b>Analisis Bisnis -&gt; Bisnis Hijau Strategi</b>	0.487	0.468	0.133	3.667	<b>0.000</b>	Diterima
<b>Analisis Bisnis -&gt; Bisnis Hijau Inovasi</b>	0.475	0.448	0.135	3.517	<b>0.000</b>	Diterima
<b>Orientasi Lingkungan -&gt; Bisnis Hijau Strategi</b>	0.275	0.280	0.085	3.244	<b>0.001</b>	Diterima
<b>Orientasi Lingkungan -&gt; Bisnis Hijau Inovasi</b>	0.275	0.292	0.103	2.665	<b>0.004</b>	Diterima
<b>Inovasi Hijau -&gt; Bisnis Hijau Strategi</b>	0.228	0.230	0.105	2.179	<b>0.015</b>	Diterima

**Source: Data processed, 2024**

Based on the results of the direct hypothesis test in Table 4.17, the interpretation of the test results can be carried out as follows:

a. Hypothesis Testing 1 Business Analysis Against Green Business Strategy

Based on Table 8. showed that the hypothesis that Business Analysis had a positive effect on the Green Business Strategy was accepted, indicated by a p-value of  $< 0.05$  (0.000). The original sample estimate value showed a positive value of 0.487 which showed that the direction of the influence of business analysis variables on green business strategy variables was positive, meaning that the better the influence of business analysis, namely in the form of processes carried out by SMEs to solve business problems, monitor and identify and look for new opportunities in the growth and development of environmentally friendly products, it will be able to improve green business strategies.

b. Hypothesis Testing 2: Business Analysis Towards Green Innovation

Based on Table 8. It shows that the hypothesis that business analysis has a positive effect on green innovation is accepted, which is indicated by a p-value of  $< 0.05$  (0.000). The original sample estimate value showed a positive value of 0.475 which showed that the direction of the influence of

business analysis variables on green innovation variables was positive, meaning that the better the influence of business analysis on the processes carried out by SMEs in identifying and assisting SMEs in understanding and navigating the dynamic business environment, it would be able to increase effective green innovation.

c. Hypothesis Testing 3: Environmental Orientation Towards Green Business Strategy

Based on Table 8. It shows that the hypothesis that environmental orientation has a positive effect on the green business strategy is accepted, which is indicated by a p-value < 0.05 (0.001). The original sample estimate value showed a positive value of 0.275 which showed that the direction of the influence of environmental orientation variables on green business strategy variables was positive, meaning that the better the influence of environmental orientation on the process as far as SMEs can recognize environmental problems, the better it will be in improving green business strategies.

d. Hypothesis 4 Testing: Environmental Orientation Towards Green Innovation

Based on Table 8. shows that the hypothesis that environmental orientation has a positive effect on green innovation is accepted, which is indicated by a p-value of < 0.05 (0.004). The original sample estimate value showed a positive value of 0.275 which showed that the direction of the influence of environmental orientation variables on the green innovation variable was positive, meaning that the better the influence of environmental orientation on the attitude of SMEs in overcoming environmental problems, the more green innovation will increase.

e. Hypothesis Testing 5: Green Innovation Towards Green Business Strategies

Based on Table 8. It shows that the hypothesis that green innovation has a positive effect on green business strategy is accepted, which is indicated by a p-value of < 0.05 (0.015). The original sample estimate value shows a positive value of 0.228 which indicates that the direction of the influence of the green innovation variable on the green business strategy variable is positive, meaning that the better the influence of green innovation in the process of the right environmental approach to improve environmental efficiency, environmental protection, waste management, as well as processes that do not harm environmental degradation, are environmentally friendly and increase natural resources, will be able to improve the green business strategy.

### Hasil Pengujian Hipotesis Tidak Langsung

**Tabel 9.**  
**Hasil Pengujian Hipotesis Tidak Langsung**

	Asli Sampel (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	Statistik T ( O/STDEV )	Nilai P	Informasi
<b>Analisis Bisnis</b>						
->		0.106	0.063	1.715	<b>0.044</b>	Diterima
<b>Inovasi Hijau -&gt; 0.108</b>						
<b>Strategi Bisnis Hijau</b>						
<b>Environmental Orientation -&gt;</b>						
<b>Green Innovation -&gt;</b>	0.163	0.168	0.049	1.680	<b>0.024</b>	Accepted
<b>Business Strategy</b>						
<b>Green</b>						

**Source: Data processed, 2024**

Based on the results of the indirect hypothesis testing in Table 9. then the interpretation of the test results can be carried out as follows:

a. Hypothesis Testing 6: Business Analysis of Green Business Strategy Mediated by Green Innovation

Based on Table 9, it shows that the hypothesis that business analysis has a positive effect on green business strategies mediated by green innovation is accepted, which is indicated by a p-value of < 0.05 (0.044). The original sample estimate value showed a positive value of 0.108 which showed that the

direction of the influence of business analysis variables on green business strategy variables mediated by green innovation was positive, meaning that green innovation was able to increase the influence of business analysis on green business strategy.

b. Hypothesis Testing 7: Environmental Orientation Towards Green Business Strategy Mediated by Green Innovation

Based on Table 9, it is shown that the hypothesis that environmental orientation has a positive effect on green business strategies mediated by green innovation is accepted, which is indicated by a p-value of  $< 0.05$  (0.024). The original sample estimate value showed a positive value of 0.163 which showed that the direction of the influence of environmental orientation variables on green business strategy variables mediated by green innovation was positive, meaning that green innovation was able to increase the influence of environmental orientation on green business strategy.

### **The Influence of Business Analysis on Green Business Strategy**

Based on the results of the analysis, it can be seen that the average respondent's assessment of business analysis variables is in the very high category. The distribution of respondents' answers to business analysis can be seen in the statement item which states that SMEs are able to predict the current situation by categorizing data into useful information in the development of environmentally friendly products, SMEs are able to characterize current data into useful information in the development of environmentally friendly products, besides that SMEs are also able to describe the current situation by classifying data into information that is useful in the development of environmentally friendly products. useful in the development of environmentally friendly products, and SMEs are able to predict revenue or sales results by using historical data to improve performance in the development of environmentally friendly products. The results of the descriptive analysis research show that business analysis in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City is considered very high in predicting, describing, and identifying the current situation into useful information in developing the business in order to be able to maximize overall performance efficiency by combining data and information in the development of environmentally friendly products.

The results of the hypothesis test of the influence of business analysis on green business strategy have been carried out with a coefficient result of 0.487 (positive) with a p-value of 0.000 which is less than 0.05 and a t-statistical value of 3.667 It can be seen that business analysis has a positive and significant effect on green business strategy. This means that the better the business analysis, the more green business strategy will also increase. According to Solehudin et al. (2024), business analysis is the foundation for understanding and managing the factors that affect the performance of SMEs, with business analysis SMEs can identify their strengths, understand their weaknesses and design strategies that can increase competitiveness. Business analysis can be said to support a strategic planning and decision-making process with data-driven knowledge (Phillips et al., 2021). This research is in line with previous research conducted by Kunc et al (2018) which stated that business analysis is a process carried out by SMEs to solve business problems, monitor and identify and look for new opportunities in the growth and development of environmentally friendly products.

### **The Influence of Business Analysis on Green Innovation**

Based on the results of the analysis, it can be seen that the average respondent's assessment of business analysis variables is in the very high category. The distribution of respondents' answers to the business analysis can be seen in the statement item which states that SMEs are able to identify or determine better alternatives by using historical data to improve the performance of SMEs in the development of environmentally friendly products, SMEs are able to maximize overall performance efficiency by combining data, history and information in the development of environmentally friendly products, SMEs are able to minimize performance risks in a timely manner. overall in the development of environmentally friendly products, and SMEs are able to improve overall performance in the development of environmentally friendly products. The results of the descriptive analysis research show that business analysis on SMEs that are members of the SiBakul Jogja platform in Yogyakarta City is considered very high in describing, characterizing, and monitoring the current situation into useful information in developing businesses to continue to exist and excel in a competitive market. The hypothesis test of the influence of business analysis on green innovation has been carried out with a coefficient result of 0.475 (positive) with a p-value of 0.000, which is less than 0.05 and a t-statistical value of 3.517, it can be found that business analysis has a positive and significant effect on green innovation.

This means that the better the business analysis, the more green innovation will increase. According to Porter (1980), business analysis is a strategic approach that cannot be avoided for every SME. In developing a business, understanding competitors, customers and the environment is very important. In other words, business analysis aims to help SMEs plan the right steps to increase competitiveness and encourage sustainable business activities in the long term. This research is in line with previous research conducted by Zameer et al (2022) which stated that business analysis has a positive and significant effect on green innovation, with good business analysis results can support companies in determining concepts and make a great contribution to the company's economic and social development.

### **The Influence of Environmental Orientation on Green Business Strategy**

Based on the results of the analysis, it can be seen that the average assessment of respondents on environmental orientation variables is in the high category. These results show that environmental orientation has a role as a consideration for improving green business strategies for SMEs. This, of course, must be maintained and even improved, in order to obtain a better green business strategy for SMEs. The hypothesis test of the influence of environmental orientation on green business strategy has been carried out with a coefficient of 0.275 (positive) with a p-value of 0.001, which is less than 0.05 and a t-statistical value of 3.244, it can be found that environmental orientation has a positive and significant effect on green business strategy. This means that the better the environmental orientation of SMEs, the more they will improve their green business strategy.

According to Chaven et al (2021), environmental orientation is part of the beliefs or strategic values of SMEs by including environmental concern as an important part of strategic planning. Environmental orientation is in the form of values, visions, missions and commitments that SMEs have to environmental protection. Environmental orientation provides a basis for SMEs to be involved in adopting a green strategy in accordance with the demands of stakeholders including customers, as well as suppliers. In response to stakeholder encouragement and demands, SMEs must adopt strategies that are stakeholder demands (Majid et al., 2019). It can be concluded that environmental orientation serves as an important prerequisite for designing and developing a green business strategy as a form of environmental protection (Arief, 2022). This research is in line with previous research conducted by Yasir et al., (2020) which stated that environmental orientation has a positive effect on green business strategy, with strong environmental orientation results in companies will play an important role in improving environmentally friendly practices.

### **The Influence of Environmental Orientation on Green Innovation**

Based on the results of the analysis, it can be seen that the average assessment of respondents on environmental orientation variables is in the high category. The distribution of respondents' answers to environmental orientation can be seen in the statement item which states that one of the main values of SMEs is environmental conservation, SMEs' commitment to the importance of environmental preservation and SMEs' sense of responsibility to preserve the environment. The results of the descriptive analysis research show that the environmental orientation in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City is considered high in interpreting the extent to which SMEs can recognize environmental problems and attitudes to overcome environmental problems.

The hypothesis test of the influence of environmental orientation on green innovation has been carried out with a coefficient result of 0.275 (positive) with a p-value of 0.004, which is less than 0.05 and a t-statistical value of 2.665, it can be seen that environmental orientation has a positive and significant effect on green innovation. This means that the better the environmental orientation, the more green innovation will also increase. According to Chan et al (2012), environmental orientation is a valuable intangible resource that can inspire SMEs to improve environmental performance. Environmental orientation is the process to which the owner or manager of SMEs recognizes the importance of environmental problems. This research is in line with previous research conducted by Yu & Huo (2018) which stated that environmental orientation has a positive and significant effect on green innovation, with strong environmental orientation results can support the implementation of green management practices that are not only beneficial to the environment but also support better SME performance.

### **The Influence of Green Innovation on Green Business Strategy**

Based on the results of the analysis, it can be seen that the average respondent's assessment of the green innovation variable is in the high category. The distribution of respondents' answers to green innovation can be

seen in the statement item which states that SMEs use environmentally friendly raw materials in product development, SMEs carry out raw material efficiency for the production process in product development, evaluate that the product is easy to reuse, recycle and decompose, and recycle waste and emissions that allow it to be processed and reused. The results of the descriptive analysis research show that green innovation in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City is highly rated in measuring the extent of incorporating environmental actions in product development and includes the extent of applying environmental actions to the SME process in making changes to produce products in a way that can reduce negative impacts on the environment. The hypothesis test of the influence of green innovation on green business strategy has been carried out with a coefficient result of 0.228 (positive) with a p-value of 0.015, which is less than 0.05 and a t-statistical value of 2.179, it can be found that green innovation has a positive and significant effect on green business strategy. This means that the better the green innovation, the more it improves the green business strategy.

According to Chen et al (2006), green innovation can be used as the right environmental approach to improve environmental efficiency, environmental protection and waste management. Green innovation is services, products and processes that do not harm environmental degradation, are environmentally friendly and increase natural resources (Huang & Li, 2017). Green innovation is a mechanism that can minimize pollution and reduce environmental impacts that can harm SMEs (Wong et al., 2013). This research is in line with previous research conducted by Irfan et al (2023) which stated that green innovation is an environmentally friendly product and process innovation carried out by SMEs in order to reduce the impact of their business processes on the environment and show the extent to which their green products or processes compete in the market as a result of SMEs that reduce the overall environmental impact (green business strategy).

### **Green Innovation Mediates the Influence of Business Analysis on Green Business Strategy**

The results of the tests that have been carried out can be seen that green innovation has succeeded in mediating the influence of business analysis on green business strategy, which can be seen from the level of significance. From the hypothesis test, a p-value of 0.044 was obtained, which was less than 0.05 and a t-statistical value of 1.715. The coefficient value shows that the direction of the relationship between variables has a positive value of 0.108. This means that business analysis will improve green business strategy when green innovation is high, which means that green innovation can strengthen the influence of business analysis on green business strategy. High green innovation can certainly increase the value of SMEs, SME owners or managers who are able to analyze and utilize data effectively to encourage innovation will be better prepared to face sustainability challenges and achieve a competitive advantage in a market that is increasingly concerned about environmental issues, through the data analyzed will certainly allow SME owners or managers to make better decisions regarding green business strategies.

Kuo & Chen (2016) said that with green innovation, waste can be reduced and recycled and the energy used can be more efficient, SMEs can also achieve higher profits with lower environmental impact because the finished product contains more natural ingredients and is processed without toxic substances. Green innovation also refers to various innovations that allow the reduction of adverse impacts on the environment so as to provide great opportunities for SMEs to achieve environmental performance targets and benefits (Wong et al., 2013). This research supports Irfan et al. (2023) who stated that basically business analysis provides a strong foundation for formulating green innovation, which in turn can provide a clear direction to encourage green business strategy. Research by Zameer et al., (2020) which states that business analysis has a positive effect on green innovation. Thus, when business analysis increases, it affects green innovation, green innovation increases, it will have a positive effect on green business strategy. The results of this research show that green innovation is able to mediate business analysis against green business strategy.

### **Green Innovation Mediates the Influence of Environmental Orientation on Green Business Strategy**

Based on the results of the tests that have been carried out, it can be seen that the green innovation variable has succeeded in reducing the influence of the environmental orientation variable on the green business strategy. The hypothesis test obtained a p-value of 0.024, which is less than 0.05, a t-statistical value of 1.680 and a positive coefficient value of 0.163. This explains that environmental orientation will improve green business strategy when green innovation is high, which means that green innovation can strengthen the influence of environmental orientation on green business strategy. With green innovation, be it from product redesign such as choosing

environmentally friendly raw materials, using energy-efficient raw materials, and implementing raw material efficiency, applying recyclable raw materials and processes by reducing emissions and hazardous waste, of course, will be able to increase higher value for their business products with environmentally friendly features so that they can increase income for SMEs. According to Tjahjadi et al (2020), green innovation is the process of the right environmental approach to improve environmental efficiency, environmental protection, and waste management. The results of this study support the research of Zameer et al., (2020) which stated that environmental orientation has a positive effect on green innovation. Research by Dewi et al., (2020) states that green innovation has a positive effect on green business strategy. Thus, when environmental orientation increases, it affects green innovation, green innovation increases, it will have a positive effect on green business strategy. The results of this research show that green innovation is able to mediate environmental orientation towards green business strategy.

## CONCLUSION

Based on the results of the data analysis, it can be concluded that business analysis has a positive and significant effect on green business strategies and green innovations in SMEs that are members of the SiBakul Jogja platform in Yogyakarta City. Likewise, environmental orientation also has a positive and significant effect on green business strategies and green innovation. In addition, green innovation has been proven to have a positive and significant effect on green business strategies and mediates the relationship between business analysis and environmental orientation to green business strategies. Therefore, it is recommended that owners or managers maintain and improve green business strategies by paying attention to aspects of business analysis, environmental orientation, and green innovation. By focusing on these three things, SMEs will be better able to identify market trends and optimize sustainable business strategies, ultimately increasing revenue and business sustainability.

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