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The 'how' for sustainability: Answering market pressure through green strategy and green production

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Abstract

Research aims: This study aims to examine the influence of market pressure on green strategy and green production while also looking at its impact on MSMEs' sustainability. The authors also investigate the indirect influence of market pressure on green production through the mediating role of green strategy.

Design/Methodology/Approach: This study was carried out on batik craft, fashion, and convection MSMEs oriented to the green concept in West Java Province, with a number of samples of 185 MSMEs. The data obtained were then analyzed using the structural equation modeling technique with SmartPLS software.

Research findings: The results of this study demonstrated the positive influence of market pressure on green strategy and green production, and both influenced MSMEs' sustainability. Furthermore, green strategy has been proven to have a positive influence on green production and could mediate the influence of market pressure on green production.

Theoretical Contribution/Originality: This study contributes to the literature by widening the antecedent of green strategy, green production, and MSMEs sustainability from the external side, namely market pressure, which is rarely elaborated.

Practitioners/Policy Implications: Managers and owners of batik craft, fashion, and convection MSMEs must prepare themselves to answer the calls for sustainability that come from their stakeholders, such as the market and government. Green strategy and green production must be incorporated into their business to achieve sustainability.

Research Limitations/Implications: This study has not yet considered the existence of moderating variables, such as firm size, government regulation, or organizational competitiveness. These additional variables can be a sign for firms to understand when the time is to implement their strategy to achieve sustainability according to the underlying conditions of the moderators.

Keywords: Market Pressure; Green Strategy; Green Production; MSMEs; Sustainability

Introduction

The condition of environmental degradation that has occurred in the last several years has emerged the need for special attention from various parties to take part in environmental preservation, including actively participating in promoting pro-environmental activities (Arocena et al., 2021; Gong et al., 2019). Consumers, as one of the primary stakeholders of a business, are

starting to have their preferences for a product or service they consume, such as environmentally friendly products (Chung, 2020). A survey of "Who Cares, Who Does" in 2021 revealed that people in Indonesia, particularly Generation Z and Millennials, had more concerns about environmental issues when purchasing products or services. The survey indicates that 58% of the participants were willing to invest their time and cost to support firms that did good deeds towards the environment, and 53% of them had stopped buying products or services that had a negative impact on the environment (Nariswari, 2022). Furthermore, the actions from competitors directed at environmental awareness can also be a condition that requires firms to adopt environmental management practices (Adomako et al., 2021; Petera et al., 2021). These preferences and actions from both consumers and competitors somehow force firms to reshape their strategies to carry out more environmentally friendly and sustainable practices.

To respond to market demand and pressure, firms are starting to develop an environmental-based strategy, which is often called an environmental strategy or green strategy, in their business. The application of this strategy can provide numerous positive influences for the organization, such as reduced operational costs, circular utilization of waste, and gaining a new position in the market (Dai et al., 2018). Firms also implement green strategies to maintain their relevance within a volatile business environment, as well as employing them as a way to win the competition (Geng et al., 2017).

Aside from green strategy, another aspect that is developing and starting to be implemented in organizations is green production. Simply put, green production is a process run by firms to reduce the negative impact on the environment using recyclable materials and reduction of pollution sources (Zameer et al., 2020). The practice of green production and green strategy implemented by firms is carried out to answer the pressure from the market, as well as to pave the way for firms to achieve sustainability. Since 1993, the concept of sustainability has been introduced (Elkington, 2018; Abbas & Sağsan, 2019) with the term 'triple bottom line' (TBL), which consists of three aspects, namely people, planet, and profit (3P). In this regard, sustainability can be achieved by firms when they have balanced financial, environmental, and social performance (Imbrogiano & Nichols, 2021; Wong & Ngai, 2021).

Alongside its practice in the business world, environmental issues have also become an interesting topic in the last decade (Johnson & Schaltegger, 2016). Nevertheless, several gaps exist, as most of the literature discussing the implementation of green strategy and green production to achieve sustainability has been carried out in the context of large companies, while MSMEs receive less attention (Boiral et al., 2019; Singh et al., 2020).

In Indonesia, MSMEs become one of the main contributors to the country's economy. This occurs as MSMEs can act more agile and flexible compared to large organizations. In this study, the authors focus on Batik MSMEs, as they contribute to the GDP in Indonesia (Hutabarat, 2021). However, during the pandemic, it experienced certain conditions as some of the MSMEs had to close their business, and the number of batik artisans decreased (Maulana, 2021). Before the pandemic occurred, as a part of the fashion industry, Batik MSMEs in Indonesia took part to contribute 41.4% to the GDP. Within the

current environmentally-woke generation, the business practiced by Batik MSMEs has also started to become the concern of various parties. Most of the environmental problems faced by Batik MSMEs lie in their production process and waste management, as there are still cases or conditions in which the practice of production and business activities of MSMEs has a detrimental impact on the environment. One of the cases is the pollution of synthetic dye waste from batik MSMEs in Pekalongan, Central Java (Bernadi, 2022; Utami, 2022), which pollute the river and residents' well, causing the water to change color (Utami, 2022). This becomes one of the issues that must be handled and overcome by Batik MSMEs in carrying out their business. Based on this phenomenon, environmental-oriented MSMEs with production in batik craft, fashion, and convection are specifically chosen as an object of this research. The orientation to the environment from these MSMEs is seen from the use of natural dye for handicrafts and batik cloth or fabric products, as well as their waste management.

In addition, in their research, Dai et al. (2018) mentioned that the impact of market pressure on green strategy implementation is still lacking. Regarding green production, Huang et al. (2016) and Zameer et al. (2020) stated that most of the research in this line of topic is focused on exploring the driving factors, but the results are still inconclusive. In the realm of green strategy and green production, there is also a significant research gap. Although it is widely recognized that green strategies are integral to environmentally sustainable production, the exact relationship and mechanisms between the two are not well-defined, emerging the concept of green production. Existing research has also indicated that green strategies are often linked to the adoption of green production practices (Imbrogiano & Nichols, 2021; Saether et al., 2021), but the different context and intricacies of this connection remain insufficiently explored (Olayeni et al., 2021; Baah et al., 2021).

This study considers how the pressure from the market environment influences the implementation of strategy and production processes in MSMEs in Indonesia, which then direct them to achieve sustainability. Therefore, stakeholder theory (Freeman, 1984; Freeman et al., 2010) was used as the major theory to explain the relationship between variables while also becoming the basis for further research. According to this theory, managers or leaders in an organization must design a specific process to manage the expectations of the stakeholders. As one of the main stakeholders for business, the awareness and values held by the parties within the market environment will encourage firms to change the strategy they have implemented.

Based on this explanation, this study aims to bridge the gap in the literature regarding the aspects motivating the organization to implement green strategy and green production, which can direct it to business sustainability. Specifically, the authors examine the influence of market pressure on MSME sustainability through the mediating role of green strategy and green production. Green strategy and green production become the process run by MSMEs to answer the pressure from consumers, suppliers, and competitors. This study provides recommendations for practitioners to increase sustainability in their business through green production and green strategy as a response to market pressure. Theoretically, the conclusion of this study can also become the basis for future research

to consider both internal and external factors to improve business sustainability, especially in the context of MSMEs.

Literature Review and Hypotheses Development

Stakeholder Theory

Freeman et al. (2010) stated that stakeholder theory mostly discusses strategic management as an alternative that can improve organizational performance. This theory put forward that managers are required to design specific processes to manage the expectations of the stakeholder, which are also based on the concerns about the fluctuations and change within the environment that has not yet occurred before (Freeman, 1984). In this case, stakeholders are defined as individuals or groups that can influence or be influenced by the action, decision, policy, practice, or goals of the organization (Freeman, 1984).

According to Jackson & Schuler (2017), the most effective organization to manage its business is the one that can meet the needs of its stakeholders. Freeman et al. (2010) mentioned a number of important points in this theory. First, the organization needs to calculate the influence of its actions on other parties and the influence of other parties on the organization. To understand this, the organization needs to understand the behavior, values, and background of its stakeholders. Furthermore, an organization needs to understand the relationship of the stakeholder from three levels of analysis, namely, organization as a whole, process approach, and transactional approach. This will be able to assist the organization in thinking about the structure, process, business process, and strategic planning process by involving the expectations of the stakeholders (Freeman et al., 2010).

In stakeholder theory, the main implication is that "stakeholder is about business, and business is about stakeholder" (Freeman et al., 2010). The organization's ability to produce sustainable profit in the long term is determined by its relationship with the stakeholders (Post et al., 2002). In this study, stakeholder theory was employed to elaborate the relationship between market pressure, green strategy, green production, and MSMEs sustainability. The markets, including consumers, suppliers, and competitors within, are stakeholders that can bring an impact to how organizations run their businesses. This will eventually require firms to formulate business strategies directed to sustainability, which aims to achieve a balance between financial, social, and environmental performance.

Natural Resource-Based View Theory

The natural resource-based view (RBV) theory is an extension of the traditional resource-based view (RBV) of the firm. The traditional RBV has been known as a strategic management framework that focuses on a firm's internal resources and capabilities as sources of competitive advantage (Barney, 1991). It asserts that firms can gain a

sustainable competitive advantage by acquiring and deploying unique and valuable resources that are difficult for competitors to imitate or replicate (Barney, 1991; Barney et al., 2001). However, as the awareness of the environment started to emerge, the natural RBV theory was posited by Hart (1995). The natural RBV (NRBV) theory, also known as the environmental RBV or ecological RBV, extends the concept of RBV to include natural resources and environmental sustainability as critical components of a firm's resource base. This theory views ecological responsibility as an opportunity for firms to gain a competitive advantage, enhance their reputation, and contribute to a more sustainable future (Hart, 1995; Hart & Dowell, 2011).

According to Hart (1995), the NRBV theory recognizes that natural resources, such as renewable and non-renewable resources, ecosystems, and environmental attributes, can be essential strategic assets for a firm. These resources are seen as valuable inputs that can contribute to a firm's competitive advantage. Furthermore, this theory emphasizes the importance of sustainable management of natural resources and ecosystems. Firms that adopt environmentally sustainable practices can not only reduce costs but also create a positive brand image and meet regulatory requirements, which can lead to a competitive edge (Mishra & Yadav, 2021).

This theory also recognizes that firms need to engage with various stakeholders, including customers, suppliers, regulators, and environmental organizations, to manage natural resources responsibly and ensure sustainable practices (Andersen, 2021). The main point of NRBV is the need for firms to integrate environmental considerations into their overall business strategy and that it promotes a long-term perspective on resource management. It also highlights that the depletion or degradation of natural resources can have a detrimental impact on a firm's competitiveness in the long run (Hart, 1995; Hart & Dowell, 2011).

Market Pressure and Green Strategy

Consumers, suppliers, and competitors are in the market mechanism that is most closely related to the production and business organization. The concerns of the organization towards the environment can influence the formulation of the organization's strategy. The pressure from the market (consumers, suppliers, and competitors) can also influence organizations, especially in their ways to achieve sustainable performance. With the increasing awareness of the environment, consumers are more inclined to choose to purchase environmentally friendly products, whether it is the raw material used or the production process to the innovation (Li et al., 2020), thus being able to create a green image for the organization. According to Baah et al. (2021) and Huang et al. (2016), the market environment comes from the stakeholders, which include consumers, suppliers, and competitors.

Organizations are currently required to have environmental awareness to widen the market opportunities in meeting consumer needs (Dai et al., 2018). Business organizations, aside from consumers, are also dependent on suppliers. This is because suppliers have a significant contribution to strategy formulation and production to

achieve organizational sustainability. When suppliers desire an environmentally friendly product, the organization must adjust its strategy to meet those needs. Wang et al. (2020) stated that when the demand cannot be fulfilled, suppliers have the right to stop their suppliers.

Furthermore, other aspects of the market environment are the competitors. The competitors can cause environmental pressure on the organization during the competition process. When competitors offer innovative green products, it will lead to support from the consumers and the government. To win a competitive advantage in the market and resources, organizations will surely follow their competitor to develop their green strategy (Hojnik & Ruzzier, 2016; Menguc et al., 2010). Within the framework of stakeholder theory (Freeman, 1984; 2010), the market as a stakeholder can drive firms to align their business strategies or practice with their expectation, leading the firms or MSMEs themselves to carry out green strategy in their business.

A study by Dai et al. (2018) indicated that market pressure becomes the basis and reason for firms to implement environmental or green strategies. It aligns with the previous study carried out by Roscoe et al. (2019), who mentioned that the existence of stakeholder pressure causes firms to initiate to apply GHRM in their business strategies. Based on this explanation, the hypothesis proposed is as follows:

H₁: Market pressure is positively related to green strategy.

Market Pressure and Green Production

In the external environment, especially the market environment, consumers hold an important role as a primary stakeholder in affecting firms to implement environmental strategy proactively. So far, the pressure from stakeholders has been proven to drive firms to manage their business by being more environmentally friendly, such as by implementing environmental management within them (Dai et al., 2018). Consumers, as the external stakeholders of firms, can be the basis for the selection and adoption of the firm's business practices. In this regard, Yasmeeen et al. (2019) and Zameer et al. (2020) mentioned that the environmentally oriented production process is strongly affected by consumers, suppliers, and other parties with specific concerns for the environment.

For manufacturing firms, the adoption of green production practices will strongly affect the business operation. This is due to the fact that green production is closely related to the firms' behavior for being responsible for the environmental condition (Braga Junior et al., 2018; Famiyeh et al., 2018). Green production is a process aimed at reducing the negative impact of firms on the environment through the planning of product life cycle, production or manufacturing process, and waste disposal (Huang et al., 2016; Zameer et al., 2020). These pressures from numerous parties in the market environment, which involve consumers, suppliers, and competitors, are crucial to be responded to by firms. The reason for this condition is that consumers and suppliers can leave the firms if they feel that their needs or demands are not met, and they perceive that the firms do not

hold similar value with them anymore. In addition, competitors, which also have an awareness of environmental issues, also conduct pro-environmental practices in their businesses; thus, it becomes a condition that will also motivate firms. It is consistent with the notion from stakeholder theory that managers are required to design specific processes to manage the expectations of the stakeholders (Freeman, 1984). In this study, the pressures from the market as external stakeholders force firms to reshape their strategies to a more environmental practice to manage stakeholders' expectations. According to this explanation, the hypothesis put forward is as follows:

H₂: Market pressure is positively related to green production.

Green Strategy and Green Production

The existence of an effectively implemented green strategy in organizations will enable them to follow it by applying green production practices. Green strategy, also known by the term environmental strategy, refers to a set of strategic planning aimed at mitigating the impact of organizational activities on the environment (Dowell & Muthulingam, 2017; Wang et al., 2020). This strategy specifically directs firms to reduce their pollution and increase their environmental capability, both owned by individuals and firms. Kong and Li (2018) and Kraus et al. (2020) asserted that a strategy planned by firms will drive the firm itself to run pro-environmental practices in its business activities, including in the relationship context of green strategy and green production.

Green production is currently becoming a necessity to implement, considering the excessive consumption of resources and the occurrence of environmental problems (Zailani et al., 2015; Zameer et al., 2020). Firms that apply green strategy will run business practices that are fit to the strategy they have chosen (strategic fit). These firms will have more ease in choosing and developing a business practice that is environmentally oriented, such as green production, since they have the capability and resources coming from green strategy practices (Dowell & Muthulingam, 2017). According to Famiyeh et al. (2018), green production is related to the concern of firms toward the environment, which is indicated in the production process and providing green products for consumers and communities in general. This is done to meet the needs of the community, obtain profits, and reduce the negative impacts of firms' activities on the environment itself.

Hart (1995) and Hart and Dowell (2011) mentioned that NRBV suggests that firms possess unique and valuable natural resources, which must be integrated with environmental concerns. Green strategy involves recognizing and leveraging these resources effectively. Through the lens of NRBV, green strategy acts as the firms' internal and initial resources expected to lead to green production practices. Based on this explanation, the hypothesis derived is:

H₃: Green strategy is positively related to green production.

Green Strategy and MSMEs Sustainability

Firms will ensure the integration between their external and internal resources in their business specified to the environmental protection as an initial step for starting green strategy practices (Wang et al., 2020). According to Foustieris et al. (2018), green strategy or environmental strategy refers to innovative, preventive, and efficient practices towards the environment. Green strategies implemented by firms or organizations will assist them in achieving business sustainability. In this regard, Asadi et al. (2020) mentioned that the sustainability of a business is reflected in the strategy adoption and activities they carried out, including the green strategy. This strategy must be oriented to protect, maintain, and improve the environmental and social conditions for the future (Isensee et al., 2020; Li et al., 2020). Sustainability itself has three dimensions that are closely related and are all significant, i.e., environmental, social, and economic or financial performance (Abbas & Sağsan, 2019; Wijethilake, 2017).

A number of studies examining the influence of green strategy on sustainability have been carried out, and the results indicated significant value. Petera et al. (2021) conducted a study on the senior manager of large and medium enterprises in two countries in Europe and uncovered that the green strategy applied by firms could improve their financial and environmental performance. In the study from Solovida and Latan (2017), firms with environmental strategies are also seen to have better environmental performance compared to other firms without the strategy. In addition, Olayeni et al. (2021) and Adomako et al. (2021) proved the positive influence of green strategy and environmental strategy on environmental, social, and financial performance, which are the three pillars of sustainability. It corroborates with the framework in NRBV (Hart, 1995), positing that firms that develop and implement green strategies can gain a sustainable competitive advantage by efficiently using natural resources and reducing environmental impacts in their production processes. From this explanation, the hypothesis suggested is as follows:

H₄: Green strategy is positively related to MSMEs sustainability.

Green Production and MSMEs Sustainability

Sustainability has the main objective commonly known as the term triple bottom line, namely maintaining the balance of environment, community, and economy within business activities that firms run (Asadi et al., 2017; Nilashi et al., 2019). This environmental aspect is related to the firm's ability to protect the natural environment, reduce the excessive consumption of resources, and ensure the manufacturing of green or environmentally friendly products (Lau & Chen, 2022; Wong & Ngai, 2021). The social aspect is associated with establishing relationships with the communities and increasing their welfare. Furthermore, the financial aspect is linked to the firm performance to increase profit, product selling, and reduce operational costs (Asadi et al., 2017; 2020). Specifically, one of the ways to achieve sustainability for business is by adopting green production, which is believed to drive firms to carry out sustainable development (Zameer et al., 2020).

Green production is initially aimed to protect the environment from the business activities of firms that lack responsibility, but it eventually gains its strategic position as an alternative to achieve sustainability. The achievement of triple bottom line aspects of sustainability can be maximized through numerous practices in green production, such as eco-labeling, which can improve consumers' awareness of green products and gain consumer segments with environmentally oriented mindset (Famiyeh et al., 2018; Huang et al., 2016). Firms that implement green production also actively increase their capability to innovate and always look for the best alternative to produce their products and service that is oriented towards the environment. When this is done continuously, firms will be able to obtain sustainability, indicated by the existence of better business, social, and environmental performance. In line with the notion of NRBV theory, firms possess unique and valuable resources and capabilities, which must be integrated with the environment, including green production. The existence of these valuable and inimitable resources or capabilities will allow firms to gain sustainable competitive advantage, which arises from their abilities to use natural resources efficiently, reduce environmental impact, and meet growing consumer demand for eco-friendly products. From this explanation, the hypothesis offered is as follows:

H₅: Green production is positively related to MSMEs' sustainability.

The Mediating Role of Green Strategy

To achieve sustainability, there is a need for a strategic shift, which was initially oriented only to profit, to become wider with the additional orientation to the social and environmental aspects (Petera et al., 2021; Saether et al., 2021). Firms can initiate this orientation by implementing green strategy practice, which refers to innovative, preventive, and efficient practices and policies that are environmentally oriented (Fousteris et al., 2018; Kraus et al., 2020). Green strategy is also seen as the extent to which environmental issues are integrated into the firm's strategy (Saether et al., 2021). The study by Chen et al. (2018) and Wang et al. (2020) asserted that market pressure affects the strategy selection of firms in conducting their business. This strategy that firms finally choose will be reflected in the planning, process, targets, and reports designed by firms. This pressure comes from several parties in the market environment, such as competitors, consumers, and suppliers.

Consumers will prefer other firms that first adopt an environmental-based strategy as a new alternative, especially the ones with deeper concerns for the environment (Dowell & Muthulingam, 2017). On the other hand, the preferences and values held by consumers and suppliers also affect their behaviors or attitudes towards the firms, which are also related to their decision to purchase or not purchase certain products or services from the firms (Chen et al., 2018). Green strategy implementation carried out by firms as a response to market pressure is deemed as an essential factor that can increase the firm performance, including their financial, social, and environmental performance (Kraus et al., 2020; Petera et al., 2021). This is because firms that practice green strategy will voluntarily be willing to reduce the emissions and pollution from their pre or

postproduction processes (Solovida & Latan, 2017) while also directing their use of resources for improving firm performance and achieving sustainability. Therefore, green strategy is considered capable of explaining the relationship between market pressure and MSMEs sustainability. As such, the following hypothesis is recommended:

H₆: Market pressure indirectly influences MSMEs' sustainability through green strategy.

The Mediating Role of Green Production

Market pressure will also motivate firms to carry out green-based production processes by considering the environmental, social, and financial aspects that are useful for the continuity of the firms. In this case, green production implemented by firms is a form of response to the pressure they perceive from various stakeholders, including the market (Davenport et al., 2019; Guerrero-Villegas et al., 2018). The degradation of the condition and quality of the social environment also forces firms to leave the business practices that cause the problems and adopt other concepts or practices directed to sustainability for business, such as green production.

Green production can be an alternative utilized by firms to reduce the risks for business activities, production processes, and the products/services they offer to the environment (Zameer et al., 2020). Firms that fail to respond to the demand from the market to create products and run production processes based on the environment will experience decreased sales, decreased market sales, as well as sales and profit losses. These are signs of poor financial conditions, while they also can be seen as indications that firms do not pay attention to the environmental aspects of running their business and, as a result, have decreased environmental performance. The decline in financial and environmental performance denotes that firms fail to achieve sustainability. On the contrary, firms that seriously consider the demands of their external stakeholders, such as consumers and suppliers, to understand better challenges in the environment will be more likely to achieve sustainability. It is consistent with the study from Famiyeh et al. (2018) and Shubham et al. (2018). Moreover, green production is useful for forming a green image for firms and increasing their sustainability. In their study, Zameer et al. (2020) proved that green production is a significant factor in determining firms' competitive advantage.

H₇: Market pressure indirectly influences MSMEs' sustainability through green production.

Research Methods

This study was carried out using a quantitative approach, with the research object determined based on geographical area, namely in West Java, Indonesia. West Java is the province of Indonesia with the largest population and has the development of MSMEs, whose number continues to increase from year to year (Open Data Jabar, 2021). This province was also chosen, considering the high demand from various parties in West Java to start paying attention to environmental issues such as waste pollution (Prambadi,

2023). This study specifically targeted MSMEs in West Java engaged in the environmentally oriented business of batik craft, convection, and fashion. MSMEs that run this business carry out production processes related to the environment and the resources used for waste management; thus, these are in accordance with the context of the study being carried out.

From this population, this study used purposive sampling to determine respondents, with the criteria that these MSMEs had been operating for at least two years, to assure that the MSMEs are sustained enough to run their business even during the pandemic and were included in three defined business fields: craft, convection, and batik fashion. From these criteria, this study obtained a total sample of 185 SMEs, which is considered an adequate number for research with the SEM-PLS technique (Hair et al., 2022). Then, research data collection was carried out for three months, starting from August to October, with a survey method. For research flexibility, MSME owners or managers were asked to take online surveys and fill out questionnaires through the Google Forms platform. Each item in this questionnaire was assessed using a 5-point Likert scale, with point 1 describing 'strongly disagree' to point 5 representing 'strongly agree'. The data obtained were then analyzed using Structural Equation Modeling with SmartPLS. SEM is a widely used statistical method and a powerful analytical technique that allows researchers to examine complex relationships among variables (Hair et al., 2022).

Furthermore, market pressure was measured using four items adopted from Tang and Tang (2012), Wang et al. (2020), and Zameer et al. (2020). Green strategy was determined using five items adopted from Anton et al. (2004), Darnall et al. (2010), and Saether et al. (2021). Meanwhile, green production was assessed using four items adopted from Chan et al. (2016) and Zameer et al. (2020). Finally, MSMEs' sustainability was evaluated using fifteen items from the study of Asadi et al. (2020).

Results and Discussion

Respondents' Characteristics

The owners and managers of batik craft, convection, and fashion MSMEs were asked to fill out the questionnaire regarding their firm characteristics. Based on the data obtained, most respondents run a business of batik craft, convection, and fashion as a whole (78%). They created batik crafts, such as handbags with batik motifs, purses, and souvenirs, while also producing batik clothes in large orders and providing batik fashion products for different market segments. Furthermore, most firms had been established for 5-7 years, as many as 52 MSMEs (28%). Based on the number of employees, most of them had 11-20 employees in their business.

Table 1 Respondents' Characteristics

Description	Frequency	Percentage
Firm Type		
Batik Craft	32	17%
Batik Convection	25	14%
Batik Fashion	50	27%
Mix (Batik craft, convection, and fashion)	78	42%
Firm Age		
2-4 years	39	22%
5-7 years	52	28%
8-10 years	46	26%
> 10 years	43	24%
Number of Employees		
<10 employees	67	36%
11-20 employees	89	48%
>20 employees	29	16%

Outer Model Evaluation

The measurements of outer loadings, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability served to determine whether the indicators on the latent variables in the study met the validity and reliability requirements. Checking whether an indicator is valid in measuring its latent variables can be seen in the values of outer loadings and Average Variance Extracted, while reliability was measured in Cronbach's Alpha and Composite Reliability parameters. If the value of outer loadings and AVE is more than 0.50, it can be said to be valid (Hair et al., 2022). Besides, if Cronbach's Alpha and Composite Reliability have a value greater than 0.700, the indicator can be said to be reliable. In Table 2, the details of the measurement of each parameter can be seen. From Table 2, it is also known that all parameters met the acceptance criteria.

Table 2 Validity and Reliability of Item Measurement

Variable	Indicator	Outer Loading	AVE	CA	CR
Business (MSMES) Sustainability (Asadi et al., 2020)	The company I work for sells waste products for income.	0.779	0.588	0.917	0.931
	The company I work for reduces input costs for the same level of output.	0.751			
	The company I work for reduces costs for waste management for the same level of output.	0.739			
	The company where I work collaborates with the government to protect the company's interests.	0.750			
	The company I work for created a technology spin-off that could be profitable if applied to other business areas.	0.792			
	The company where I work prioritizes the safety and health of employees and the public.	0.801			
	The company I work for recognizes and acts on the need for local community initiatives.	0.824			
	The company I work for protects the claims and rights of local communities.	0.742			
	The company I work for pays attention to the visual aspects of the company's operations and facilities.	0.779			
	The company I work for communicates the company's environmental impacts and risks to society.	0.729			
	The company I work for reduces energy consumption.	0.766			
	The company I work for reduces waste and emissions from operational activities.	0.775			
	The company I work for reduces its impact on animals and natural habitats.	0.721			
	The company I work for reduces the environmental impact of its products/services.	0.765			
	The company I work for reduces its environmental impact by establishing partnerships.	0.779			
Green Production (Zameer et al., 2020; Chan et al., 2016)	Our company uses raw materials that do not cause pollution, do not contain toxins, and are environmentally friendly.	0.823	0.533	0.851	0.888
	Our company uses raw materials that can be recycled, reused, and decomposed.	0.700			
	Our company improves product life cycles and recycles.	0.780			
	Our company uses eco-labeling.	0.751			
Green Strategy (Darnall et al., 2010; Saether et al., 2021)	Our company has environmental procedures.	0.776	0.661	0.870	0.906
	Our company has environmental goals.	0.845			
	Our company teaches employees to think and work in an environmentally friendly manner.	0.855			
	Our company measures environmental performance.	0.860			
Market Pressure (Tang & Wang et al., 2020; Zameer et al., 2020)	Increased awareness of environmental issues among consumers, suppliers, and competitors encourages our company to carry out pro-environmental business activities.	0.792	0.567	0.747	0.838
	Consumer preferences for environmentally friendly products encourage our company to carry out pro-environmental business activities	0.810			
	Consumer, supplier, and competitor concerns about the company's environmental behavior encourage our company to carry out pro-environmental business activities.	0.812			
	Consumers looking for environmentally friendly suppliers encourage our company to carry out pro-environmental business activities.	0.777			

Note: AVE: Average Variance Extracted, CA: Cronbach's Alpha, CR: Composite Reliability

Inner Model Evaluation

Determinant Coefficient

The coefficient of determination demonstrates how much influence or role the exogenous variables have on the endogenous variables. In this test, the coefficient of determination on green innovation was 0.718. It indicates that market pressure can affect green innovation by 71.8%. While the value of the coefficient of determination for the green strategy was 0.438, it means that the green strategy could be influenced by market pressure of 43.8%. Then, the coefficient of determination for business (MSMEs) sustainability was 0.358. It denotes that business (MSMEs) sustainability was influenced by green innovation and green strategy by 35.8%. The value of the coefficient of determination for the causal relationship between exogenous variables and endogenous variables can be seen in the following table.

Table 3 Results of Determinant Coefficient

Variable	R-Square	R-Square Adj.
Green Innovation	0.718	0.715
Green Strategy	0.438	0.435
Business (MSMEs) Sustainability	0.358	0.351

Model Causality Test

The hypothesis of a causality relationship can be accepted when it has a t-statistical value greater than the t-table. In this study, the Degree of Freedom used at a significance of 5% was 180, so a t-table value of 1.6534 was obtained. From the test results, data were obtained that all alternative hypotheses could be accepted significantly. The following is an explanation of the test results. In addition, the results of testing the hypothesis in more detail are displayed in Table 4.

1. Market pressure had a positive influence on the green strategy of 0.662 and had a significant influence with a t-statistics value of 11.805, greater than the t-table value of 1.6534 (H1 was accepted).
2. Market pressure had a positive influence on green production of 0.537 and had a significant influence with a t-statistics value of 7.703, greater than the t-table value of 1.6534 (H2 was accepted).
3. The green strategy had a positive influence on green production of 0.871 and had a significant influence with a t-statistics value of 16.113, greater than the t-table value of 1.6534 (H3 was accepted).
4. Green strategy had a positive influence on business (MSMEs) sustainability of 0.542 and had a significant influence with a t-statistics value of 4.950, greater than the t-table value of 1.6534 (H4 was accepted).
5. Green production had a positive influence on business (MSMEs) sustainability of 0.715 and had a significant influence with a t-statistics value of 6.814, greater than the t-table value of 1.6534 (H5 was accepted).

Table 4 Model Causality Test Results

Model Causality	Path Coefficients	T-Statistics	P-Values
Market Pressure → Green Strategy (H1)	0.662	11.805	0.000
Market Pressure → Green Production (H2)	0.537	7.703	0.000
Green Strategy → Green Production (H3)	0.871	16.113	0.000
Green Strategy → Business (MSMEs) Sustainability (H4)	0.542	4.950	0.000
Green Production → Business (MSMEs) Sustainability (H5)	0.715	6.814	0.000

Mediator Variable Test

This test was conducted to determine the role of mediator variables in providing a mediating effect for the causal relationship between exogenous and endogenous variables. The results of this test can be observed in Table 5.

The green strategy variable could be a mediator with a significant effect on the relationship between market pressure and business (MSMEs) sustainability, as seen from the Sobel test value of 4.548 greater than the z-table of 1.96, with a probability value of 0.000 less than 0.05. Moreover, the green production variable could be a mediator that had a significant influence on the relationship between market pressure and business (MSMEs) sustainability, with a Sobel test value of 5.093 greater than z-table of 1.96, with a probability value of 0.000 less than 0.05. Therefore, hypotheses 6 and 7 were accepted.

Table 5 Specific Indirect Effects

Variable	Specific Indirect Effects	Sobel Test Statistics	P-Value
Market Pressure --> Green Strategy --> Business (MSMEs) Sustainability	0.494	4.548	0.000
Market Pressure --> Green Production --> Business (MSMEs) Sustainability	0.426	5.093	0.000

Based on the tests performed, the results uncovered that all alternative hypotheses in this study could be accepted at a significance level of 5%. The measurement model in this study can be seen in Figure 1.

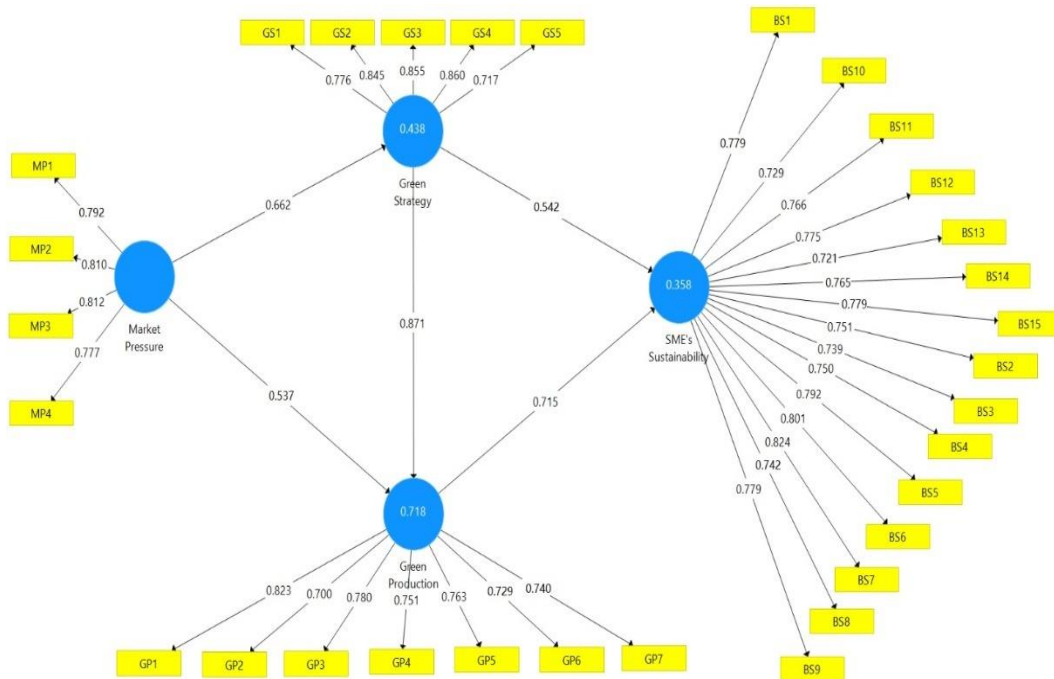


Figure 1 Output of Outer Model and Inner Model

Discussion

This study highlights the literature on market pressure, green production, and green strategy in a new research framework as a way to increase MSMEs' sustainability, as seen from stakeholder theory. The authors proposed five hypotheses with a direct influence of the variables and two hypotheses looking at the indirect effect of market pressure on MSMEs' sustainability. The output from testing the measurement model and structural model through SEM-PLS has proven that all the hypotheses in this study were accepted significantly.

This study authenticates that pressure from the market encourages companies to implement green strategies and green production in their businesses (H1 and H2 were accepted). From the study results, it was found that market pressure had a stronger influence on green strategy than green production, even though both have been proven to be significant. It implies that the roles of consumers, suppliers, and competitors are vital for companies to practice green strategy and green production. These findings support previous research conducted by several experts (Baah et al., 2021; Dai et al., 2018; Yasmeen et al., 2019; Zameer et al., 2020). Some of these studies suggest that stakeholders play a significant role in the continuity of a company's business, including MSMEs. Therefore, the existence of pressure from stakeholders, which several parties in the market environment represented in this study, underlies MSMEs to assess and respond to these demands through the establishment of strategies based on the environment and green production.

The results of the third hypothesis testing regarding the influence of green strategy on green production showed significant results (H3 was accepted). It indicates that the green strategy applied by SMEs would make them automatically adopt environmentally oriented practices, such as green production. The results of this study are in line with research conducted by previous researchers and prove that there is a positive relationship between the two (Chege & Wang, 2020; Kong & Li, 2018; Kraus et al., 2020; Wang et al., 2020). MSMEs implement green strategy design procedures and objectives that are environmentally sound. The procedures and business processes carried out by MSMEs will indirectly affect how they use environmentally friendly resources and raw materials or apply a recycling system in their production process.

The author then identified predictors of MSMEs' sustainability by looking at the influence of green strategy and green production. The findings of this study verify that green strategy and green production could direct MSMEs to achieve sustainability, which can be seen from their good performance in the environmental, social, and financial aspects (H4 and H5 were accepted). Of these two factors, although both had a significant influence, green production had a stronger influence on achieving MSMEs sustainability. Previous studies that also showed similar results have been carried out by Famiyeh et al. (2018; Nilashi et al., 2019; Olayeni et al., 2021; Petera et al., 2021). MSMEs will be able to have a sustainable business from a financial, social, and environmental perspective if they practice green production and green strategy. The existence of this environmental-based strategy will also influence every decision-making made by managers or leaders, including making every individual in the organization aware of the environment and working together to achieve sustainability. Meanwhile, green production through eco-labeling, the use of environmentally friendly raw materials, and more responsible waste management will also direct MSMEs to manage their business more sustainably.

Finally, this study confirms that the indirect pressure from the market could direct MSMEs to manage their business sustainably through the adoption of environmentally based strategies and green production practices (H6 and H7 were accepted). This finding is consistent with research conducted by a number of previous researchers (Chen et al., 2018; Petera et al., 2021; Zameer et al., 2020). MSMEs that are under pressure from consumers, competitors, and suppliers, which pay more attention to environmental issues, will respond to this by incorporating environmental-based aspects into their business activities, such as green strategy and green production. Simultaneously, the two will help MSMEs build an image as an environmentally sound business that can respond appropriately to demands from stakeholders, thus contributing to improving financial, social, and environmental performance, which represents MSMEs' sustainability.

Conclusion

So far, the growth of MSMEs in Indonesia, especially West Java, has continued to show a significant increase in numbers from year to year. As one of the consequences, the decline in environmental quality is directly proportional to the growth of this business. This condition also raises awareness from various parties to start paying attention to

environmental issues and preserving them. MSMEs currently need to respond to pressure from consumers, suppliers, and competitors to run a more sustainable business. For this reason, this study aimed to explore how MSMEs could improve their business sustainability. According to the hypotheses tests, all hypotheses proposed in this study were accepted. It confirms that market pressure significantly predicted green strategy and green production, leading to MSMEs' sustainability. It also confirms the mediating role of green strategy and green production in the relationship between market pressure and MSME sustainability.

This study has contributed to the literature on strategic management, especially in answering the calls for sustainability research in the context of MSMEs in emerging markets. It contributes by widening the antecedents of green strategy, green production, and MSMEs sustainability from the external side, namely market pressure, which is still rarely elaborated. Furthermore, this study also proves the use of stakeholder theory through empirical examination. It emphasizes that firms or organizations, or MSMEs in this study, are required to design processes, planning, practices, and strategies to respond to stakeholders' expectations.

Practically, this study provides several implications. First, as one of the main stakeholders for business, the awareness and values held by the parties within the market environment certainly push firms to change the strategy they have formed. In addition, managers and owners of batik craft, fashion, and convection MSMEs must prepare themselves to answer the calls for sustainability that come from their stakeholders, such as the market and government. Green strategy and green production must be incorporated into their business to achieve sustainability. MSMEs can adopt strategies, such as waste management, lengthening the product life cycle, and developing environmentally friendly products. MSMEs must also pay attention to their production process, such as choosing more sustainable raw materials and carrying out eco-labeling for their products or services.

Finally, this study does not exist without any limitations. Future scholars are suggested to dig further into this topic to gain an understanding of the factors that can drive firms to achieve sustainability. This study has not yet considered the existence of moderating variables, such as firm size, government regulation, or organizational competitiveness. These additional variables can be a sign for firms to understand when the time is to implement their strategies to achieve sustainability according to the underlying conditions of the moderators. Furthermore, this study was carried out on a similar level, namely organizational level. As such, there is a need for future studies to carry out multi-level analysis by incorporating other levels of analysis, such as individual-level and group-level variables, into the study. Therefore, there can be a clear understanding of the mechanisms to reach sustainability from each level within the organization itself.

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