

## Article

# Sustainable SMEs Performance and Green Competitive Advantage: The Role of Green Creativity, Business Independence and Green IT Empowerment

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**Abstract:** This study aims to examine and analyze the influence of green creativity and business independence on competitive advantage moderated by green IT empowerment. The research population is all creative SMEs in the Tangerang, Yogyakarta and West Java regions. Samples were taken from part of the population using purposive sampling technique. The target sample in this study is 400 SMEs. However, there were only 272 SMEs who completely filled out the questionnaire and were thus analyzed. The results of the study concluded that green creativity had a significant negative influence on the performance of sustainable SMEs and a significant positive influence on green competitive advantage. Business independence had a significant positive influence on the performance of sustainable SMEs and a significant positive influence on green competitive advantage. The research results indicate that green IT Empowerment did not moderate the relationship between green creativity and sustainable SME performance and weakened the relationship between green creativity and green competitive advantage. Likewise, the research results indicate that green IT empowerment did not moderate the relationship between business independence and sustainable business performance; it moderated the positive relationship between independence and green competitive advantage.

**Keywords:** green creativity; business independence; green competitive advantage; green IT empowerment



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## 1. Introduction

The level of competition in the business world is increasingly volatile and hostile. The conditions during the COVID-19 pandemic were felt to make it very difficult for businesspeople to survive and continue in the long term. Company managers are required to have high independence and creativity in order to encourage business continuity in the future [1]. Companies can run their business by continuing to strive to produce creative and innovative products and services [2–4]. Some empirical evidence explains that creativity and independence are necessary efforts to increase innovation, effectiveness and organizational survival [5,6]. Creativity and independence are crucial aspects in improving business performance and the company's competitive advantage [7]. This is because the novelty of a good product/service that satisfies stakeholders is a sign that the company is highly committed to using new ideas and innovations supported by high creativity [1,8] and independence [3,9].

The success of an SME business is greatly influenced by the managers and employees involved in it. It is they who will determine the success or failure of a company, let alone at the SME level [10]. SMEs are always faced with limited capital, resources, technology

among other factors. However, when they demonstrate a high and unique commitment compared to competitors, it is expected that the company will be successful and independent [11]. Business independence can be achieved by considering the existence of indicators of success achieved in terms of both financial and non-financial indicators [12]. Having high creativity can actually have an impact on business performance and the company's competitive advantage [7,13,14]. The creative industry, especially batik in Indonesia, is one of the main sectors which is expected to increase the economic growth of the region. Therefore, this research focuses on batik SMEs that are oriented towards natural colors. In the midst of competition for synthetic batik and printing, natural-colored batik SMEs can survive because there is an effort to focus on, and commit to, increasing green creativity [7,15] and business independence [9].

By demonstrating an orientation towards environmental sustainability, pro-environmental consumers will be attracted to the business because it feels unique and has a different character compared to products that use synthetic colors and printing, even though the purchase price is higher. Nonetheless, in the digital era (i.e., now), it turns out that efforts to encourage green creativity and business independence must be strengthened via green IT empowerment to help boost performance and competitive advantage [13,16]. The implementation of economic recovery requires creative SMEs in Indonesia to be able to take advantage of Information Technology (IT). The empowerment of Green IT is a crucial aspect in strengthening SME performance improvement and company competitive advantage [16,17]. This research aims to fill a research gap that is rarely addressed, namely, the role of green creativity and business independence in improving sustainable SME performance and competitive advantage as moderated by green IT empowerment.

More clearly, the research gaps addressed in this study are as follows:

1. Research on the creativity of SMEs in Asia, especially in Indonesia, has been widely studied [18]; however, in the context of green creativity, it is still very limited, especially in the context of pro-environmental SMEs [15,19–22];
2. In the current era, SMEs are also required to integrate green management in each of their business activities so that they can continue to survive in the long term and have a competitive advantage [23–27];
3. Creativity and innovation are currently important demands for SMEs in order for businesses to continue to survive and compete; this is due to highly competitive product and service competition from national and global markets [1,3,5];
4. Another strategic issue that needs to be studied and integrated into a model of sustainable SME performance improvement and competitive advantage is post-COVID-19 SME independence; this is important as during COVID-19, many SMEs went bankrupt and could not survive [1,5,6];
5. Several studies have indeed proven that high green creativity and independence make a significant contribution to sustainable SME business performance [7,13,14]; however, it is still very rare for it to be associated with green competitive advantage [19,28];
6. Some studies examine green IT empowerment as an antecedent of performance and competitive advantage [16,17] though they rarely indicate it as a moderator in strengthening the causes of sustainable SME performance and green competitive advantage; research on green IT has also been carried out in the context of large companies but not in the context of SMEs [29–37];
7. Companies that are pro-environmentally oriented have made a very significant contribution to regional economic growth [19,28].

This study has five sub-sections: (1) Introduction: explains the theoretical issues and business fees in the context of pro-environment SMEs which affects the performance of sustainable SMEs and competitive excellence; (2) Hypothesis Development: explains the state of the art of the literature and development of each hypothesis; (3) Materials and Methods: covering the types of research, sample, and research methodology used including the statistical technique used; (4) Results and Discussion: breaking down the findings,

implications of theory and managerial, and limitations of research and suggestions for future research.

## 2. Hypothesis Development

### 2.1. *Green Creativity, Sustainable SME Performance and Green Competitive Advantage*

For sustainable growth to be strengthened, green competitive advantage is crucial [38]. The idea of a “green competitive advantage” has been defined as a company’s unique set of circumstances that allow it to take a stand on issues such as ecological management or sustainable innovation [39]. Green competitive advantage can also be defined as a successful environmental and sustainability strategy that cannot be imitated by competitors [38]. Businesses must take part in creative, innovative and environmentally friendly projects if they want to establish a green competitive advantage [40].

Green creativity is a green idea that is still original and was developed to produce pro-environmentally oriented products and services [41]. Creativity is one aspect related to one’s psychological behavior [42,43]. One’s experience and one’s ownership of data and information are important avenues by which managers can increase employee creativity. This is especially important in the context of SMEs, where the majority are family businesses are formed in a bond of social capital that exists in society [17]. Creativity requires the creation of something new by producing new and original products/services. One must have a strong will to achieve it [44]. When an organization is creative, the organization will be successful; thus, in the long run, it will increase company performance and competitive advantage [7,14,45]. Sustainable SME performance is the result of serious and real efforts produced by SMEs in a sustainable manner including business, environmental and social performance [15,41,46]. Meanwhile, when a company has above-average competitiveness from the pro-environment perspective, it indicates that the company already has a green competitive advantage [19,28].

When a company has new ideas that are developed and innovative in producing environmentally friendly products/services, it can be said that the company already has a commitment to green creativity. This means that companies can contribute to every activity, from end to end, that is environmentally oriented [15,41,46]. If this condition occurs, it means that the company’s employees are contributing in new ways by promoting ideas that are oriented towards environmental preservation [15,46]. Managers and employees who have green creativity indicate that they have a long-term commitment to preserving the environment, in addition to having goals to improve economic performance and social performance [47]. High green creativity can have a significant impact on improving sustainable business performance in the long term and being able to increase a company’s competitive advantage [17]. The research finding from [41] also concluded that individual creativity had a significant effect on innovation performance. Someone who has high creativity in an organization can make a significant contribution in increasing long-term business success and the company’s competitive advantage [17,48].

**Hypothesis 1 (H1).** *Green creativity can positively improve the performance of sustainable SMEs.*

**Hypothesis 2 (H2).** *Green creativity can positively increase competitive advantage.*

### 2.2. *Business Independence, Sustainable SME Performance and Green Competitive Advantage*

Independence is an action taken not because of coercion but in accordance with the wishes or interests and values of the organization. Independence means having the freedom to own something and being free to actualize and express one’s actions [49]. When given the freedom to act, one must be able to carry it out responsibly and still maintain true and good values [9]. An independent organization means an organization that has employees who are confident in making decisions, do not depend on other people, are independent and do not always need guidance [50]. The research results of [51,52] explained that when employees have independence, they will have an impact on increasing organizational performance

and competitive advantage. This happens because employees feel safe and comfortable when working in the organization, do not feel anxious and have positive behavior [53]. SMEs that are independent and have an orientation towards the environment can make it easier for companies to implement strategies and policies related to green practices [54]. Companies can change their strategic orientation from that of conventional companies to companies that can produce new products or services that are environmentally friendly [55]. Various activities, from end to end, are aimed at having products and services that are unique and have special characteristics of “green product/green service” so that they can improve company performance in a sustainable manner and achieve a green competitive advantage [56].

**Hypothesis 3 (H3).** *Business independence can positively increase the performance of sustainable SMEs in Indonesia.*

**Hypothesis 4 (H4).** *Business independence can positively increase the competitive advantage of green SMEs in Indonesia.*

### 2.3. The Moderation Role of Green IT Empowerment

Green computing, better known as green IT, was originally introduced by the Environmental Protection Agency in America, which, at that time, introduced the Energy Star program which focused on energy efficiency in hardware and computer resources that are environmentally friendly and energy efficient [57,58].

In increasing creativity and independence, organizations must be able to provide full support in empowering their employees, especially in green IT. This is important considering that when an organization is creative and independent, especially in a green orientation, the organization will have sustainable performance and competitive advantage in the long term [16,17]. This research used an empowerment approach because it turns out that when managers do it, employee creativity can increase [59]. Managers can allocate authority and responsibility so that employees will have more independence, motivation and high self-efficacy to change and to accept change positively [60,61]. Several research findings have concluded that empowerment can be a crucial aspect in increasing employee creativity [57,58,62,63].

Creative SMEs are currently required to have fast service. This is because almost all business models owned by companies in Indonesia are digitally based. Even so, the main consideration must be to use efficient digitization, and the technology used must also be based on green IT. The use of green IT is believed to reduce carbon emissions and wastage [64]. Creative SMEs have to continue to overcome obstacles of a technological nature, in addition to human and capital resources. Therefore, SMEs need to make readiness to use green IT in addition to implementing it in stages in the future. Likewise, SMEs need to empower green IT in terms of both employee behavior and psychology because it requires a positive mentality and attitude and a commitment to managing information technology, especially those that have an impact on the environment [65]. Organizations must be active and have a commitment to consistently organize training, in addition to undertaking continuous communication and outreach, so that their employees have high awareness and concern for the environment [13,66].

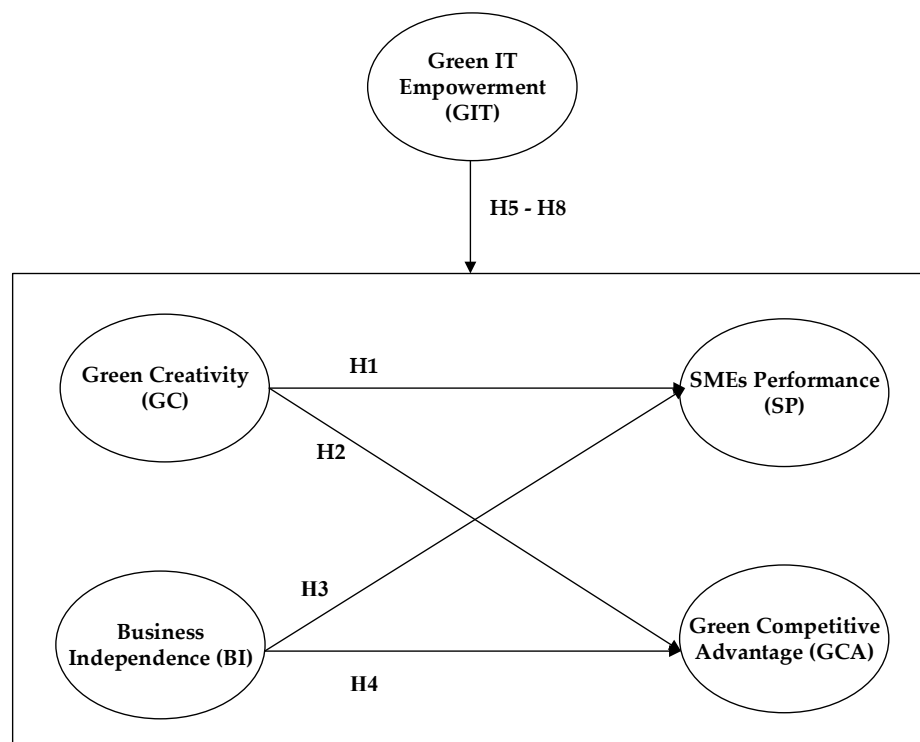
**Hypothesis 5 (H5).** *Empowerment of green IT strengthens the relationship between green creativity (GC) and sustainable SME performance.*

**Hypothesis 6 (H6).** *Empowerment of green IT strengthens the relationship between business independence and sustainable SME performance.*

**Hypothesis 7 (H7).** *Green IT empowerment strengthens the relationship between green creativity (GC) and green competitive advantage.*

**Hypothesis 8 (H8).** *Empowerment of green IT strengthens the relationship between business independence and green competitive advantage.*

On the basis of the hypothesis development above, Figure 1 shows the research model that will be examined.



**Figure 1.** Research model.

### 3. Materials and Methods

The research was conducted in the provinces of West Java, Banten and Yogyakarta, as these three provinces are known to have large creative industries and can contribute to local-government economic growth. Therefore, the population and, at the same time, the respondents involved were all owners and managers of creative SMEs in the three provinces represented by natural-colored Batik SMEs. The researchers have observed that there were several creative SME associations that operated by relying on natural colors as a coloring orientation.

The sampling technique was carried out proportionally to the random sampling area as follows: (1) selecting natural-color Batik SME clusters that had the potential to be sampled—namely, Cirebon, representing West Java; Tangerang, representing Banten; and Bantul Regency, representing Yogyakarta—via random sampling; (2) conducting a purposive technique with the criteria of SMEs having sales of a minimum of IDR 3 million per month and having been in operation for at least 3 years. This is in accordance with the proposed research theme, which examines the independence of SMEs associated with the competitive advantage of batik SMEs. The method of data collection was carried out using primary data (questionnaires and interviews) as well as secondary data (related publications from various sources).

There were 272 respondents who successfully filled out the questionnaire completely. This means that the results of data collection can already be used as samples in survey-type research. Women make up the majority of the respondents. Most of the responders have been in business for 4–6 years and employ < 20 people. Table 1 presents detailed information on the demographics of the respondents.

**Table 1.** Respondent demographics.

Characteristics		Frequency	Percentage
Gender	Male	52	19.1%
	Female	220	80.9%
Education	Senior High School	165	60.7%
	Diploma	20	7.4%
	Bachelor	84	30.9%
	Magister	3	1.1%
Age (years old)	<25	43	15.8%
	26–30	33	12.1%
	31–35	31	11.4%
	36–40	13	4.8%
	41–45	16	5.9%
	>45	136	50.0%
Number of employees	<20	260	95.6%
	>20	12	4.4%
Business age (years)	<3	65	23.9%
	4–6	189	69.5%
	7–9	13	4.8%
	>10	5	1.8%

This study used six variables: green creativity (GC); business independence (BI), green competitive advantage (GCA); sustainable SME performance (SP); and Green IT empowerment (GIT). The measurement scale used the Likert scale technique as follows: very strongly disagree (score 1) to very strongly agree (score 7). Meanwhile, for sustainable SME performance variables and competitive advantage, a very low (score 1) to a very high (score 7) scale was used compared to competitors' performance over the last 3 years. The research model used structural equation modeling assisted by SmartPLS 3.0 software.

#### 4. Results

The results of the measurement model test, which consists of validity and reliability tests, can be seen in Table 2. The test results show that the outer loading value for all indicators is above 0.7. In addition, the test results also show that the AVE value for each construct is above 0.5. With regard to the reliability test, it is known that the Cronbach's alpha (CA) and composite reliability (CR) values for each construct are above 0.7. The results of the data analysis show that the indicators and constructs have fulfilled the convergent validity and reliability tests.

**Table 2.** Measurement model: convergent validity and reliability.

	Outer Loading	CR	CA	AVE
Sustainable SME performance (SP)		0.964	0.953	0.842
SP1	0.906			
SP2	0.908			
SP3	0.924			
SP4	0.933			
SP5	0.917			
Green Creativity (GC)		0.976	0.970	0.870
GC1	0.938			
GC2	0.931			
GC3	0.929			
GC4	0.940			
GC5	0.963			
GC6	0.895			



Table 2. Cont.

	Outer Loading	CR	CA	AVE
Green Competitive Advantage (GCA)		0.931	0.888	0.818
GCA 1	0.877			
GCA2	0.932			
GCA3	0.903			
Green IT Empowerment (GIT)		0.925	0.878	0.804
GIT1	0.897			
GIT2	0.896			
GIT3	0.897			
Business Independence (BI)		0.934	0.911	0.741
BI1	0.894			
BI2	0.893			
BI3	0.890			
BI4	0.898			
BI5	0.715			

With regard to discriminant validity testing, the cross-loading calculation in Table 3 shows that the correlation between the construct indicator variables and the related constructs (the numbers in bold) is significantly higher than the correlation with other constructs. For example, the correlation between SP1 and SP (0.906) is greater than the correlation between SP1 and GCA (0.090). Meanwhile the results of the R-Square ( $R^2$ ) test show that the model in this study is able to explain business performance by 53.4% and green competitive advantage (GCA) by 62.2%. Table 4 presents information on the results of the  $R^2$  test.

Table 3. Measurement model: cross loading.

	SP	GC	GCA	GIT	BI
SP1	<b>0.906</b>	−0.668	0.090	0.277	0.667
SP2	<b>0.908</b>	−0.521	0.070	0.241	0.566
SP3	<b>0.924</b>	−0.550	0.006	0.203	0.569
SP4	<b>0.933</b>	−0.585	0.058	0.264	0.627
SP5	<b>0.917</b>	−0.57	0.116	0.307	0.607
GC1	−0.591	<b>0.938</b>	0.008	−0.195	−0.533
GC2	−0.621	<b>0.931</b>	0.059	−0.197	−0.558
GC3	−0.606	<b>0.929</b>	0.046	−0.175	−0.523
GC4	−0.552	<b>0.940</b>	0.079	−0.141	−0.496
GC5	−0.601	<b>0.963</b>	0.11	−0.152	−0.547
GC6	−0.576	<b>0.895</b>	0.092	−0.104	−0.48
GCA 1	0.205	−0.076	<b>0.877</b>	0.630	0.346
GCA2	−0.009	0.148	<b>0.932</b>	0.582	0.139
GCA3	0.011	0.116	<b>0.903</b>	0.609	0.170
GIT1	0.215	−0.138	0.601	<b>0.897</b>	0.362
GIT2	0.220	−0.062	0.599	<b>0.896</b>	0.386
GIT3	0.323	−0.257	0.605	<b>0.897</b>	0.460
BI1	0.635	−0.554	0.239	0.434	<b>0.894</b>
BI2	0.618	−0.501	0.220	0.366	<b>0.893</b>
BI3	0.571	−0.477	0.199	0.401	<b>0.890</b>
BI4	0.617	−0.572	0.154	0.344	<b>0.898</b>
BI5	0.372	−0.253	0.238	0.417	0.715

**Table 4.** Results of  $R^2$ .

	R Square	R Square Adjusted
SP	0.543	0.534
GCA	0.629	0.622

Table 5 presents information on the results of hypothesis testing. The results of data analysis show that green creativity (GC) has a significant negative effect on business performance (SP) ( $\beta = -0.389$ ;  $p = 0.001$ ). Even though it has a significant effect, this result shows that H1 is rejected. Based on the data analysis, it shows that H2 is accepted, which means that GC has a significant positive effect on green competitive advantage (GCA) ( $\beta = 0.310$ ;  $p = 0.001$ ). With regard to business independence (BI), the results of the hypothesis test show that RL has a significant positive effect on SP ( $\beta = 0.421$ ;  $p = 0.001$ ) and also a significant positive effect on GCA ( $\beta = 0.205$ ;  $p = 0.013$ ). These results indicate that H3 and H4 are accepted.

**Table 5.** Results of hypotheses testing.

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	p Values	Decision
H1. GC $\rightarrow$ SP	−0.389	−0.389	0.058	6.721	0.000	Rejected
H2. GC $\rightarrow$ GCA	0.310	0.309	0.055	5.656	0.000	Accepted
H3. BI $\rightarrow$ SP	0.421	0.421	0.063	6.674	0.000	Accepted
H4. BI $\rightarrow$ GCA	0.205	0.200	0.082	2.503	0.013	Accepted

The results of the green IT empowerment (GIT) moderation test are presented in Table 6. As seen in Table 6, it is known that GIT does not affect the relationship between GC and SP ( $\beta = -0.026$ ;  $p = 0.698$ ) and the relationship between BI and SP ( $\beta = -0.034$ ;  $p = 0.452$ ). Meanwhile, GIT weakens the relationship between GC and GCA ( $\beta = -0.286$ ;  $p = 0.001$ ) and strengthens the relationship between BI and GCA ( $\beta = 0.142$ ;  $p = 0.016$ ).

**Table 6.** Results of moderating effect testing.

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	p Values	Decision
H5. GC-SP $\rightarrow$ SP	−0.026	−0.028	0.066	0.388	0.698	Rejected
H6. BI-SP $\rightarrow$ SP	−0.034	−0.036	0.045	0.752	0.452	Rejected
H7. GC-GCA $\rightarrow$ GCA	−0.286	−0.286	0.057	5.008	0.000	Rejected
H8. BI-GCA $\rightarrow$ GCA	0.142	0.135	0.059	2.42	0.016	Accepted

#### 4.1. Theoretical Implication

The research results conclude that green creativity has a significant negative influence on the performance of sustainable creative SMEs (H1 is rejected). This research concludes that the greener the creativity increases, the lower the performance of SMEs in a sustainable manner. This finding does not support previous theory and research from [5,13,14,16,42]. At present, consumers have pride when consuming green-based products/services [42,67], which encourages creative SMEs to never give up producing creative products/services and green products. However, it turns out that creative SMEs find it difficult to make green-based products/services. This is evidently due to the very high cost of producing green products/services, as well as lengthy process of construction. Likewise, in general, it turns out that it is driven by the unsupportive infrastructure, especially with respect to access roads to the location of associations that sell products.



The research results conclude that green creativity has a significant positive influence on the competitive advantage of green creative SMEs (H2 accepted). The findings of this research support the theory and research of various experts such as [5]. Creativity is a crucial aspect in increasing a company's competitive advantage [7,68–70]. Even though creative SMEs have problems in increasing creativity, it seems that creative SMEs need to think and act strategically in order to achieve it. The unique character and design, in addition to the strong natural coloring and orientation towards environmental conservation behavior, make the products/services owned by SMEs more distinct and known by the public. Since managers and employees are determining factors for business success, they should be able to manage SMEs by optimizing their assets—all of which can be directed to be more efficient and effective—as well as to carry out creative behavior. Creativity owned by SMEs must be high and oriented towards pro-environmental behavior in order to achieve competitive advantage [7,13,14]. These findings finally confirm the theory that when an organization has creative people, it can have an impact on competitive advantage, especially on green competitive advantage [7,14,45]. SMEs that have innovative and creative employees who produce products that are environmentally friendly will usually think, in the long term, about environmental sustainability and sustainable development.

Business independence has a positive influence on the performance of sustainable creative SMEs (H3 accepted) and the green competitive advantage of creative SMEs (H4 accepted). This finding, at the same time, strengthens the theory that when organizations have employees who work according to their passion and interests, they will have a strong motivation to work sincerely, not because they are forced to. Authors of [49] even suggested that the company has a culture of empowering employees to express and act creatively. Employees must have a commitment to maintain values and act responsibly in preserving the surrounding environment [9]. Even though they were hit by the storm of COVID-19 and competition both from within and outside the country, creative SMEs in Indonesia were still able to survive. Therefore, creative SMEs should be more independent and not dependent on other parties [50]. This is important because the results of several studies have proven that business independence can have an impact on sustainable SME performance and green competitive advantage [56].

The research results conclude that green IT empowerment does not moderate the relationship between green creativity and sustainable SME performance (H5 rejected), and it weakens the relationship between green creativity and green competitive advantage (H7 rejected). Likewise, the research results conclude that green IT empowerment does not moderate the relationship between independence and sustainable business performance (H6 rejected) but moderates the positive relationship between independence and green competitive advantage (H8 rejected). As is known, the SME manager is usually also the owner of the SME. They must support their employees to be able to create and produce creative and green-based products and train them to have a spirit of independence so that business performance and competitive advantage can increase. One of the things that can be undertaken is the empowerment of green IT [57,58].

#### 4.2. Managerial Implication

Some buyers felt reluctant to come to the location because of the unsupportive infrastructure. Yet when consumers come to the location, many had expressed interest in witnessing the batik process and the process of producing products with natural colors. Likewise, the several locations studied generally paid little attention to aspects of cleanliness and customer convenience.

It seems that there should be efforts to overcome these problems. The examples are creating new products/services by developing existing products/services or even producing new products/services oriented towards preserving the environment, while still considering efficient and effective cost and time. Managers of green creativity SMEs must be able to produce novelty and originality as well as benefits that are compatible with the wants and needs of consumers. This is in accordance with the suggestions from [71], wherein

companies should focus on developing individual creative potential rather than focusing solely on direct creative output. Moreover, it is recommended by [72] that creative learning can be improved with games and continuous learning. Companies should have a high commitment in using new ideas and innovations supported by high creativity [1] so that the company's performance will improve. Creative SMEs must have a high commitment to using new ideas and innovations that are supported by high creativity [1]. Support from the local regional government is also very much needed in order to support facilities and infrastructure that are conducive to achieving increased business performance.

When employees work safely and comfortably, they can work productively and not depend on anyone. Ideas must be created independently. In addition, employees must be innovative and not hesitate, even though competitors are launching new products/services intensively. Confidence is an aspect that needs to be nurtured from an early age and developed continuously so that it will access unique and interesting characteristics in order to attract old and new customers. An independent creative SMEs means that it must (a) be responsible for the business decisions that have been made; (b) not depend on other people; (c) be able to meet minimum basic needs; (d) have a high work ethic; (e) be disciplined; and (f) dare to take risks. SMEs should be more able to consider orientation towards the environment as a way to implement strategies and policies that focus on environmental conservation [54]. They should have more knowledge from the perspective of environmental conservation because they have decades of experience developing businesses and performing well. Some research also recommends that when an independent culture is seen as a value, SME performance and competitive advantage can increase [55]. Products and services that are unique and have special characteristics of "green product/green service" are predicted to be able to improve company performance in a sustainable manner and have a green competitive advantage [56].

Managers who can empower employees and organizations with green IT can design and develop alternative, renewable energy, such as (1) using solar panels to meet daily electricity needs; (2) producing alternative gases such as biogas to generate electricity; (3) making it possible to make turbines to produce electricity, even if on a gradual scale; (4) using biomass in the long term when the business scale grows. Likewise, several other efforts can also be made, such as using raw materials that are environmentally friendly and renewable and developing products that have a longer lifespan by using a production system that is energy efficient and has minimal pollution. Although some of these efforts have been carried out by the creative SMEs studied, there are still several other efforts that can still be carried out with an environmental conservation orientation. Managers think that strengthening green IT empowerment might constitute one of the strongest efforts to improve the performance and competitive advantage of SMEs in a sustainable manner. This is at the time to address the research results and hypotheses H5, H6 and H7. It turns out that implementing green IT empowerment is not easy, especially when it is not supported by the creation of strong and characterful green creativity. Likewise, this is also because the costs for implementing Green IT are very high, while creative SMEs are usually faced with limited capital, resources, technology and business networks. Therefore, these efforts can be carried out in stages and continuously so that the company's goals with respect to environmental conservation can also be achieved. Creative SMEs in Indonesia must have strong independence in order to achieve superior performance and a green competitive advantage in the long term.

#### *4.3. Research Limitation*

This research involved three Indonesian provinces which had different community characteristics even though they had the same business orientation, namely, using natural colors in their production process. It is feared that this research will not be able to generalize to the manufacturing industry throughout Indonesia. The creative industries studied were only represented by the batik industry and did not include other creative industries. This

was due to the difficulty in finding creative industry research objects oriented towards green production processes/producing green products/services.

#### 4.4. Suggestions for Future Research

In the future, it will be better to choose a type of creative industry that has successfully participated in the PROPER program because it will have a strong correlation in achieving its strategy and objectives. The efforts to improve sustainable SME performance and green competitive advantage need to consider other variables such as green innovation, green skills and green transformational leadership, which can be employed as a strength of corporate strategy.

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## References

- Shalley, C.E.; Gilson, L.L. What Leaders Need to Know: A Review of Social and Contextual Factors That Can Foster or Hinder Creativity. *Leadersh. Q.* **2004**, *15*, 33–53. [\[CrossRef\]](#)
- Hanaysha, J.R.; Al-Shaikh, M.E.; Joghee, S.; Alzoubi, H.M. Impact of Innovation Capabilities on Business Sustainability in Small and Medium Enterprises. *FIIB Bus. Rev.* **2022**, *11*, 67–78. [\[CrossRef\]](#)
- Holmes, L.; Cresswell, K.; Williams, S.; Parsons, S.; Keane, A.; Wilson, C.; Islam, S.; Joseph, O.; Miah, J.; Robinson, E.; et al. Innovating Public Engagement and Patient Involvement through Strategic Collaboration and Practice. *Res. Involv. Engagem.* **2019**, *5*, 30. [\[CrossRef\]](#)
- Suki, N.M.; Suki, N.M.; Sharif, A.; Afshan, S.; Rexhepi, G. Importance of Green Innovation for Business Sustainability: Identifying the Key Role of Green Intellectual Capital and Green SCM. *Bus. Strategy Environ.* **2023**, *32*, 1542–1558. [\[CrossRef\]](#)
- Shalley, C.E.; Zhou, J.; Oldham, G.R. The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go from Here? *J. Manag.* **2004**, *30*, 933–958. [\[CrossRef\]](#)
- Shalley, C.E.; Gilson, L.L.; Blum, T.C. Matching Creativity Requirements and the Work Environment: Effects on Satisfaction and Intentions to Leave. *Acad. Manag. J.* **2000**, *43*, 215–223. [\[CrossRef\]](#)
- Zameer, H.; Wang, Y.; Yasmeen, H. Reinforcing Green Competitive Advantage through Green Production, Creativity and Green Brand Image: Implications for Cleaner Production in China. *J. Clean. Prod.* **2020**, *247*, 119119. [\[CrossRef\]](#)
- Amabile, T.M.; Schatzel, E.A.; Moneta, G.B.; Kramer, S.J. Leader Behaviors and the Work Environment for Creativity: Perceived Leader Support. *Leadersh. Q.* **2004**, *15*, 5–32. [\[CrossRef\]](#)
- Metin, U.B.; Peeters, M.C.W.; Taris, T.W. Correlates of Procrastination and Performance at Work: The Role of Having “Good Fit”. *J. Prev. Interv. Community* **2018**, *46*, 228–244. [\[CrossRef\]](#)
- Sawatenarakul, N.; Anthasudsawaeng, K. Factors Enhancing Employee Loyalty towards Organization. *Soc. Sci. J.* **2022**, *12*, 1081–1090. [\[CrossRef\]](#)
- Simpson, M.; Tuck, N.; Bellamy, S. Small Business Success Factors: The Role of Education and Training. *Educ. Train.* **2004**, *46*, 481–491. [\[CrossRef\]](#)

12. O’Cass, A.; Sok, P. The Role of Intellectual Resources, Product Innovation Capability, Reputational Resources and Marketing Capability Combinations in Firm Growth. *Int. Small Bus. J. Res. Entrep.* **2014**, *32*, 996–1018. [\[CrossRef\]](#)
13. Widhiastuti, A.; Muafi, M. The Role of Environmental Commitment and Green Creativity on Business Performance Mediated by Circular Economy Implementation. *Int. J. Bus. Ecosyst. Strategy* **2022**, *4*, 96–107. [\[CrossRef\]](#)
14. Lin, Y.-H.; Chen, Y.-S. Determinants of Green Competitive Advantage: The Roles of Green Knowledge Sharing, Green Dynamic Capabilities, and Green Service Innovation. *Qual. Quant.* **2017**, *51*, 1663–1685. [\[CrossRef\]](#)
15. Aeknarajindawat, N.; Jermsittiparsert, K. The Mediating Role of Green Creativity in the Relationship between Proactive Green Innovation, Reactive Green Innovation and the Performance of Green Product Development: A Case of Thai Sports Manufacturing Firms. In *Journal of Human Sport and Exercise—2019—Summer Conferences of Sports Science*; Universidad de Alicante: Alicante, Spain, 2019. [\[CrossRef\]](#)
16. Muafi; Sulistio, J.; Sugarindra, M. The Effect of Green IT Empowerment and Online Training on Technology Innovation Performance: The Moderating Role of Green Life Style. *Int. J. Sustain. Dev. Plan.* **2022**, *17*, 1499–1509. [\[CrossRef\]](#)
17. Muafi, M. Green IT Empowerment, Social Capital, Creativity and Innovation: A Case Study of Creative City, Bantul, Yogyakarta, Indonesia. *J. Ind. Eng. Manag.* **2015**, *8*, 719–737. [\[CrossRef\]](#)
18. Makarim, A.F.; Muafi, M. The Effect of Green Human Resource Management (GHRM) Practices on Turnover Intention. *Int. J. Res. Bus. Soc. Sci.* **2021**, *10*, 83–94. [\[CrossRef\]](#)
19. Zameer, H.; Wang, Y.; Yasmeen, H.; Mubarak, S. Green Innovation as a Mediator in the Impact of Business Analytics and Environmental Orientation on Green Competitive Advantage. *Manag. Decis.* **2022**, *60*, 488–507. [\[CrossRef\]](#)
20. Sugandini, D.; Effendi, M.I.; Thamrin, H.M.; Priyadi, U.; Muafi, M. From Environmental Knowledge to Conservation Behaviour. *Qual. Access Success* **2019**, *20*, 101–107.
21. Yong, J.Y.; Yusliza, M.-Y.; Ramayah, T.; Fawehinmi, O. Nexus between Green Intellectual Capital and Green Human Resource Management. *J. Clean Prod.* **2019**, *215*, 364–374. [\[CrossRef\]](#)
22. Guevara-Rivera, E.; Osorno-Hinojosa, R.; Zaldivar-Carrillo, V.; Perez-Ortiz, H. Dynamic Simulation Methodology for Implementing Circular Economy: A New Case Study. *J. Ind. Eng. Manag.* **2021**, *14*, 850. [\[CrossRef\]](#)
23. Dumont, J.; Shen, J.; Deng, X. Effects of Green HRM Practices on Employee Workplace Green Behavior: The Role of Psychological Green Climate and Employee Green Values. *Hum. Resour. Manag.* **2017**, *56*, 613–627. [\[CrossRef\]](#)
24. Zhang, Y.; Luo, Y.; Zhang, X.; Zhao, J. How Green Human Resource Management Can Promote Green Employee Behavior in China: A Technology Acceptance Model Perspective. *Sustainability* **2019**, *11*, 5408. [\[CrossRef\]](#)
25. Islam, M.A.; Jantan, A.H.; Yusoff, Y.M.; Chong, C.W.; Hossain, M.S. Green Human Resource Management (GHRM) Practices and Millennial Employees’ Turnover Intentions in Tourism Industry in Malaysia: Moderating Role of Work Environment. *Glob. Bus. Rev.* **2020**, *22*, 097215092090700. [\[CrossRef\]](#)
26. Saeed, B.B.; Afsar, B.; Hafeez, S.; Khan, I.; Tahir, M.; Afridi, M.A. Promoting Employee’s Proenvironmental Behavior through Green Human Resource Management Practices. *Corp. Soc. Responsib. Environ. Manag.* **2019**, *26*, 424–438. [\[CrossRef\]](#)
27. Arqawi, S.; Zaid, A.; Jaaron, A.; Hila, A.; Shobaki, M.; Abu-Naser, S. Green Human Resource Management Practices Among Palestinian Manufacturing Firms- An Exploratory Study. *J. Resour. Dev. Manag.* **2019**, *52*, 62–69. [\[CrossRef\]](#)
28. Muisyo, P.K.; Qin, S.; Ho, T.H.; Julius, M.M. The Effect of Green HRM Practices on Green Competitive Advantage of Manufacturing Firms. *J. Manuf. Technol. Manag.* **2022**, *33*, 22–40. [\[CrossRef\]](#)
29. Behera, P.; Sethi, N. Nexus between Environment Regulation, FDI, and Green Technology Innovation in OECD Countries. *Environ. Sci. Pollut. Res.* **2022**, *29*, 52940–52953. [\[CrossRef\]](#) [\[PubMed\]](#)
30. Song, M.; Shahzad, U.; Ractham, P.; Goyal, S. Technological Innovation and Greener Energy Technology Adoption: Do Socioeconomic Conditions Make a Difference. *IEEE Trans. Eng. Manag.* **2023**, 1–18. [\[CrossRef\]](#)
31. Neves, C.; Oliveira, T.; Santini, F. Sustainable Technologies Adoption Research: A Weight and Meta-Analysis. *Renew. Sustain. Energy Rev.* **2022**, *165*, 112627. [\[CrossRef\]](#)
32. Shahzad, M.; Qu, Y.; Rehman, S.U.; Zafar, A.U. Adoption of Green Innovation Technology to Accelerate Sustainable Development among Manufacturing Industry. *J. Innov. Knowl.* **2022**, *7*, 100231. [\[CrossRef\]](#)
33. Yang, Z.; Chen, H.; Mi, L.; Li, P.; Qi, K. Green Building Technologies Adoption Process in China: How Environmental Policies Are Reshaping the Decision-Making among Alliance-Based Construction Enterprises? *Sustain. Cities Soc.* **2021**, *73*, 103122. [\[CrossRef\]](#)
34. Losacker, S.; Horbach, J.; Liefner, I. A Spatial Perspective on Green Technology Adoption in China: Insights from Patent Licensing Data. *Innov. Dev.* **2023**, 1–21. [\[CrossRef\]](#)
35. Wang, X.; Cho, S.-H.; Scheller-Wolf, A. Green Technology Development and Adoption: Competition, Regulation, and Uncertainty—A Global Game Approach. *Manag. Sci.* **2021**, *67*, 201–219. [\[CrossRef\]](#)
36. Wu, Y.; Huang, Y.; Wang, H.; Zhen, L.; Shao, W. Green Technology Adoption and Fleet Deployment for New and Aged Ships Considering Maritime Decarbonization. *J. Mar. Sci. Eng.* **2022**, *11*, 36. [\[CrossRef\]](#)
37. Shen, B.; Zhu, C.; Li, Q.; Wang, X. Green Technology Adoption in Textiles and Apparel Supply Chains with Environmental Taxes. *Int. J. Prod. Res.* **2021**, *59*, 4157–4174. [\[CrossRef\]](#)
38. Kuo, F.-I.; Fang, W.-T.; LePage, B.A. Proactive Environmental Strategies in the Hotel Industry: Eco-Innovation, Green Competitive Advantage, and Green Core Competence. *J. Sustain. Tour.* **2022**, *30*, 1240–1261. [\[CrossRef\]](#)
39. Alam, S.M.S.; Islam, K.M.Z. Examining the Role of Environmental Corporate Social Responsibility in Building Green Corporate Image and Green Competitive Advantage. *Int. J. Corp. Soc. Responsib.* **2021**, *6*, 8. [\[CrossRef\]](#)



40. Wysocki, J. Innovative Green Initiatives in the Manufacturing SME Sector in Poland. *Sustainability* **2021**, *13*, 2386. [\[CrossRef\]](#)
41. Li, W.; Bhutto, T.A.; Xuhui, W.; Maitlo, Q.; Zafar, A.U.; Ahmed Bhutto, N. Unlocking Employees' Green Creativity: The Effects of Green Transformational Leadership, Green Intrinsic, and Extrinsic Motivation. *J. Clean. Prod.* **2020**, *255*, 120229. [\[CrossRef\]](#)
42. Priscilla, H.; Gyambrah, M.; Boakye, I.; Priscilla, H.; Gyambrah, M. Influence of Employee Creativity on the Quality of Work of Employees in Selected Ghanaian Organizations. *Int. J. Indian Psychol.* **2017**, *5*, 501. [\[CrossRef\]](#)
43. Bavik, A.; Kuo, C.-F. A Systematic Review of Creativity in Tourism and Hospitality. *Serv. Ind. J.* **2022**, *42*, 321–359. [\[CrossRef\]](#)
44. Craft, A. (Ed.) *Creativity in Schools: Tensions and Dilemmas*; Routledge: London, UK, 2005. [\[CrossRef\]](#)
45. Basheer, M.F.; Siam, M.R.A.; Awn, A.M.; Hussan, S.G. Exploring the Role of TQM and Supply Chain Practices for Firm Supply Performance in the Presence of Information Technology Capabilities and Supply Chain Technology Adoption: A Case of Textile Firms in Pakistan. *Uncertain Supply Chain. Manag.* **2019**, *7*, 275–288. [\[CrossRef\]](#)
46. Hesari, E.A.; Shadiaradehaei, E.; Shahrabi, B. The Effect of Corporate Social Responsibility on Brand Performance with the Mediating Role of Corporate Reputation, Resource Commitment and Green Creativity. *Teh. Glas.* **2021**, *15*, 84–91. [\[CrossRef\]](#)
47. Setyaningrum, R.; Muafi, M. Green Human Resource Management, Green Supply Chain Management, Green Lifestyle: Their Effect on Business Sustainability Mediated by Digital Skills. *J. Ind. Eng. Manag.* **2023**, *16*, 1. [\[CrossRef\]](#)
48. Baah, C.; Agyabeng-Mensah, Y.; Afum, E.; Lascano Armas, J.A. Exploring Corporate Environmental Ethics and Green Creativity as Antecedents of Green Competitive Advantage, Sustainable Production and Financial Performance: Empirical Evidence from Manufacturing Firms. *Benchmarking Int. J.* **2023**. [\[CrossRef\]](#)
49. Bai, Y.; Lin, L.; Li, P.P. How to Enable Employee Creativity in a Team Context: A Cross-Level Mediating Process of Transformational Leadership. *J. Bus. Res.* **2016**, *69*, 3240–3250. [\[CrossRef\]](#)
50. Carver, C.S. Resilience and Thriving: Issues, Models, and Linkages. *J. Soc. Issues* **1998**, *54*, 245–266. [\[CrossRef\]](#)
51. Thompson, C.A.; Prottas, D.J. Relationships among Organizational Family Support, Job Autonomy, Perceived Control, and Employee Well-Being. *J. Occup. Health Psychol.* **2006**, *11*, 100–118. [\[CrossRef\]](#)
52. Elsass, P.M.; Veiga, J.F. Job Control and Job Strain: A Test of Three Models. *J. Occup. Health Psychol.* **1997**, *2*, 195–211. [\[CrossRef\]](#)
53. Ainsworth, M.D.S.; Marvin, R.S. On the Shaping of Attachment Theory and Research: An Interview with Mary D. S. Ainsworth (Fall 1994). *Monogr. Soc. Res. Child Dev.* **1995**, *60*, 2. [\[CrossRef\]](#)
54. Rubel, M.R.B.; Kee, D.M.H.; Rimi, N.N. The Influence of Green HRM Practices on Green Service Behaviors: The Mediating Effect of Green Knowledge Sharing. *Empl. Relat.* **2020**, *43*, 996–1015. [\[CrossRef\]](#)
55. Cabrita, M.d.R.; Cruz-Machado, V.; Matos, F.; Safari, H. Green Knowledge: Developing a Framework that Integrates Knowledge Management and Eco-Innovation. In Proceedings of the European Conference on Knowledge Management, ECKM, Coleraine, UK, 1–2 September 2016; pp. 127–135.
56. Wang, C.H. How Organizational Green Culture Influences Green Performance and Competitive Advantage: The Mediating Role of Green Innovation. *J. Manuf. Technol. Manag.* **2019**, *30*, 666–683. [\[CrossRef\]](#)
57. Siswanti, Y.; Muafi, M. Empowering Leadership and Individual Creativity: The Mediation Role of Psychological Empowerment in Facing Covid-19 Pandemic. *J. Asian Financ. Econ. Bus.* **2020**, *7*, 809–816. [\[CrossRef\]](#)
58. Aburuman, N.M. The Impact of Administrative Empowerment on Creativity Improvement among the Workers of Jordanian Public Administration Institute. Volume 7. 2016. Available online: [www.ijbssnet.com](http://www.ijbssnet.com) (accessed on 25 June 2023).
59. Mumford, M.D.; Scott, G.M.; Gaddis, B.; Strange, J.M. Leading Creative People: Orchestrating Expertise and Relationships. *Leadersh. Q.* **2002**, *13*, 705–750. [\[CrossRef\]](#)
60. Muafi, Fachrunnisa, O.; Siswanti, Y.; El Qadri, Z.M.; Harjito, D.A. Empowering Leadership and Individual Readiness to Change: The Role of People Dimension and Work Method. *J. Knowl. Econ.* **2019**, *10*, 1515–1535. [\[CrossRef\]](#)
61. Dong, Y.; Bartol, K.M.; Zhang, Z.-X.; Li, C. Enhancing Employee Creativity via Individual Skill Development and Team Knowledge Sharing: Influences of Dual-Focused Transformational Leadership. *J. Organ. Behav.* **2017**, *38*, 439–458. [\[CrossRef\]](#)
62. Zhang, X.; Zhou, J. Empowering Leadership, Uncertainty Avoidance, Trust, and Employee Creativity: Interaction Effects and a Mediating Mechanism. *Organ. Behav. Hum. Decis. Process.* **2014**, *124*, 150–164. [\[CrossRef\]](#)
63. Özaralli, N. Linking Empowering Leader to Creativity: The Moderating Role of Psychological (Felt) Empowerment. *Procedia Soc. Behav. Sci.* **2015**, *181*, 366–376. [\[CrossRef\]](#)
64. Paramati, S.R.; Mo, D.; Huang, R. The Role of Financial Deepening and Green Technology on Carbon Emissions: Evidence from Major OECD Economies. *Financ. Res. Lett.* **2021**, *41*, 101794. [\[CrossRef\]](#)
65. Hapsah, R.; Savira, S.I. Hubungan Antara Self Efficacy Dan Kreativitas Dengan Minat Berwirausaha. *J. Psikol. Teor. Dan Terap.* **2015**, *5*, 80. [\[CrossRef\]](#)
66. Lambrinou, E.; Hansen, T.B.; Beulens, J.W. Lifestyle Factors, Self-Management and Patient Empowerment in Diabetes Care. *Eur. J. Prev. Cardiol.* **2019**, *26* (Suppl. S2), 55–63. [\[CrossRef\]](#) [\[PubMed\]](#)
67. Mehta, R.; Zhu, M. Creating When You Have Less: The Impact of Resource Scarcity on Product Use Creativity. *J. Consum. Res.* **2016**, *42*, 767–782. [\[CrossRef\]](#)
68. Alfawaire, F.; Atan, T. The Effect of Strategic Human Resource and Knowledge Management on Sustainable Competitive Advantages at Jordanian Universities: The Mediating Role of Organizational Innovation. *Sustainability* **2021**, *13*, 8445. [\[CrossRef\]](#)
69. Nguyen, P.V.; Huynh, H.T.N.; Lam, L.N.H.; Le, T.B.; Nguyen, N.H.X. The Impact of Entrepreneurial Leadership on SMEs' Performance: The Mediating Effects of Organizational Factors. *Heliyon* **2021**, *7*, e07326. [\[CrossRef\]](#) [\[PubMed\]](#)

70. Azeem, M.; Ahmed, M.; Haider, S.; Sajjad, M. Expanding Competitive Advantage through Organizational Culture, Knowledge Sharing and Organizational Innovation. *Technol. Soc.* **2021**, *66*, 101635. [[CrossRef](#)]
71. Runco, M.A.; Jaeger, G.J. The Standard Definition of Creativity. *Creat. Res. J.* **2012**, *24*, 92–96. [[CrossRef](#)]
72. Heljakka, K. Toys as Tools for Skill-Building and Creativity in Adult Life. *Seminar. Net.* **2015**, *11*, 11–12. [[CrossRef](#)]

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