

Business strategy, spiritual capital and environmental sustainability performance: mediating role of environmental management process

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Determinants
of
environmental
sustainability

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Abstract

Purpose – This study aims to investigate the influence of business strategy and spiritual capital on environmental sustainability performance. Furthermore, it investigates whether the influence is mediated by environmental management process.

Design/methodology/approach – This study is designed as a quantitative research. A survey method is employed for collecting 454 data from the managers/owners of Indonesian manufacturing micro, small and medium enterprises (MSMEs). The partial least squares-structural equation modeling (PLS-SEM) is used to test the hypothesis. A mediation research approach is employed to describe the relationship between research variables.

Findings – The findings demonstrate the following important results. First, business strategy affects environmental sustainability performance. Second, spiritual capital affects environmental sustainability performance. Third, environmental management process fully mediates the effect of business strategy on environmental sustainability performance. Fourth, environmental management process partially mediates the effect of spiritual capital on environmental sustainability performance.

Originality/value – This study addresses the issue of previous research gaps. By employing a mediation research framework, this study argues that environmental management process has a mediating role in business strategy–environmental sustainability performance relationships. Furthermore, it addresses the lack of empirical studies regarding the effect of spiritual capital on environmental sustainability performance via environmental management process. Thus, this research emphasizes the role of management or business process in developing resource-based view (RBV), natural resource-based view (NRBV), sustainability theory and MSMEs' management practices.

Keywords Business strategy, Spiritual capital, Environmental management process, Environmental sustainability performance, Corporate sustainability

Paper type Research paper

1. Introduction

Environmental degradation is a worldwide issue that threatens environmental sustainability (Sari *et al.*, 2020). Therefore, governments worldwide set various rules and standards to encourage companies to adopt environmentally friendly business strategies which are reflected in companies' business processes (Dixit, 2020; Couckuyt and Van Looy, 2021; Yasir *et al.*, 2020). In addition to business strategies, companies need to build their spiritual capital



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because it is closely related to sustainability (Zohar and Marshall, 2004; Astrachan *et al.*, 2020). An organization with a high moral intelligence tends to have a better value-based vision, global concern and compassion, and long-term thinking than low moral intelligence.

Studies regarding the effect of business strategy on environmental sustainability performance are still limited. Some scholars have tried to investigate the impact of business strategy on sustainability performance, and the results are inconsistent. Wijethilake (2017) and Yasir *et al.* (2020) showed that companies that have integrated sustainability issues into their business strategies can improve their sustainability performance. Meanwhile, van Essen *et al.* (2015) proved business strategy has a negative effect on performance. Hahn *et al.* (2018) also showed that companies with differentiation strategies cannot maintain their sustainability performance. The research gap motivates us to conduct the current study using a more specific construct and comprehensive research framework. We argue that the previous research gap is due to two main reasons. First, the construct of sustainability performance has too general meaning. Therefore, the current study employs environmental sustainability performance which has a more specific meaning. Second, previous studies tend to ignore the idea that business strategy does not directly affect sustainability performance, but through a mediator. Thus, we propose environmental management process as a mediating variable. The current study will increase understanding and develop literature on the determinants of environmental sustainability performance.

The impact of spiritual capital on sustainability performance has also been the concern of scholars since it was introduced by Zohar and Marshall (2004). Although spiritual capital is an interesting concept, it turns out that empirical studies on this topic are very limited. This gap also motivates us to conduct this current study. We argue that spiritual capital plays a strategic role in providing solutions to environmental sustainability problems, so it needs further investigation. In addition, spiritual capital should be the underlying value in every environmentally sound management process to ensure the success of environmental sustainability performance.

The introduction of environmental management process is supported by the triple bottom line (TBL) approach (Elkington, 1997) which becomes the main reference on sustainability. The success of implementing sustainability in the company depends on the success of managing trade-offs of the three dimensions of TBL, namely economic, social and environmental (Pádua and Jabbour, 2015). Sustainability management will be successful if it is carried out through an environmentally sound business management process (Sarkis *et al.*, 2006). Diabat and Govindan (2011) also stated that environmental management process in the form of green supply chain management is the best way to balance the three dimensions of TBL. Previous studies have supported the important role of green supply chain management (Chen *et al.*, 2012; Foo *et al.*, 2018; Haiyun *et al.*, 2021; Chin *et al.*, 2015; Whitelock, 2012; Yildiz Çankaya and Sezen, 2019). Unfortunately, empirical studies investigating the mediating role of environmental management process on the effect of both business strategy and spiritual capital on environmental sustainability performance are very limited. In the current study, we argue that environmental management process plays a key role as a mediator in achieving environmental sustainability performance.

In summary, to address the gaps in existing literature, the current study investigates the mediating role of environmental management process on business strategy–environmental sustainability performance relationship as well as on spiritual capital–environmental sustainability performance relationship. Thus, the current study has the following novelties. First, we propose a mediating research framework that provides a more comprehensive understanding of the mechanism to achieve environmental sustainability performance. Second, we focus on environmental sustainability issues using a more specific construct of environmental sustainability performance, not merely sustainability performance. Finally, our study is one of the first regarding business strategy, spiritual capital, environmental

business performance as the determinants of environmental sustainability performance in the developing countries, especially in Indonesia. Therefore, the current study has two main research questions as follows: (1) Does environmental management process mediate the effect of business strategy on environmental sustainability performance? (2) Does environmental management process mediate the effect of spiritual capital on environmental sustainability performance?

This study is designed as quantitative research using a survey method to collect the primary data from the owners/managers of manufacturing MSMEs in the East Java Province, Indonesia. It is important for MSMEs due to the lack of their understanding of the environmental sustainability. For example, 70% of 12,000 MSMEs in the East Java Province have disposed of their production waste into rivers due to inadequate production waste processing facilities, lack of business ethics and lack of environmental awareness (Wijayanto, 2018). Employing the mediation research framework and PLS-SEM, this study has the following main results. First, business strategy has a positive effect on environmental sustainability performance. Second, spiritual capital has a positive effect on environmental sustainability performance. Third, environmental management process fully mediates the effect of business strategy on environmental sustainability performance. Fourth, environmental management process partially mediates the effect of spiritual capital on environmental sustainability performance.

5 This study provides both theoretical and practical contributions. Theoretically, it provides empirical evidence for the development of RBV and NRBV in the research setting of MSMEs by investigating the role of business strategy in relation to environmental management process and environmental sustainability performance. It also provides empirical evidence of the importance of spiritual capital in improving environmental management process and environmental sustainability performance. Practically, this research provides a comprehensive framework for developing management practices and improving environmental sustainability performance of MSMEs by properly managing its antecedents, namely business strategy and environmental management process.

The rest of the paper is structured as follows. The next section provides a summary of the literature and hypothesis development. The following section explains methodology. The study results and discussions are reported afterward in the subsequent section. The contribution of the study is also reported. Finally, this study concludes with a brief conclusion, limitations and future research.

2. Literature review and hypothesis development

RBV encourages the use of internal resources to improve performance, both tangible and intangible resources (Collis, 1994; Abbas *et al.*, 2021). Those resources allow a company to create products that are more valuable compared to those of competitors (Barney, 2001; Kryscynski *et al.*, 2021). Those internal resources also play an important role in creating a sustainable competitive advantage and improving performance (Zhang and Walton, 2017; Yuliansyah *et al.*, 2021). The internal resources must meet the characteristics of valuable, rare, inimitable and non-substitutable (Barney, 1991; Bhandari *et al.*, 2020). RBV provides guidance for sustainability process because it can direct resources that have a significant impact on sustainability (Hart, 1995; Shahzad *et al.*, 2020). As stated by Hart (1995), natural RBV (NRBV) provides a foundation for competitive advantage by utilizing the natural environment-oriented resources. Environmentally friendly business strategy will minimize environmental damage (Moktadir *et al.*, 2020). NRBV also guides companies to consistently consider environmental aspects when they utilize their resources. Those internal resources provide the foundation for developing key competencies (Peteraf, 1993; Williamson *et al.*, 2012).

In line with sustainability, the triple bottom line (TBL) states that companies will improve their performance and competitive advantage when they can balance their social, economic and environmental business processes to achieve long-term business sustainability (Porter and Kramer, 2011). The company's responsibility to environmental issues must be the focus of their economic activities (Zeb *et al.*, 2021). Sustainability is the foundation of a business strategy prioritizing the environmentally friendly business processes to achieve a better environmental sustainability performance and to gain stakeholders' trust (Hart and Dowell, 2011; Wijethilake, 2017; Perner *et al.*, 2020; Khan *et al.*, 2021). Regarding spiritual capital, Zohar and Marshall (2004) stated that companies with high spiritual capital will be more sustainable because they have a better value-based vision, global concern and compassion, and long-term thinking.

2.1 Business strategy and environmental sustainability performance

RBV argues that a business strategy focusing on resources that have the characteristics of valuable, rare, inimitable and non-substitutable will increase the company's competitive advantage (Wernerfelt, 1984; Barney, 1991). Business strategy is the first step in assessing the capabilities that can form a unique company's identity (Hojmose *et al.*, 2013; Foroudi, 2020). Environmental sustainability performance is one important indicator of competitive advantages (Ahmed *et al.*, 2020; Yuan and Lo, 2020). Therefore, the integration of business strategy and environmental issues will support the company's sustainability goals in the future. The positive effect of business strategy on sustainability performance is supported by previous studies (Wijethilake, 2017; Yasir *et al.*, 2020). A study by Wijethilake (2017) in Sri Lanka showed the positive effect of sustainability strategy on sustainability performance. Yasir *et al.* (2020) conducted a study in Pakistan, and the result reveals a positive effect of business strategy on environmental performance. In this study, we argue that the better the environmentally friendly business strategy, the better the environmental sustainability performance. Based on the previous discussions, the following first hypothesis is proposed:

H1. Business strategy is positively associated with environmental sustainability performance.

2.2 Spiritual capital and environmental sustainability performance

In the era of the knowledge economy, intangible assets provide a greater value to companies. One of the intangible assets owned by a company is spiritual capital. Spiritual capital provides greater benefits by running a business through a broader context of meaning and value so that it increases the wealth of soul and human welfare (Zohar and Marshall, 2004; Zohar, 2010; Osunmakinde *et al.*, 2021). The issue of sustainability closely relates to the spiritual aspect which can enhance trust and confidence to external parties regarding the company's sustainability performance.

The effect of spiritual capital on sustainability performance is rarely researched. Some scholars have tried to investigate another type of intangible asset, namely intellectual capital. They have examined the influence of intellectual capital on sustainability performance (Massaro *et al.*, 2018; Yusoff *et al.*, 2019; Malik *et al.*, 2020). Massaro *et al.* (2018) proved the influence of intellectual capital on sustainability. A study by Yusoff *et al.* (2019) in Malaysia proved the effect of green intellectual capital on business sustainability. Another study by Malik *et al.* (2020) in Pakistan proved the effect of green intellectual capital on organizational sustainability. Based on the previous discussions, the current study argues that spiritual capital will influence environmental sustainability performance. Thus, the following second hypothesis is proposed:

H2. Spiritual capital is positively associated with environmental sustainability performance.

2.3 Business strategy and environmental management process

Internal resources are crucial for achieving the company's competitive advantage (Barney, 1991). Company needs to establish a business strategy that must be executed through the most effective internal business processes (Santos *et al.*, 2020). In the era of sustainability, an environmentally friendly business strategy will attract external parties (Ahmed *et al.*, 2020; Abdallah and Al-Ghwayeen, 2020). Thus, the effectiveness of management process plays an important role in the success of a strategy execution.

The positive influence of business strategy on environmental management process in the form of green supply chain management is supported by previous studies (Chen *et al.*, 2012; Whitelock, 2012; Haiyun *et al.*, 2021). Chen *et al.* (2012) proved the effect of business strategy on green supply chain management by using samples from the electronic companies' processes. A study by Whitelock (2012) revealed the effect of business strategy on green supply chain management. Another study by Haiyun *et al.* (2021) also proved the effect of innovation strategies on green supply chain management. Based on the previous discussions, the current study argues that environmentally friendly business strategy will influence environmental management process. Thus, the following third hypothesis is proposed:

H3. Business strategy is positively associated with environmental management process.

2.4 Spiritual capital and environmental management process

Intangible resources are one of the internal resources that provide a long-term competitive advantage for companies, including spiritual capital. Unfortunately, empirical studies investigating the effect of spiritual capital on environmental management process are also rare. Abdullah and Sofian (2012) stated that for the company's business continuity, good spiritual capital is needed. Spiritual capital can build intelligent people who are able to manage their emotions well (Skrzypińska, 2021). Therefore, it is necessary to utilize spiritual capital in the company's business processes that prioritize environmental issues to improve company's performance. Some scholars who have investigated intellectual capital reveal the positive influence of intellectual capital on environment management process, specifically in the case of supply chain management (Shou *et al.*, 2018, 2020). Based on the previous arguments, the current study argues that spiritual capital influences environmental management process. Therefore, the following fourth hypothesis is proposed:

H4. Spiritual capital is positively associated with environmental management process.

2.5 Environmental management process and environmental sustainability performance

Utilization of companies' internal resources with an orientation to environmental preservation and sustainable development improves performance (Hart, 1995; Cankaya and Sezen, 2018; Zhou *et al.*, 2020). Therefore, these resources must be utilized through a proper environmentally friendly management process. In the era of sustainability, companies are required to obtain long-term benefits while reducing environmental and social risks (Alsayegh *et al.*, 2020). Environmentally oriented management process is an important part for reducing the negative impact of business operations (Bhanot *et al.*, 2017; Foo *et al.*, 2018; Raza, 2020). Thus, an environmental management process will improve sustainability performance in terms of economic, environmental and social goals.

The positive influence of environmental management process, specifically green supply chain management on sustainability performance is supported by previous studies (Foo *et al.*, 2018; Yildiz Çankaya and Sezen, 2019; Han and Huo, 2020). Foo *et al.* (2018) proved the effect of green supply chain management on sustainability performance on manufacturing companies in Malaysia. Yildiz Çankaya and Sezen (2019) demonstrated the effect of green supply chain management practices on sustainability performance in Turkey. Han and Huo (2020)

provides evidence that green supply chain integration has a positive effect on sustainable performance by using a sample of 206 manufacturing companies in China. Based on the previous discussions, the current study argues that environmental management process influences environmental sustainability performance. Therefore, the following fifth hypothesis is proposed:

H5. Environmental management process is positively associated with environmental sustainability performance.

2.6 Spiritual capital and environmental management process

Following RBV, companies are required to have business strategies emphasizing sustainability (Rajeev *et al.*, 2017; Foo *et al.*, 2018; Shahzad *et al.*, 2020). In the era of sustainability, the focus of corporate performance has changed from only maximizing economic performance to maximizing economic performance along with environmental and social performance (Alsayegh *et al.*, 2020; Jyoti and Khanna, 2021). In the demands of environmental preservation, companies need to have strategies that are responsible for environmental issues. Thus, it is necessary to integrate environmental aspects into business strategies that need to be executed through an environmentally friendly management process to gain environmental sustainability performance.

Previous studies have proven the influence of business strategy on sustainability performance (Wijethilake, 2017; Yasir *et al.*, 2020). Previous studies have also proven the influence of business strategy on the environment management process, in the form of green supply chain management (Chen *et al.*, 2012; Whitelock, 2012; Haiyun *et al.*, 2021). Previous studies have proven the influence of green supply chain management on sustainability performance (Foo *et al.*, 2018; Yildiz Çankaya and Sezen, 2019). Based on the previous descriptions, the following sixth hypothesis is proposed:

H6. Environmental management process mediates the effect of business strategy on environmental sustainability performance.

2.7 Environmental management process mediates the effect of spiritual capital on environmental sustainability performance

The use of intangible resources provides more competitive advantage compared to tangible resources. Spiritual capital is one of intangible assets which is more difficult to imitate. Spiritual capital is a force that creates a person's trust, confidence and commitment (Porth *et al.*, 1999; Zohar and Marshall, 2004; Long and Mills, 2010). Spiritual capital creates a unique capability that is valuable, rare, difficult to imitate and non-substitutable. Integrating spiritual capital in environmental management processes will increase stakeholders' trust and sustainability performance.

Previous studies on spiritual capital are rare. However, previous studies have proven the influence of intellectual capital on sustainability performance (Massaro *et al.*, 2018; Yusoff *et al.*, 2019; Malik *et al.*, 2020), influence of intellectual capital on supply chain management (Shou *et al.*, 2018, 2020) and influence of green supply chain management on sustainability performance (Foo *et al.*, 2018; Yildiz Çankaya and Sezen, 2019). Based on the previous discussions, the following seventh hypothesis is proposed:

H7. Environmental management process mediates the effect of spiritual capital on environmental sustainability performance.

This study investigates the effect of business strategy and spiritual capital on environmental sustainability performance with environmental management process as a mediating variable. Figure 1 presents the conceptual framework of this study.

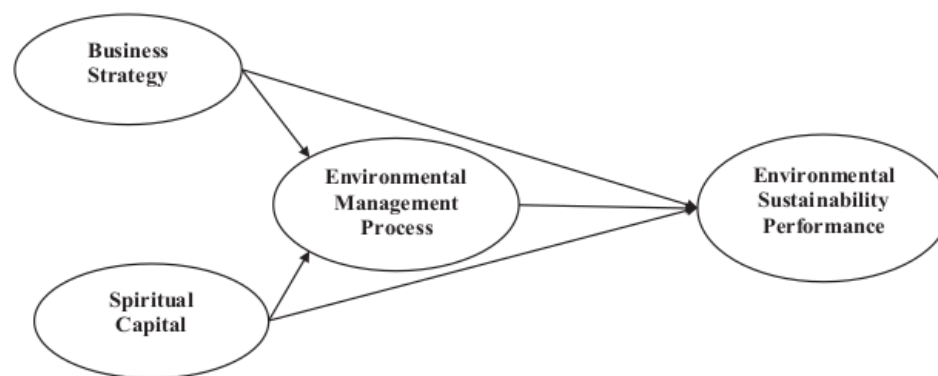


Figure 1.
Conceptual framework

3. Methodology

3.1 Sample and data collection

The data was derived from the database of the Department of Cooperatives and MSMEs of East Java Province which consists of 2,880 manufacturing MSMEs. Purposive sampling method was used to obtain the research samples with the following criteria: (1) MSMEs must have complete names and addresses so that the hard copy questionnaire can be sent to the target; (2) MSMEs must have clear email addresses so that the soft copy questionnaire can be sent to the target; (3) MSMEs must have WhatsApp application contacts so that soft copy questionnaires can be sent and monitored regularly. Because not all MSMEs have clear business names, addresses and contact persons, the sample criteria are very important as the guideline for the surveyors in sending, tracking and monitoring the questionnaires. Based on these criteria, 2,556 manufacturing MSMEs were obtained. Primary data was collected through online and offline surveys.

Before the questionnaires were distributed to respondents, a pilot test was conducted on 35 MSMEs in the city of Surabaya. The results of the pilot test confirmed that the questionnaire items were valid and reliable. Furthermore, because of the COVID-19 pandemic and social distance restrictions as many as 2,000 online questionnaires were distributed to respondents in the East Java region. The offline survey was conducted only in Surabaya Raya regions (Surabaya, Gresik, Sidoarjo). Each questionnaire was accompanied by a cover letter explaining the aims and objectives of the study and ensuring the confidentiality of respondents' answers. Every two weeks, respondents who did not fill out the questionnaire were reminded. After three months of data collection period, 459 questionnaires were obtained, and 454 questionnaires were ready for further processing. Thus, we consider that the sample is adequate because the response rate is 23% exceeding the normal response rate of 20%, and PLS-SEM does not require a large sample size.

3.2 Characteristics of respondents

Table 1 presents the characteristics of respondents. Respondents are dominated by the managers/owners of MSMEs who are in the food and beverage manufacturing (67%), with annual sales of Rp. 300 million (61%) and with less than 5 employees (46%).

Table 2 shows the descriptive statistics of the study. This descriptive analysis provides information about the mean and standard deviation of 454 respondents. Respondents "agree" and "strongly agree" with the statements in the questionnaire. It can be concluded that the average MSMEs in East Java have considered the importance of environmentally friendly business strategy, spiritual capital and business process management in achieving their environmental sustainability performance.

Table 1.
Characteristics of
respondents

	Description	Frequency	
		Absolute	Percentage (%)
Type of business	Handicrafts and others	95	21
	Household appliances	55	12
	Food and beverages	304	67
	Total	454	100
Annual sales	≤IDR 300 million	278	61
	>IDR 300 million–2.5 billion	134	30
	>IDR 2.5–50 billion	42	9
	Total	454	100
Number of employees	<5	208	46
	5–10	151	33
	11–15	63	14
	>15	32	7
	Total	454	100

Table 2.
Descriptive statistics

	N	Minimum	Maximum	Mean	Std. deviation
BS	454	1.63	5	3.98	0.73
SC	454	1.92	5	4.05	0.54
EMP	454	1.67	5	4.15	0.62
ESP	454	2.7	5	4.33	0.59

3.3 Definitions and measurements

3.3.1 Business strategy. Business strategy is defined as the company's environmentally friendly efforts to integrate resources to get a competitive advantage in business competition and to achieve superior performance. To measure environmentally friendly business strategy, the following 8 statements are developed from Bentley (2013).

3.3.2 Spiritual capital. Spiritual capital is defined as an intangible resource utilized by a company as a moral intelligence in conducting activities. Spiritual capital takes a wider part than other capital and is used as a buffer for other capitals (Zohar and Marshall, 2004). Therefore, spiritual capital provides greater benefits through a broader context of meaning and value to increase the wealth of soul and human welfare. To measure spiritual capital, the following 12 statements developed by Zohar and Marshall (2004).

3.3.3 Environmental management processes. Environmental management process is defined as the integration of environmental issues into the company's management process. The environmental management process aims to reduce environmental damage due to the company's business activities. The environmentally friendly business practices encourage environmental management processes that can improve sustainable business performance. To measure environmental management process, 9 statements based on Chen *et al.* (2012) and Hoejmose *et al.* (2013).

3.3.4 Environmental sustainability performance. Environmental sustainability performance is defined as a form of responsibility in responding to the impacts of a company's activities on environmental damage (Koo *et al.*, 2014; Foo *et al.*, 2018). Environmental sustainability performance provides confidence to external parties that the company utilizes sustainability-oriented resources to provide and maintain the future capabilities (Foo *et al.*, 2018). Based on Harrington *et al.* (2016), 10 statements are developed to measure environmental sustainability performance.

All variables are measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire of the current study is presented in the appendix.

4. Statistical analysis and results

4.1 Common method of variance (CMV)

Collecting data using a survey method has the potential issue of CMV. To overcome this issue, we employ two control procedures, namely ex-ante and ex-post. Ex-ante is carried out with several test procedures suggested by Podsakoff *et al.* (2003), namely (1) conducting a pilot test of the questionnaire to 35 managers to ensure their understanding of the statement items; and (2) providing an explanation in the cover letter of the questionnaire regarding anonymity, honest answer requests, and no right or wrong answers. According to Kock (2015), the ex-post procedure can be carried out using the value of VIF full collinearity and is declared free from bias if the value is less than or equal to 3.3. Using the WarpPLS 7.0 software, the VIF value of each latent variable is less than 3.3 (BS = 1.912; SC = 3.278; EMP = 3.257; and ESP = 2.221). In conclusion, this study is free from the issue of CMV.

4.2 Correlational analysis

Table 3 shows the results of Pearson correlation between the independent variable, mediating variables and dependent variable. A significance value of above 0.5 indicates a strong correlation, and a value of below 0.5 indicates a weak correlation. Meanwhile, a positive sign indicates that the correlation is unidirectional.

4.3 Use of PLS-SEM

Although this study investigates the direct effect between variables, it focuses on two issues, namely (1) the mediating role of environmental management process on business strategy–environmental sustainability performance relationship and (2) the mediating role of environmental management process on spiritual capital–environmental sustainability performance relationship. To address the issues, we employ the PLS-SEM for the following reasons: (1) it has the ability to measure latent variables with several indicators (Mikulić and Ryan, 2018); (2) it is able to test a complex model without a normal distribution requirement (Hair *et al.*, 2017; Vinzi *et al.*, 2010); (3) it can use a relatively small sample (Marcoulides and Saunders, 2006; Hair *et al.*, 2017; Sarstedt *et al.*, 2014). The PLS-SEM analysis consists of two steps, namely (1) the measurement model analysis; (2) the structural model analysis.

4.4 Measurement model analysis

The measurement model analysis is used to test the validity and reliability of the indicators for each construct. It consists of the following tests: (1) convergent validity test is used to

	BS	SC	EMP	ESP
BS	1	0.680***	0.551***	0.509***
SC	0.680***	1	0.772***	0.658***
EMP	0.551***	0.772***	1	0.729***
ESP	0.509***	0.658***	0.729***	1

Note(s): ***Correlation is significant at the 0.01 level (2-tailed)

Table 3.
Pearson correlation
analysis

determine the correlation of each indicator on a latent variable using the factor loading of greater than 0.6 (Chin, 1998; Hair *et al.*, 2017). The average variance extracted (AVE) is also used as an indicator with a value of more than 0.5 (Hair *et al.*, 2017); (2) Internal consistency reliability is assessed using composite reliability value and the Cronbach's alpha of more than 0.7, although a value of 0.6–0.7 is still acceptable (Nunnally and Durham, 1975; Segars, 1997); (3) Discriminant validity test is used to determine whether the latent variable measures different things from other latent variables by comparing the square root of the AVE with the correlation between latent variables. It is valid if the square root of AVE is greater than the correlation between latent variables (Segars, 1997).

Table 4 shows that the factor loading value for each indicator is greater than 0.6, the AVE value of business strategy = 0.661, spiritual capital = 0.574, environmental management process = 0.610 and environmental sustainability performance = 0.593. With the factor loading value for each indicator greater than 0.6 and the AVE value for each latent variable is greater than 0.5, this study has passed the convergent validity test.

The internal consistency reliability test aims to test the reliability of the research model. It is reliable if each latent variable has a composite reliability value of more than 0.7. Table 4 shows that each latent variable has a composite reliability value of more than 0.7. Thus, this study meets the internal consistency reliability test. Furthermore, the discriminant validity test aims to ensure that the latent variable does not measure the same thing as other latent variables. It is valid if the square root value of AVE is greater than the other variables. Table 5 presents the results of discriminant validity test showing that each latent variable has the greatest value compared to other latent variables. Thus, this study meets the requirements of the discriminant validity test. In conclusion, the measurement model of this study is valid and reliable.

4.5 Structural model analysis

Structural model analysis is used to test the hypotheses studied by analyzing the causal relationship between latent variables. The first step is to test the direct effect of business

Construct	Factor loading	p-value	Construct	Factor loading	p-value
BS 1	0.716	<0.001	SC 1	0.771	<0.001
BS 2	0.800	<0.001	SC 2	0.710	<0.001
BS 3	0.832	<0.001	SC 3	0.813	<0.001
BS 4	0.875	<0.001	SC 4	0.707	<0.001
BS 5	0.873	<0.001	SC 5	0.753	<0.001
BS 6	0.854	<0.001	SC 6	0.753	<0.001
BS 7	0.725	<0.001	SC 7	0.686	<0.001
			SC 8	0.822	<0.001
			SC 9	0.791	<0.001
EMP 1	0.823	<0.001	ESP 1	0.761	<0.001
EMP 2	0.850	<0.001	ESP 2	0.651	<0.001
EMP 3	0.792	<0.001	ESP 3	0.784	<0.001
EMP 4	0.847	<0.001	ESP 4	0.619	<0.001
EMP 5	0.772	<0.001	ESP 5	0.820	<0.001
EMP 6	0.712	<0.001	ESP 6	0.835	<0.001
EMP 7	0.710	<0.001	ESP 7	0.861	<0.001
EMP 8	0.744	<0.001	ESP 8	0.794	<0.001
EMP 9	0.765	<0.001	ESP 9	0.839	<0.001
			ESP 10	0.698	<0.001
CR	BS: 0.931	SC: 0.924	EMP: 0.933	ESP: 0.935	
AVE	BS: 0.661	SC: 0.574	EMP: 0.610	ESP: 0.593	

Table 4. Measurement model analysis

1 strategy and spiritual capital on environmental sustainability performance. The second step is to test indirect effect of business strategy and spiritual capital on environmental sustainability performance by including environmental management process as a mediating variable. Table 6 (Panel A) shows that business strategy has a positive and significant effect on environmental sustainability performance (β coefficient = 0.55; p -value < 0.01). Thus, H1, stating that business strategy is positively associated with environmental sustainability performance, is supported.

Further results show that spiritual capital is positively associated with environmental sustainability performance (β coefficient = 0.74; p -value < 0.01). Thus, H2, stating that spiritual capital is positively associated with environmental sustainability performance, is supported.

Table 6 (Panel B) presents the results of indirect tests after including environmental management process as the mediating variable. It shows the positive influence of business strategy on environmental management process (β coefficient = 0.13; p -value < 0.01). This supports H3 stating that business strategy is positively associated with environmental management process. The influence of spiritual capital on environmental management process is positive and significant (β coefficient = 0.66; p -value < 0.01). This result supports H4 stating that spiritual capital is positively associated with environmental management process. The influence of environmental management process on environmental sustainability performance is positive and significant (β coefficient = 0.42; p -value < 0.01). This supports H5 stating that environmental management process is positively associated with environmental sustainability performance.

In assessing the role of mediation, this study refers to Baron and Kenny (1986) explaining the following rules: (1) if the coefficient on the direct effect is the same as when the mediation variable is added and remains significant, then mediation is not supported; (2) if the

	ESP	SC	BS	EMP
Environmental sustainability performance (ESP)	0.770	0.729	0.504	0.722
Spiritual capital (SC)	0.729	0.758	0.641	0.750
Business strategy (BS)	0.504	0.641	0.813	0.543
Environmental management process (EMP)	0.722	0.750	0.543	0.781

Table 5. Result of discriminant validity

Panel A: Direct effect (before including the mediating variable)

Variable	Path to Environmental sustainability performance (ESP)
Business strategy (BS)	0.55 ^{***}
Spiritual capital (SC)	0.74 ^{***}

Panel B: Full model (after including the mediating variable)

Variable	Path to	
	Environmental management process (EMP)	Environmental sustainability performance (ESP)
Business strategy (BS)	0.13 ^{***}	0.04 ^{NS}
Spiritual capital (SC)	0.66 ^{***}	0.39 ^{***}
Environment management process (EMP)		0.42 ^{***}

Note(s): ^{***} p < 0.01; ^{**} p < 0.05; ^{*} p < 0.1; NS = Not significant

Table 6. Results of structural model analysis

3 coefficient of the direct effect after adding the mediation variable has decreased but it is still significant, then the form of mediation is the partial mediation; (3) if the coefficient on the direct effect after adding the mediation variable becomes insignificant, then the form of mediation is full mediation.

7 Panel A shows a positive and significant influence of business strategy on environmental sustainability performance (β coefficient = 0.55; p -value < 0.01). Panel B shows insignificant influence of business strategy on environmental sustainability performance (β coefficient = 0.04; p -value = 0.18). Because the coefficient on the direct effect after adding the mediation variable becomes insignificant, then the form of mediation is full mediation. This supports H6 stating that environmental management process mediates the effect of business strategy on environmental sustainability performance. Furthermore, Panel A shows a positive and significant influence of spiritual capital on environmental sustainability performance (β coefficient = 0.74; p -value < 0.01). Panel B shows significant influence of spiritual capital on environmental sustainability performance (β coefficient = 0.39; p -value < 0.01). Because the coefficient of the direct effect after adding the mediation variable has decreased but is still significant, then the form of mediation is partial mediation. This supports H7 stating that environmental management process mediates the effect of spiritual capital on environmental sustainability performance (see Figure 2).

5. Discussion

5.1 Effect of business strategy on environment sustainability performance

One of the goals of this study is to investigate the direct effect of business strategy on environmental sustainability performance. This is due to the gap or inconsistent results in the previous studies regarding the relationship. Using the research setting of the Indonesian MSMEs, the result empirically proves that business strategy positively influences environmental sustainability performance. As theoretically predicted, this finding is in line with RBV, NRBV and sustainability theory stating that the capabilities in properly managing environmentally friendly business strategies increases sustainability performance. The findings also support the previous studies of Wijethilake (2017) and Yasir et al. (2020). Thus, this study contributes to the development of the theories used by providing empirical evidence that environmentally friendly business strategy is positively associated with environmental sustainability performance. Practically, the results support the efforts of the Indonesian government and non-government agencies that have conducted various training programs for the MSMEs. The training programs include the improvements of MSMEs' capabilities in green strategies such as green products, clean production, zero waste,

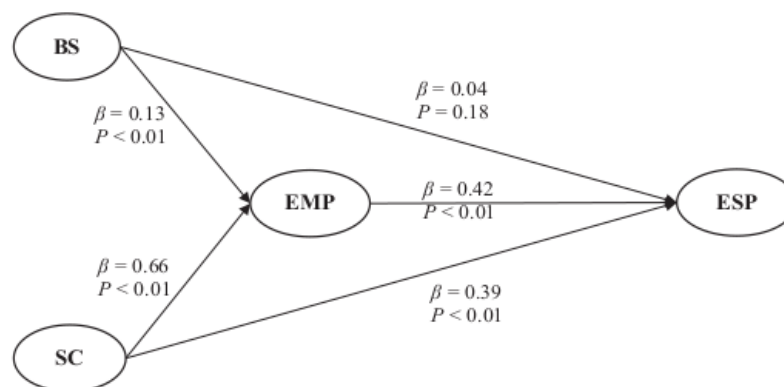


Figure 2. Results of structural model analysis

wastewater management and environmentally friendly packaging. With these programs, the MSMEs will have the capabilities to implement environmentally friendly business strategies to enhance their environment sustainability performance.

5.2 Effect of spiritual capital on environmental sustainability performance

Because of the lack of empirical studies, this research also aims to examine the effect of spiritual capital on environmental sustainability performance. Some scholars have tried to investigate the effect of other types of intangible assets, namely intellectual capital and its effect on sustainability performance (Massaro *et al.*, 2018; Yusoff *et al.*, 2019; Malik *et al.*, 2020), and the results reveal that intellectual capital affects sustainability performance. Referring to RBV, spiritual capital is one of the intangible resources that provide a more value compared to tangible resources in the era of knowledge economy. As stated by Zohar and Marshall (2004), companies with higher spiritual capital will gain a better sustainability performance. The finding of the current study confirms that spiritual capital has a positive effect on environmental sustainability performance of the Indonesian MSMEs. The finding is in line with RBV and the previous studies of intellectual capital. The findings confirm the following facts: (1) the Indonesian government and community have pushed MSMEs to increase their moral and ethical awareness to protect the environment for future generations; (2) MSMEs are trained to improve their business ethical behavior for the environment preservation. For example, the practice of throwing garbage by MSMEs to the Ledeng river in Mojokerto region is not an ethical conduct because it causes environmental damage (Budianto and Eko, 2019). The findings have practical and theoretical contributions that by having a higher spiritual capital, MSMEs increase their understanding of environmental and business sustainability.

5.3 Effect of business strategy on environmental management process

The goal of this study is to emphasize the mediating role of environmental management process. Thus, to examine the direct effect of business strategy on environmental management process is a crucial step. The result of this study empirically proves that business strategy has a positive effect on environmental management process. As predicted, this is in line with RBV, NRBV and sustainability theory as well as the previous studies of Chen *et al.* (2012), Whitelock (2012) and Haiyun *et al.* (2021). Companies need to develop strategies which must be effectively executed through management or business processes. Environmentally friendly strategies and management processes will increase stakeholders' trust. The Indonesian government agencies and non-government organizations have provided training series to the manufacturing MSMEs regarding the implementation of environmentally friendly production processes. For example, the MSMEs are trained to use natural-based materials for their traditional *batik* cloth products, application of green technology, fuel conversion, application of waste treatment plants in the Sidoarjo Regency. Referring to RBV, the capability to execute strategy into effective business processes is one of crucial internal resources. In addition to theoretical contribution, the findings contribute to the development of management practices showing that increased capabilities in environmentally friendly business strategies can improve MSMEs' environmental management process.

5.4 Effect of spiritual capital on environmental management process

This study aims to prove the vital role of environmental management process in spiritual capital-environmental sustainability performance relationship. Therefore, to examine the direct effect of spiritual capital on environmental management process is also a crucial step.

Studies on the effect of spiritual capital on environmental management process are still rare. Some researchers have investigated the other form of intangible assets, namely intellectual capital on green supply chain management (Shou *et al.*, 2018, 2020). The results empirically prove that intellectual capital influences green supply chain management. RBV argues that intangible resources, including spiritual capital are the main source of companies' competitive advantage. Spiritual capital is one of the intangible resources that becomes a buffer for other capitals because of its capabilities to take the widest part (Zohar and Marshall, 2004). Therefore, the integration of spiritual capital into a company's environmentally friendly management process will certainly improve the company's long-term sustainability performance. In the current study of the Indonesian MMSMEs, the findings provide empirical evidence that spiritual capital affects environmental management process. The findings contribute to the development of RBV. The results also support the efforts of the government agencies and non-governmental organizations that have pushed the MSMEs to conduct their activities in accordance with moral principles, business ethics and environmental preservation.

11 5.5 Effect of environmental management process on environmental sustainability performance

The key role of environmental management process in enhancing environmental sustainability performance is the final path to examine. The result of this study empirically proves that environmental management process has a positive effect on environmental sustainability performance. This result is predicted by RBV, NRBV and sustainability theory arguing that an excellent process capability is one of the key internal resources to enhance performance. This finding is also in line with the previous studies conducted by Chin *et al.* (2015), Foo *et al.* (2018), Yildiz Çankaya and Sezen, 2019, Han and Huo (2020) regarding the effect of green supply chain management on sustainability performance. In the era of sustainability, environmentally friendly management processes will improve sustainability performance. In conclusion, the findings of the current study contribute to the development of theories used. The results also contribute to the improvement of MSMEs' management practices. It is important to understand that environmentally friendly production processes create green businesses in terms of new business opportunities, improved efficiencies and environmental preservations.

11 5.6 Mediating role of environmental management process on the effect of business strategy–environmental sustainability performance relationship

The core value of this study is proving that environmental management process is a mediator in the relationship between business strategy on environmental sustainability performance. The finding empirically proves that environmental management process fully mediates the effect of business strategy on environmental sustainability performance. As argued by RBV, internal resources that have the characteristics of valuable, rare, difficult to imitate and non-substitutable are the main pillars of a good business strategy. In the era of sustainability, sustainability performance becomes the focus amid the environmental damages. Environmental sustainability becomes a global concern (Chen *et al.*, 2012; Ma *et al.*, 2020). Therefore, the integration of sustainability issues in the company's business strategy is crucial. The strategy must be effectively executed through business or management processes. The success of internal business process execution determines the company's sustainability performance (Højmoser *et al.*, 2013; Narimissa *et al.*, 2020).

The findings provide more comprehensive evidence for developing RBV, NRBV and sustainability theory using the research setting of MSMEs. The results become a practical guidance for government agencies and non-government organizations to develop MSMEs in

the era of sustainability. By improving the capabilities in formulating and implementing environmentally friendly business strategy, MSMEs will improve their green production processes, then MSMEs will achieve better environmental sustainability performance. For example, the government agencies have trained the traditional *batik* clothes MMSMEs to develop eco-friendly business strategies, encourage them to use natural dyes, implement green technology, apply fuel conversion and build waste treatment places to improve environmental performance.

5.7 Mediating role of the environment management process on spiritual capital–environmental sustainability performance relationship

Another main value of this study is proving that environmental management process is a mediator in the relationship between spiritual capital and environmental sustainability performance. As predicted by RBV, NRBV and sustainability theory, the result empirically proves that environmental management process partially mediates the effect of spiritual capital on environmental sustainability performance. The finding is in line with Zohar and Marshall (2004) stating that companies with higher spiritual capital will be more sustainable because a high moral intelligence tends to drive a better values-based vision, global concern and compassion and long-term thinking. Spiritual capital must become the foundation of the companies' internal business processes to enhance trust from external and internal parties. The better the spiritual capital, the better environmental management process and the better environmental sustainability performance.

The findings contribute to the development of RBV, NRBV and sustainability theory. Practically, the results also provide a comprehensive understanding of the mechanism on how spiritual capital can improve environmental management process and a good process can enhance environmental sustainability performance. The results also support the fact that the MSMEs are encouraged to apply moral principles and business ethics in their activities, especially in the relation to environmental conservation. The government and society have encouraged the implementation of green production processes to improve environmental sustainability performance in the form of improved human resources with high moral principles and ethical conduct, improved cost savings, increased productivity and increased opportunities for environmentally friendly products.

6. Conclusion, implications and future research

6.1 Conclusion

Using data of 454 manufacturing MSMEs in the East Java Province, Indonesia, the current study investigates the associations of four constructs, namely business strategy, spiritual capital, environmental management process and environmental sustainability performance. We employ RBV, NRBV and sustainability theories to explain the relationship between those constructs. The PLS-SEM is used to test the hypotheses, and the results show that all hypotheses are supported. The results have addressed the two main research questions previously stated in the methodology and become the main contributions of this study. First, environmental management process fully mediates the relationship between business strategy and environmental sustainability performance. Second, environmental management process partially mediates the relationship between business strategy and environmental sustainability performance. The results prove that environmental management process is the mediator as proposed. Thus, the current study proves that business strategy and spiritual capital do not directly affect environmental sustainability performance but through environmental management process. The vital role of business or management process has been empirically proven.

6.2 Theoretical contributions

Theoretically, the current study enhances the existing literature on business strategy, spiritual capital and business process in relation to companies' performance. First, it provides additional empirical evidence on the positive effect of business strategy on environmental sustainability performance. It also addresses the lack of empirical studies regarding the positive effect of spiritual capital on environmental sustainability performance. Second, the current study empirically proves the important role of environmental management process in mediating both business strategy and spiritual capital in improving environmental sustainability performance. The findings also strengthen literature on the critical role of business process management in enhancing companies' performance. Specifically, it provides empirical evidence about the full mediating effect of environmental management process on business strategy–environmental sustainability performance relationship as well as the partial mediating effect of environmental management process on spiritual capital–environmental sustainability performance relationship. Investigating the mediating effect of environmental management process is rarely investigated, and therefore, it contributes to the scarcity of literature. In summary, these findings also imply that RBV, NRBV and sustainability theories are relevant to explain the determinants of environmental sustainability performance.

6.3 Practical contributions

Practically, this research has the following contributions. First, it can be used as a teaching material for lecturers and students who are interested in studying topics related to business strategy, spiritual capital, environmental management process and environmental sustainability performance. Second, it can be used by the community to further understand and analyze the determinants of environmental sustainability performance to achieve a better community welfare.

6.4 Managerial implications

The current study has managerial implications. First, it improves the understanding of owners/managers on the mechanism of how to enhance environmental sustainability performance. Second, it implies that in achieving a better environmental sustainability performance, the owners/managers of MSMEs need to properly manage environment friendly business strategies, spiritual capital and environmental management processes in their activities. Third, it has important implications in the form of new policies or approaches in developing MSMEs.

6.5 Limitations and future research

The current study has limitations. First, this study uses the survey method to collect the primary data. Unfortunately, the COVID-19 pandemics limits field survey activities, causing data collection to not be as expected, although the data are still sufficient for further analysis. Future researchers are encouraged to use the secondary data to test the same model. Second, the study uses online questionnaires to collect data. Some respondents have expressed their difficulties with online questionnaires because of their lack of digital literacy. A proper proportion between online and hardcopy questionnaires is suggested for future studies. Third, the sample size is limited to the MSMEs in the East Java Province. Thus, a caution must be applied when generalizing the results to other regions. Future researchers are encouraged to expand the sample size covering other regions to get a better generalization. Fourth, this study is designed as quantitative research. Consequently, an in-depth interview is not conducted, and this might cause that in-depth assessment and analysis cannot be

sufficiently presented. Future research can use qualitative approaches to get deeper insights of the MSMEs' sustainability performance. Finally, this study limits only three determinants of sustainability performance. Other relevant variables, such as green human capital, green leadership, green organization capital and green reputation that might have significant effects on sustainability performance are not included in this current study. Future researchers are suggested to explore those factors in their research model.

References

- Abbas, Z., Sarwar, S., Rehman, M.A., Zámečník, R. and Shoaib, M. (2021), "Green HRM promotes higher education sustainability: a mediated-moderated analysis", *International Journal of Manpower*, Vol. 43 No. 3, pp. 827-843, doi: [10.1108/IJM-04-2020-0171](https://doi.org/10.1108/IJM-04-2020-0171).
- Abdallah, A.B. and Al-Ghwayeen, W.S. (2020), "Green supply chain management and business performance: the mediating roles of environmental and operational performances", *Business Process Management Journal*, Vol. 26 No. 2, pp. 489-512, doi: [10.1108/BPMJ-03-2018-0091](https://doi.org/10.1108/BPMJ-03-2018-0091).
- Abdullah, D.F. and Sofian, S. (2012), "The relationship between intellectual capital and corporate performance", *Procedia-Social and Behavioral Sciences*, Vol. 40, pp. 537-541.
- Ahmed, Z., Asghar, M.M., Malik, M.N. and Nawaz, K. (2020), "Moving towards a sustainable environment: the dynamic linkage between natural resources, human capital, urbanization, economic growth, and ecological footprint in China", *Resources Policy*, Vol. 67, 101677.
- Alsayegh, M.F., Abdul Rahman, R. and Homayoun, S. (2020), "Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure", *Sustainability*, Vol. 12 No. 9, 3910.
- Astrachan, J.H., Binz Astrachan, C., Campopiano, G. and Baù, M. (2020), "Values, spirituality and religion: family business and the roots of sustainable ethical behavior", *Journal of Business Ethics*, Vol. 163 No. 4, pp. 637-645.
- Barney, J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Barney, J.B. (2001), "Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view", *Journal of Management*, Vol. 27 No. 6, pp. 643-650, doi:[10.1177/014920630102700602](https://doi.org/10.1177/014920630102700602).
- Baron, R.M. and Kenny, D.A. (1986), "The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, p. 1173.
- Bentley, A.F. (2013), *The Process of Government*, Harvard University Press, Cambridge, MA, London.
- Bhandari, K.R., Rana, S., Paul, J. and Salo, J. (2020), "Relative exploration and firm performance: why resource-theory alone is not sufficient?", *Journal of Business Research*, Vol. 118, pp. 363-377.
- Bhanot, N., Rao, P.V. and Deshmukh, S.G. (2017), "An integrated approach for analyzing the enablers and barriers of sustainable manufacturing", *Journal of Cleaner Production*, Vol. 142, pp. 4412-4439.
- Budianto and Eko, E. (2019), "Sungai Ledeng di Mojokerto Diduga Tercemar Limbah dari 14 UKM Ini", available at: <https://news.detik.com/berita-jawa-timur/d-4777219/sungai-ledeng-di-mojokerto-diduga-tercemar-limbah-dari-14-ukm-ini>
- Cankaya, S.Y. and Sezen, B. (2018), "Effects of green supply chain management practices on sustainability performance", *Journal of Manufacturing Technology Management*, Vol. 30 No. 1, pp. 98-121, doi: [10.1108/JMTM-03-2018-0099](https://doi.org/10.1108/JMTM-03-2018-0099).
- Chen, C.C., Shih, H.S., Shyur, H.J. and Wu, K.S. (2012), "A business strategy selection of green supply chain management via an analytic network process", *Computers and Mathematics with Applications*, Vol. 64 No. 8, pp. 2544-2557, doi: [10.1016/j.camwa.2012.06.013](https://doi.org/10.1016/j.camwa.2012.06.013).

- Chin, W.W. (1998), "Commentary: issues and opinion on structural equation modeling", *MIS Quarterly*, Vol. 22 No. 1, pp. vii-xvi.
- Chin, T.A., Tat, H.H. and Sulaiman, Z. (2015), "Green supply chain management, environmental collaboration and sustainability performance", *Procedia Cirp*, Vol. 26, pp. 695-699.
- Collis, D.J. (1994), "Research note: how valuable are organizational capabilities?", *Strategic Management Journal*, Vol. 15 No. S1, pp. 143-152, doi: [10.1002/smj.4250150910](https://doi.org/10.1002/smj.4250150910).
- Couckuyt, D. and Van Looy, A. (2021), "An exploration of green business process maturity based on ecolabels", *Business Process Management Journal*, Vol. 27 No. 7, pp. 1999-2020, doi: [10.1108/BPMJ-05-2021-0293](https://doi.org/10.1108/BPMJ-05-2021-0293).
- Diabat, A. and Govindan, K. (2011), "An analysis of the drivers affecting the implementation of green supply chain management", *Resources, Conservation and Recycling*, Vol. 55 No. 6, pp. 659-667.
- Dixit, A. (2020), "Protection of environment for sustainable development", *Studies of Indian Place*, Vol. 40 No. 12, pp. 1369-1380.
- Elkington, J. (1997), "The triple bottom line", *Environmental Management: Readings and Cases*, Sage, LA, p. 2.
- Foo, P.Y., Lee, V.H., Tan, G.W.H. and Ooi, K.B. (2018), "A gateway to realising sustainability performance via green supply chain management practices: a PLS-ANN approach", *Expert Systems with Applications*, Vol. 107, pp. 1-14, doi: [10.1016/j.eswa.2018.04.013](https://doi.org/10.1016/j.eswa.2018.04.013).
- Foroudi, P. (2020), "Corporate brand strategy: drivers and outcomes of hotel industry's brand orientation", *International Journal of Hospitality Management*, Vol. 88, 102519.
- Hahn, R., Spieth, P. and Ince, I. (2018), "Business model design in sustainable entrepreneurship: Illuminating the commercial logic of hybrid businesses", *Journal of Cleaner Production*, Vol. 176, pp. 439-451.
- Hair, J.F. Jr, Matthews, L.M, Matthews, R.L. and Sarstedt, M. (2017), "PLS-SEM or CB-SEM: updated guidelines on which method to use", *International Journal of Multivariate Data Analysis*, Vol. 1 No. 2, pp. 107-123.
- Haiyun, C., Zhixiong, H., Yüksel, S. and Dinçer, H. (2021), "Analysis of the innovation strategies for green supply chain management in the energy industry using the QFD-based hybrid interval valued intuitionistic fuzzy decision approach", *Renewable and Sustainable Energy Reviews*, Vol. 143, 110844, doi: [10.1016/j.rser.2021.110844](https://doi.org/10.1016/j.rser.2021.110844).
- Han, Z. and Huo, B. (2020), "The impact of green supply chain integration on sustainable performance", *Industrial Management and Data Systems*, Vol. 120 No. 4, pp. 657-674, doi: [10.1108/IMDS-07-2019-0373](https://doi.org/10.1108/IMDS-07-2019-0373).
- Harrington, D., Sims, M. and Kehlet, A.B. (2016), "Effect of *Bacillus subtilis* supplementation in low energy diets on broiler performance", *Journal of Applied Poultry Research*, Vol. 25 No. 1, pp. 29-39.
- Hart, O. (1995), "Corporate governance: some theory and implications", *The Economic Journal*, Vol. 105 No. 430, pp. 678-689, doi: [10.2307/2235027](https://doi.org/10.2307/2235027).
- Hart, S.L. and Dowell, G. (2011), "Invited editorial: a natural-resource-based view of the firm: fifteen years after", *Journal of Management*, Vol. 37 No. 5, pp. 1464-1479.
- Hoemose, S., Brammer, S. and Millington, A. (2013), "An empirical examination of the relationship between business strategy and socially responsible supply chain management", *International Journal of Operations and Production Management*, Vol. 33, pp. 589-621.
- Jyoti, G. and Khanna, A. (2021), "Does sustainability performance impact financial performance? Evidence from Indian service sector firms", *Sustainable Development*, Vol. 29 No. 6, pp. 1086-1095.
- Khan, N.U., Irshad, A.-u., Ahmed, A. and Khattak, A. (2021), "Do organizational citizenship behavior for the environment predict triple bottom line performance in manufacturing firms?", *Business Process Management Journal*, Vol. 27 No. 4, pp. 1033-1053, doi: [10.1108/BPMJ-01-2021-0007](https://doi.org/10.1108/BPMJ-01-2021-0007).

- Kock, N. (2015), "Common method bias in PLS-SEM: a full collinearity assessment approach", *International Journal of e-Collaboration (IIEC)*, Vol. 11 No. 4, pp. 1-10.
- Koo, C., Chung, N. and Ryoo, S.Y. (2014), "How does ecological responsibility affect manufacturing firms' environmental and economic performance?", *Total Quality Management and Business Excellence*, Vol. 25 Nos 9-10, pp. 1171-1189.
- Krscynski, D., Coff, R. and Campbell, B. (2021), "Charting a path between firm-specific incentives and human capital-based competitive advantage", *Strategic Management Journal*, Vol. 42 No. 2, pp. 386-412.
- Long, B.S. and Mills, J.H. (2010), "Workplace spirituality, contested meaning, and the culture of organization: a critical sensemaking account", *Journal of Organizational Change Management*, Vol. 23 No. 3, pp. 325-341, doi: [10.1108/09534811011049635](https://doi.org/10.1108/09534811011049635).
- Ma, J., Harstvedt, J.D., Jaradat, R. and Smith, B. (2020), "Sustainability driven multi-criteria project portfolio selection under uncertain decision-making environment", *Computers and Industrial Engineering*, Vol. 140, 106236.
- Malik, S.Y., Cao, Y., Mughal, Y.H. and Kundi, G.M. (2020), "Pathways towards sustainability in organizations: empirical evidence on the role of green human resource management practices and green intellectual capital", *Sustainability*, Vol. 12 No. 8, 3228, doi: [10.3390/su12083228](https://doi.org/10.3390/su12083228).
- Marcoulides, G.A. and Saunders, C. (2006), "Editor's comments: PLS: a silver bullet?", *MIS Quarterly*, Vol. 30 No. 2, pp. iii-ix, doi: [10.2307/25148727](https://doi.org/10.2307/25148727).
- Massaro, M., Dumay, J., Garlatti, A. and Dal Mas, F. (2018), "Practitioners' views on intellectual capital and sustainability: from a performance-based to a worth-based perspective", *Journal of Intellectual Capital*, Vol. 19 No. 2, pp. 367-386.
- Mikulić, J. and Ryan, C. (2018), "Reflective versus formative confusion in SEM based tourism research: a critical comment", *Tourism Management*, Vol. 68, pp. 465-469.
- Moktadir, M.A., Kumar, A., Ali, S.M., Paul, S.K., Sultana, R. and Rezaei, J. (2020), "Critical success factors for a circular economy: implications for business strategy and the environment", *Business Strategy and the Environment*, Vol. 29 No. 8, pp. 3611-3635.
- Narimissa, O., Kangarani-Farahani, A. and Molla-Alizadeh-Zavardehi, S. (2020), "Drivers and barriers for implementation and improvement of sustainable supply chain management", *Sustainable Development*, Vol. 28 No. 1, pp. 247-258.
- Nunnally, J.C. and Durham, R.L. (1975), "Validity, reliability, and special problems of measurement in evaluation research", *Handbook of Evaluation Research*, Vol. 1, pp. 289-352.
- Osunmakinde, A., Kolade, O. and Mwila, N. (2021), "Spiritual capital and social entrepreneurship: a case study of Nigeria".
- Pádua, S.I.D. and Jabbour, C.J.C. (2015), "Promotion and evolution of sustainability performance measurement systems from a perspective of business process management: from a literature review to a pentagonal proposal", *Business Process Management Journal*, Vol. 21 No. 2, pp. 403-418.
- Pemer, F., Börjeson, L. and Werr, A. (2020), "The role of chief executive tenure for public organizations' hiring of management consultants", *Governance*, Vol. 33 No. 2, pp. 269-285.
- Peteraf, M.A. (1993), "The cornerstones of competitive advantage: a resource-based view", *Strategic Management Journal*, Vol. 14 No. 3, pp. 179-191.
- Podsakoff, N.P., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Porter, M.E. and Kramer, M.R. (2011), "Creating shared value", *Harvard Business Review*, Vol. 89 Nos 1-2, doi: [10.32591/coas.ojss.0201.04037b](https://doi.org/10.32591/coas.ojss.0201.04037b).
- Porth, S.J., McCall, J. and Bausch, T.A. (1999), *Spiritual Themes of the 'learning organization'* *Journal of Organizational Change Management*, Vol. 12 No. 3, pp. 211-220, doi: [10.1108/09534819910273883](https://doi.org/10.1108/09534819910273883).

- Rajeev, A., Pati, R.K., Padhi, S.S. and Govindan, K. (2017), "Evolution of sustainability in supply chain management: a literature review", *Journal of Cleaner Production*, Vol. 162, pp. 299-314.
- Raza, Z. (2020), "Effects of regulation-driven green innovations on short sea shipping's environmental and economic performance", *Transportation Research Part D: Transport and Environment*, Vol. 84, 102340.
- Santos, L.L., Borini, F.M. and Oliveira Júnior, M.d.M. (2020), "In search of the frugal innovation strategy", *Review of International Business and Strategy*, Vol. 30 No. 2, pp. 245-263, doi: [10.1108/RIBS-10-2019-0142](https://doi.org/10.1108/RIBS-10-2019-0142).
- Sari, R.N., Pratadina, A., Anugerah, R., Kamaliah, K. and Sanusi, Z.M. (2020), "Effect of environmental management accounting practices on organizational performance: role of process innovation as a mediating variable", *Business Process Management Journal*, Vol. 27 No. 4, pp. 1296-1314, doi: [10.1108/BPMJ-06-2020-0264](https://doi.org/10.1108/BPMJ-06-2020-0264).
- Sarkis, J., Hasan, M.A. and Shankar, R. (2006), "Evaluating environmentally conscious manufacturing barriers with interpretive structural modeling", *Environmentally Conscious Manufacturing VI*, Vol. 6385, pp. 68-76.
- Sarstedt, M., Ringle, C.M., Henseler, J. and Hair, J.F. (2014), "On the emancipation of PLS-SEM: a commentary on Rigdon (2012)", *Long Range Planning*, Vol. 47 No. 3, pp. 154-160.
- Segars, A.H. (1997), "Assessing the unidimensionality of measurement: a paradigm and illustration within the context of information systems research", *Omega*, Vol. 25 No. 1, pp. 107-121.
- Shahzad, M., Qu, Y., Zafar, A.U., Rehman, S.U. and Islam, T. (2020), "Exploring the influence of knowledge management process on corporate sustainable performance through green innovation", *Journal of Knowledge Management*, Vol. 24 No. 9, pp. 2079-2106, doi: [10.1108/JKM-11-2019-0624](https://doi.org/10.1108/JKM-11-2019-0624).
- Shou, Y., Hu, W. and Xu, Y. (2018), "Exploring the role of intellectual capital in supply chain intelligence integration", *Industrial Management and Data Systems*, Vol. 118 No. 5, pp. 1018-1032, doi: [10.1108/IMDS-06-2017-0285](https://doi.org/10.1108/IMDS-06-2017-0285).
- Shou, Y., Prester, J. and Li, Y. (2020), "The impact of intellectual capital on supply chain collaboration and business performance", *IEEE Transactions on Engineering Management*, Vol. 67 No. 1, pp. 92-104, doi: [10.1109/TEM.2018.2870490](https://doi.org/10.1109/TEM.2018.2870490).
- Skrzypińska, K. (2021), "Does spiritual intelligence (SI) exist? A theoretical investigation of a tool useful for finding the meaning of life", *Journal of Religion and Health*, Vol. 60 No. 1, pp. 500-516.
- van Essen, M., Carney, M., Gedajlovic, E.R. and Heugens, P.P. (2015), "How does family control influence firm strategy and performance? A meta-analysis of US publicly listed firms", *Corporate Governance: An International Review*, Vol. 23 No. 1, pp. 3-24.
- Vinzi, V.E., Trinchera, L. and Amato, S. (2010), "PLS path modeling: from foundations to recent developments and open issues for model assessment and improvement", *Handbook of Partial Least Squares*, Springer, pp. 47-82.
- Wernerfelt, B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, pp. 171-180.
- Whitelock, V.G. (2012), "Alignment between green supply chain management strategy and business strategy", *International Journal of Procurement Management (IJPM)*, Vol. 5 No. 4, pp. 430-451.
- Wijayanto, J. (2018), "Masih Banyak UKM Buang Limbah ke sungai", available at: <https://radarsurabaya.jawapos.com/jatim/18/07/2018/masih-banyak-ukm-buang-limbah-ke-sungai/>
- Wijethilake, C. (2017), "Proactive sustainability strategy and corporate sustainability performance: the mediating effect of sustainability control systems", *Journal of Environmental Management*, Vol. 196, pp. 569-582, doi: [10.1016/j.jenvman.2017.03.057](https://doi.org/10.1016/j.jenvman.2017.03.057).
- Williamson, D.A., Basu, I., Bower, J., Freeman, J.T., Henderson, G. and Roberts, S.A. (2012), "An evaluation of the Xpert MTB/RIF assay and detection of false-positive rifampicin resistance in Mycobacterium tuberculosis", *Diagnostic Microbiology and Infectious Disease*, Vol. 74 No. 2, pp. 207-209, doi: [10.1016/j.diagmicrobio.2012.06.013](https://doi.org/10.1016/j.diagmicrobio.2012.06.013).

- Yasir, M., Majid, A., Yasir, M. and Quadratullah, H. (2020), "Promoting environmental performance in manufacturing industry of developing countries through environmental orientation and green business strategies", *Journal of Cleaner Production*, Vol. 275, 123003, doi: [10.1016/j.jclepro.2020.123003](https://doi.org/10.1016/j.jclepro.2020.123003).
- Yildiz Çankaya, S. and Sezen, B. (2019), "Effects of green supply chain management practices on sustainability performance", *Journal of Manufacturing Technology Management*, Vol. 30 No. 1, pp. 98-121, doi: [10.1108/JMTM-03-2018-0099](https://doi.org/10.1108/JMTM-03-2018-0099).
- Yuan, M.H. and Lo, S.L. (2020), "Developing indicators for the monitoring of the sustainability of food, energy, and water", *Renewable and Sustainable Energy Reviews*, Vol. 119, October 2018, 109565, doi: [10.1016/j.rser.2019.109565](https://doi.org/10.1016/j.rser.2019.109565).
- Yuliansyah, Y., Rammal, H.G., Maryani, M., Jais, I.R.M. and Mohd-Sanusi, Z. (2021), "Organizational learning, innovativeness and performance of financial service firms in an emerging market: examining the mediation effects of customer-focused strategy", *Business Process Management Journal*, Vol. 27 No. 4, pp. 1126-1141, doi: [10.1108/BPMJ-10-2020-0454](https://doi.org/10.1108/BPMJ-10-2020-0454).
- Yusoff, Y.M., Omar, M.K., Delima, M., Zaman, K. and Samad, S. (2019), "Do all elements of green intellectual capital contribute toward business sustainability? Evidence from the Malaysian context using the partial least squares method", *Journal of Cleaner Production*, Vol. 234, pp. 626-637, doi: [10.1016/j.jclepro.2019.06.153](https://doi.org/10.1016/j.jclepro.2019.06.153).
- Zeb, A., Akbar, F., Hussain, K., Safi, A., Rabnawaz, M. and Zeb, F. (2021), "The competing value framework model of organizational culture, innovation and performance", *Business Process Management Journal*, Vol. 27 No. 2, pp. 658-683, doi: [10.1108/BPMJ-11-2019-0464](https://doi.org/10.1108/BPMJ-11-2019-0464).
- Zhang, J.A. and Walton, S. (2017), "Eco-innovation and business performance: the moderating effects of environmental orientation and resource commitment in green-oriented SMEs", *R&D Management*, Vol. 47 No. 5, pp. E26-E39, doi: [10.1111/radm.12241](https://doi.org/10.1111/radm.12241).
- Zhou, C., Xia, W., Feng, T., Jiang, J. and He, Q. (2020), "How environmental orientation influences firm performance: the missing link of green supply chain integration", *Sustainable Development*, Vol. 28 No. 4, pp. 685-696.
- Zohar, D. (2010), "Exploring spiritual capital: an interview with Danah Zohar", *Spirituality in Higher Education*, Vol. 5 No. 5, pp. 1-8.
- Zohar, D. and Marshall, I. (2004), *Spiritual Capital: Wealth We Can Live By*, Berrett-Koehler Publishers, Oakland, CA.

Appendix Questionnaire

Business Strategy (Bentley, 2013)

- (1) Our company prioritizes the values of environmental sustainability.
- (2) Our company integrates environmental issues in setting business strategy.
- (3) Our company prioritizes environmental issues in achieving company goals.
- (4) Our company invests resources focusing on environmental sustainability.
- (5) Our company considers environmental issues in developing new products.
- (6) Our company develops innovative new products that can reduce the negative impact on the environment.
- (7) Our company carries out sales and advertising activities for products affected by environmental issues.
- (8) Our company makes environmental protection the basis for strategic decision-making.

Spiritual Capital (Zohar and Marshall, 2004)

- (1) Our company places the company's goals and strategies in the context of broader meanings and values.
- (2) Our company has a "self-awareness" of what we believe in, who we influence and what we want to achieve.
- (3) Our company is guided by vision and values.
- (4) Our company has a high sense of holism or connectivity.
- (5) Our company has a sense of affection within the company.
- (6) Our company values diversity.
- (7) Our company is very independent, acting according to the company's vision and mission.
- (8) Our company has meaning in the company's purpose.
- (9) Our company can act at any time, not trapped in other paradigms, assumptions and interests.
- (10) Our company sees the positive side when facing difficulties.
- (11) Our company has deep humility and does not seek praise or gifts in return.
- (12) Our company helps the community.

Environmental Management Process (Chen *et al.*, 2012; Hoejmose *et al.*, 2013)

- (1) Our company chooses environmentally friendly suppliers.
- (2) Our company uses an environmentally friendly production process.
- (3) Our company uses environmentally friendly products.
- (4) Our company uses environmentally friendly process innovation.
- (5) Our company uses an environmentally friendly marketing process.
- (6) Our company uses an environmentally friendly competitor identification process.
- (7) Our company uses an environmentally friendly process of identifying consumer needs.
- (8) Our company uses a process of compliance with environmental sustainability regulations
- (9) Our company uses an environmentally friendly human resource competency improvement process.

Environmental Sustainability Performance (Harrington *et al.*, 2016)

- (1) Our company is known to be environmentally responsible.
- (2) Our company is an active participant in providing solutions to environmental problems.
- (3) Our company pays attention to environmental issues.
- (4) Our company is the creator and implementer of environmental programs.
- (5) Our company sets aside funds to address environmental issues.
- (6) Our company has a good image in the environmental field.
- (7) Our company received an award in the field of environmental sustainability.
- (8) Our company uses environmentally-conscious human resources.
- (9) Our company has a culture of environmental preservation.
- (10) Our company has leadership in environmental conservation.

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