

Are small and medium enterprises beneficial from the adoption of green market orientation under the intensity of market competition? A strategic alignment perspective

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Abstract. *There is limited knowledge regarding whether market competition (MC) influences the adoption of green market orientation (GMO) by small and medium enterprises (SMEs). Moreover, there is no clear understanding of whether the strategic alignment between differentiation strategy (DS) and the adoption of GMO and MC accounts for these enterprises' financial performance (FP). This study aims to draw on contingency theory and the natural resource-based view to shed light on these questions by proposing a research model, which demonstrates the relationship between MC and GMO and the mediating effects of DS on the relationship between MC, GMO, respectively, and FP. Data were collected from 172 SMEs that are currently operating in Vietnam. The partial least square structural equation modelling technique was executed to examine the research model. The results reveal that the intensity of MC influences SMEs to adopt GMO. Furthermore, it was also shown that DS fully mediates the relationship between MC, GMO, and FP. This study provides four significant contributions to environmental management research and contingency theory. In addition, this study provides crucial practical implications for SMEs operating in Vietnam.*

Keywords: Differentiation strategy, Green market orientation, Market competition, SMEs, Vietnam.

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Introduction

Today, businesses are under pressure to adopt environmental management practices. The pressure resulting from the external environment on the adoption of small and medium enterprises (SMEs), was revealed to come from stakeholders (see Baah *et al.*, 2021) and regulation (see Brammer *et al.*, 2012). Recently, it has been indicated that pressure from competition drives large enterprises to adopt environmental management practices such as green market orientation (GMO) (Li *et al.*, 2018). GMO is a specific form of market orientation. The adoption of market orientation can be found in the context of SMEs (Raju *et al.*, 2011). However, there is a limited understanding of this specific form in this context. In SMEs

context, there are two contradictory arguments relating to adopting environmental management practices when the intensity of market competition (MC) is high.

On the one hand, it is revealed that SMEs can adopt these practices to find competitive advantages (Ebrahimi & Mirbargkar, 2017). In this regard, SMEs may adopt GMO to find competitive advantages when the intensity of MC is high. However, on the other hand, SMEs find it challenging to adopt these practices due to size limitations (see Yook *et al.*, 2018). This limitation dampers their competitive advantages and results in a low adoption (Ghadge *et al.*, 2017). From this, when the intensity of MC is high, it is less likely that SMEs will adopt it. It raises the question of whether SMEs adopt GMO when the intensity of MC is high.

Regarding the research on the adoption of GMO, it was found that the adoption of GMO allows for environmental performance (Li *et al.*, 2018; Wang, 2020). However, to the best of our knowledge, no study addresses whether this adoption is beneficial for SMEs in terms of financial performance (FP). Modern thinking suggests that adopting environmental management practices leads to competitive advantages (Miroshnychenko *et al.*, 2017). It is based on the natural resource-based view (NRBV), which suggests that organizations can find competitive advantages when organizational capabilities and resources are deployed to support the environment (Hart, 1995; Hart & Dowell, 2011). Therefore, the adoption of GMO possibly permits SMEs to gain FP.

However, the environmental management literature concerns that the adoption of environmental management practices cannot directly lead to FP because previous studies indicate mixed results (see Ambec & Lanoie, 2008; Wang *et al.*, 2015). It is suggested that researchers should move beyond the question "Does it pay to be green?" by using contingency theory as a theoretical lens to answer the question of "When does it pay to be green?" (Dixon-Fowler *et al.*, 2013). The contingency theory in strategic management can be used to answer this question. It argues that strategic pursuit is the mediator between internal characteristics of the organization and external environment and performance (see Boyd *et al.*, 2012; Venkatraman, 1989).

When considering contingency theory as the theoretical lens, this study addresses several unanswered questions in the literature. Particularly, the differentiation strategy (DS) is revealed to be a strategy that permits the sustainability of FP (Banker *et al.*, 2014). In this regard, is DS potentially the mediator between GMO and FP? In addition, since the intensity of MC describes a specific condition of the external environment, does DS mediate the link between MC and FP? These two questions are proposed based on the following reasons. First, although, according to NRBV, the adoption of GMO permits competitive advantages, prior studies examining the link between the adoption of environmental management practices and FP reveal that the mixed results are due to the indirect relationship (see Ambec & Lanoie, 2008; Wang *et al.*, 2015). Environmental management theorists suggest that the adoption of environmental practices fosters differentiation advantages (see Ling, 2019; Tatoglu *et al.*, 2020). In this regard, GMO adoption may permit SMEs to pursue DS to improve FP. This study draws upon the contingency theory to propose that the adoption of environmental practices as GMO should be aligned with the strategy as DS to improve FP.

Second, the intensity of MC puts pressure on SMEs, and they need to find competitive advantages through strategic pursuit (Griffith *et al.*, 2012). From contingency theory, the alignment between MC and strategic pursuit is sufficient to explain FP. Although the literature suggests that competitive advantages come from the pursuit of cost-leadership strategy and DS, Banker *et al.* (2014) argued that the pursuit of DS potentially leads to the

sustainability of FP rather than the pursuit of cost-leadership strategy. In this regard, it may be expected that DS is the mediator between MC and FP. This proposal is sufficient because recent studies have begun to examine the mediating effects of strategy on the link between the external environment and performance (see Carvalho *et al.*, 2016; Soewarno & Tjahjadi, 2020).

To address these mentioned questions, this study aims to draw upon the contingency theory and the natural resource-based view to propose a research model that establishes the relationship between MC, GMO, DS, and FP of SMEs. Data was collected from SMEs located in Vietnam to test the proposed model. This study focuses on Vietnam for the following reasons. First, in Vietnam, SMEs are accountable for more than 95% of the total enterprises (Koushan, 2017). Second, in recent years, the competition in Vietnam has been intense. Because of the participation of foreign enterprises and joint ventures, SMEs in Vietnam compete not only with domestic state-owned enterprises, but also with foreign enterprises. It is a consequence of the recent establishment of the free trade agreement between Vietnam and other countries such as the European Union–Vietnam Free Trade Agreement (EVFTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). Lastly, environmental management practices are relevant for SMEs (see Le Van *et al.*, 2019). The results of this study show that the intensity of MC positively influences SMEs to adopt GMO. Furthermore, the results also reveal the mediating effects of DS on the link between GMO and FP and MC and FP.

The structure of this study was outlined as follows. The next section provides the theoretical background and hypothesis development. Next, the methodology section was introduced. Later, the discussion section was provided. The last section concludes and reveals the limitations and directions of the study for future research.

Literature review

Contingency theory

The contingency theory of organization (see Donaldson, 2001) posits that there is no single universal way to design an organization to achieve superior performance. Instead, superior performance is contingent upon the factors from the external environment and internal characteristics of organizations. In the strategic management literature, contingency theory is used to explain how the strategic alignments between contingency factors and strategic variables lead to higher performance (Venkatraman & Prescott, 1990). Contingency factors can be referred to as the variables that describe external environments such as MC or internal characteristics of organizations such as GMO. In this regard, the alignment between MC and DS and between GMO and DS allows SMEs to gain FP. Drawing from the Cartesian form of alignments (Venkatraman, 1989), this study proposed the research model illustrated in Figure 1.

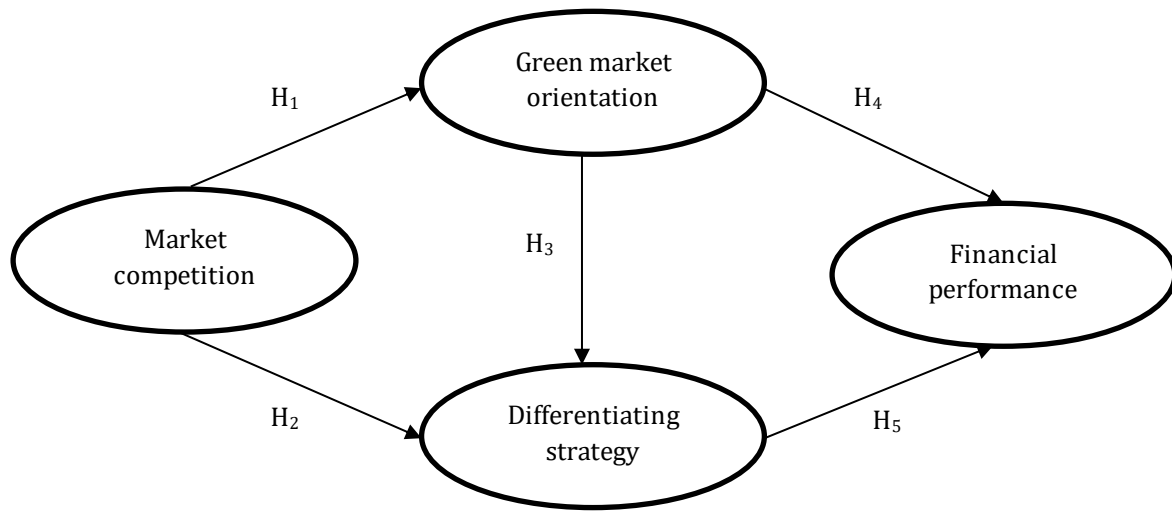


Figure 1. Research Framework

Source: Authors' own research.

Natural-resource-based view

The natural-resource-based view provides a theoretical framework which explains how and why organizational behaviours relating to the protection of the natural environment lead to competitive advantages. An insight into this view requires the examination of the resource-based view. According to the resource-based view, organizational resources and capabilities, which are valuable, rare, inimitable, and not substitutable, are necessary for the sustainability of competitive advantages (Barney, 1991). Although the resource-based view provides a theoretical framework to establish the link between organizational capabilities, resources, and competitive advantage, environmental management practices are not within the scope of this theory. It is strongly posited that the natural environment constraints the sustainable development of competitive advantages (Hart & Dowell, 2011). Thus, Hart (1995) extended by integrating environmental aspects into the resource-based view. Accordingly, organizations can maintain their competitive advantages by deploying their resources and enhancing their capabilities to deal with environmental challenges. In this regard, the sustainability of competitive advantage depends on the degree to which organizational resources and capability are deployed to support the natural environment, resulting in competitive advantages. This view systematically provides insight into the link between environmental management practices and competitive advantage by establishing the link between resources, capabilities, and organizational outcomes (Hart & Dowell, 2011). Based on this view, this study expects a direct and positive relationship between GMO and FP.

The link between market competition and green market orientation

MC creates intense pressure on organizations. This pressure is a result of trade liberalization, technological advancements, customers' preferences, and demands (Aziz *et al.*, 2018). When MC is intense, organizations need to quickly align themselves with the new environment to find competitive advantages by providing products/services to meet customers' preferences (Zhou *et al.*, 2009). However, today, a competitive theme does not limit the scope of

products/services. It is also based on the degree to which organizations take into account the role of environmental management practices (Song & Wang, 2018). As a result, it is suggested that the intensity of MC determines the environmental behaviours of the organization (Menon & Menon, 1997). Recent studies show that MC is the source of adopting environmental management practices. For example, Aziz *et al.* (2018) found that MC leads to the adoption of green initiatives. Similarly, Li *et al.* (2018) found that a competitive environment led to the adoption of GMO when they examined large enterprises.

Therefore, this study expects that MC will stimulate the adoption of GMO. Environmental concern has recently been widely spread (Soewarno *et al.*, 2019). Consequently, organizations must address this concern by adopting environmental management practices. The adoption of GMO seems promising. GMO is an extension of the market orientation concept (Li *et al.*, 2018), which drives organizational behavior to continuously deliver superior values to the customers (Narver & Slater, 1990). In this regard, GMO influences SMEs to continuously deliver environmentally friendly products/services to satisfy customers' demands (Wang, 2020). As a general form of GMO, market orientation allows the enhancement of competitive advantages (see Zhou *et al.*, 2009), and GMO is expected to foster the same effects. Thus, it is proposed that MC drives SMEs to adopt GMO because it allows the enhancement of competitive advantages. Thus, the first hypothesis is as follows.

H₁: There is a positive link between market competition and green market orientation.

The link between market competition and differentiation strategy

Competition drives an organization to emphasize the crucial role of strategic pursuit (Rugman & Verbeke, 1998). A proper strategic pursuit allows these organizations to adapt to a new environment to find competitive advantages (Hrebiniak & Joyce, 1985). For example, when the MC is intense, the market share is more likely to be reduced. As a result, to avoid this reduction, organizations focus on the development of new techniques and applying new technology, which in turn satisfy customers' demands (Knot *et al.*, 2001; Santos-Vijande & Álvarez-González, 2007).

DS allows organizations to produce and deliver their products/services, which are unique to gain competitive advantages (Porter, 1985). This study expects that SMEs pursue DS when MC is intense for the following reasons. First, this strategy enhances the advantages through innovation (see Prajogo *et al.*, 2007). A high degree of innovation allows organizations to gain competitive advantages because they become the first mover in the industry (Rahman & Bhattacharyya, 2003). In addition, organizations that differentiate their products/services also gain a competitive advantage by enhancing technological capability (Renko *et al.*, 2009). In turn, they outperform their rivals because this capability creates barriers limiting the imitating ability of the rivals (Banker *et al.*, 2014). SMEs are more likely to pursue DS to gain competitive advantage when MC is intense. Thus, this paper also expects the same effects on SMEs. The second hypothesis is as follows.

H₂: There is a positive link between market competition and differentiation strategy.

The link between green market orientation and differentiation strategy

Market orientation is suggested to be the predictor of organizational strategy. Market orientation refers to the culture influencing organizational behaviour, which continuously focuses on the market (Narver & Slater, 1990). It is suggested that organizational culture has

an impact on organizational strategy (Naranjo-Valencia *et al.*, 2011). Thus, empirical evidence from the strategic management literature strongly suggests that market orientation influences organizational strategy (Cacciolatti & Lee, 2016; Chen *et al.*, 2015; Laforet, 2008; Matsuno & Mentzer, 2000).

Because GMO is a specific form of market orientation, it is expected that GMO influences the pursuit of DS. When organizations adopt GMO, they are more likely to adopt green customer and green competitor orientations (Wang, 2020). In this regard, these two approaches may drive organizations to pursue DS because of the following reasons. The first approach allows organizations to develop a superior sensing ability to gain insight into customers' green demands. The second approach leads to the acquisition, dissimilation, and competitors' green behavior process. An insight into customers and competitors has a strong impact on strategy formulation. Organizations pursue DS, which promotes green marketing to meet the customers' green demands (Dean & Pacheco, 2014). Besides, an insight into competitors' green behaviour allows organizations to improve their differentiative ability because Langerak (2003) revealed that an insightful understanding of the competitors resulting from high market orientation advances the necessary behaviour to deploy appropriate resources to obtain the differentiative position. Therefore, it is expected that GMO drives SMEs to pursue DS. The third hypothesis is as follows.

H₃: There is a positive link between green market orientation and differentiation strategy.

The link between green market orientation and financial performance

GMO is also considered an intangible resource, which allows organizations to develop their capabilities to achieve the environmental goals to meet customers' demands relating to environmentally friendly products/services (Chen *et al.*, 2015; Fraj *et al.*, 2013). According to the natural-resource-based view, when organizations develop their capabilities and deploy their resources to support the natural environment, the sustainability of competitive advantages is improved (Hart, 1995). A highly competitive advantage allows for the enjoyment of high performance (Newbert, 2008). In this regard, this paper expects that the adoption of GMO permits SMEs located in Vietnam to improve FP. The fourth hypothesis is formulated as follows.

H₄: There is a positive link between green market orientation and financial performance.

The link between differentiation strategy and financial performance

Pursuing DS allows organizations to be unique in the marketplace because of highly distinguishable products/services (Porter, 1985). This strategic type is revealed to positively influence FP (see Banker *et al.*, 2014). The following reasons explain how and why there is a positive relationship between DS and performance. First of all, this strategy aims to create a customer's perception, which is that the organization or its products/services poses a high degree of uniqueness and is superior to the competitors (Miller, 1988). As a result, relying on this strategy requires a high degree of customized ability, which demands organizations to develop a strong relationship with their customers to gain insight into their desires and needs. The closer the relationship is, the more reputable organizations are (Banker *et al.*, 2014). A good reputation allows for the enjoyment of superior performance (Graham & Bansal, 2007). In addition, DS also allows organizations to enhance customers' loyalty

(Souitaris & Balabanis, 2007). It is demonstrated that a high degree of customer loyalty leads to high performance (Smith & Wright, 2004). Last but not least, pursuing this strategy also enhances differentiation advantages which permit organizations to become the first movers in the market (Rahman & Bhattacharyya, 2003). A first-mover can enjoy the superior performance (Frawley & Fahy, 2006). In summary, pursuing DS allows organizations to achieve FP. This study expects the same effects on SMEs, in line with this argument. Thus, the fifth hypothesis is as follows.

H₅: There is a positive link between differentiation strategy and financial performance.

The mediating effects of differentiation strategy on the relationship between green market orientation and financial performance

Previous empirical evidence reveals that the link between SMEs' adoption of environmental management practices and FP is inclusive. For example, Tyler *et al.* (2020) found that the adoption of environmental management practices permits SMEs to gain FP, while Baah *et al.* (2021) found that the adoption of green production practices negatively impacts SMEs FP. As a result, some theorists are concerned that the relationship between the adoption of environmental management practices and FP is indirect through mediators rather than direct (Agyabeng-Mensah *et al.*, 2020; Aslam *et al.*, 2021). Consistently, the literature on market orientation also concerns that the link between GMO and their outcomes is influenced by mediators (Gotteland & Boulé, 2006; Wang, 2020).

Strategic management theorists argue that the alignments between contingency variables and strategic pursuit lead to superior performance. According to the contingency theory in strategic management, performance implication is found when the strategic alignments between the organisation's external environment or internal characteristics and strategic pursuit are established (Venkatraman & Prescott, 1990). This establishment requires a rigid analytical approach as well as statistical correspondence (Boyd *et al.*, 2012). According to the Cartesian frameworks of Venkatraman (1989), the alignment is established when the strategic pursuit is the mediator between the environment or these characteristics and performance. This framework was highly suggested because of the ability to assess the alignments between multiple contingency variables, strategic types, and performance (see Donaldson, 2001, p. 158).

This study argues that the adoption of GMO allows SMEs to gain competitive advantages. One of the advantages of adopting environmental management practices is to gain differentiation advantages. DS aims to create these advantages, and this strategy has been revealed to improve FP (Banker *et al.*, 2014). This argument is based on previous studies. Ling (2019) found that green management strategy, the integration between environmental management practices and strategy, is a source of differentiation advantages, leading to performance implications. Tatoglu *et al.* (2020) found a positive association between the adoption of voluntary environmental management practices and DS. Therefore, although the adoption of GMO induces competitive advantages, it is required that SMEs pursue DS to find FP because this strategy can foster the beneficial effects of GMO. In this regard, drawing from contingency theory, this study expects that DS mediates the relationship between GMO and FP. Therefore, the sixth hypothesis is proposed as follows.

H₆: Differentiation strategy mediates the link between green market orientation and financial performance.

The mediating effects of differentiation strategy on the relationship between market competition and financial performance

Conventional thinking demonstrates that competitive pressure influences strategic pursuit (Porter, 1989). In this regard, MC requires an organization to pursue an appropriate strategy to find performance implications (see Dupire & M'Zali, 2018; Slivko & Theilen, 2014). It was found that the intensity of MC influences strategic pursuit (Griffith *et al.*, 2012). Organizations pursuing DS can sustain their FP (Banker *et al.*, 2014). Strategic management theorists also argued that strategic pursuit is required to be aligned with the external environment to foster performance (Prajogo, 2016; Tsai & Yang, 2013). In this regard, drawing upon the Cartesian framework of contingency theory, it may be expected that DS mediate the link between MC and FP. This expectation is in line with previous studies that reveal the mediating effects of strategic pursuit on the external environment and performance (see Carvalho *et al.*, 2016; Soewarno & Tjahjadi, 2020). Therefore, the seventh hypothesis is proposed as follows.

H7: Differentiation strategy mediates the link between market competition and financial performance.

Method

Data collection

This study uses a survey method to collect data. To do this, a list of emails containing about 1.500 emails of SMEs in the manufacturing industry located in Vietnam was obtained from Vietnam Yellow Pages (2022). This webpage provides a database of more than 250,000 enterprises currently operating in Vietnam. The section process is as follows. First, according to the information searched on this webpage, there are about 14674 enterprises currently operating in the Vietnamese manufacturing industry. Second, an email was sent to the webpage asking for the list of emails of manufacturing SMEs. A response email was sent back to the author. According to the email, the website only gives a dataset consisting of 1.500 email addresses of manufacturing SMEs. These 1.5000 are randomly drawn from the system. In this regard, the collecting process follows a probability sampling technique.

This study takes into account the following crucial criteria for selecting the target respondents. First, the target respondents must be the owners of SMEs, because it is appropriate for them to indicate the strategy of their enterprises. Second, this study only collects enterprises employing less than 300 employees. Because, according to Le Van *et al.* (2019), enterprises categorized as manufacturing SMEs have less than 300 employees.

In the next step, an email consisting of the introduction of the study's purpose and a link to access the online survey was sent in October 2019. 231 emails failed to reach the target respondents. After one month and a half, the statistical analysis of the survey shows about 196 observations. Thus, the response rate is about 13.06%. Table 1 shows the SMEs' characteristics in the sample.

Table 1. SMEs' characteristics

		Frequency	Percentage
Number of employees			
	10-50	40	20.41%
	51-100	60	30.61%
	101-150	48	24.49%

		Frequency	Percentage
	151-200	32	16.33%
	201-250	11	5.61%
	251-300	5	2.55%
Year since the first establishment			
	1-5	21	10.71%
	6-10	107	54.59%
	11-15	55	28.06%
	16-20	12	6.12%
	>20	1	0.51%
Region			
	North	55	28.06%
	Middle	34	17.35%
	South	107	54.59%

Source: Authors' own research.

Due to the concern of non-response bias, this study uses a t-test to compare the means of the items in the questionnaire between the first and last quarters of the sample. The results do not reveal significant differences between early and late respondents. Thus, non-response bias does not cause any concern to this study.

This study also assesses the relevance of the sample size. Three approaches used in PLS-SEM, which were taken into account when examining the sample size, include the 10-time rule (Barclay *et al.*, 1995), gamma-exponential method (Kock & Hadaya, 2018), power table (Hair *et al.*, 2021). Based on those approaches, the minimum observations required for this study should be 158 observations, the sample size of this study being sufficient for PLS-SEM analysis.

Measures

All other measures used in this study were adapted from previous studies. Regarding MC, this study relies on the instrument from Mia and Clarke (1999) with minor modifications. The instrument measuring the adoption of GMO was adopted from Wang (2020). This study treats this construct as a second-ordered construct, which consists of three dimensions such as green customer orientation (GCUS), green competitor orientation (GCOM), and green inter-functional coordination (GINTER). The pursuit of DS was adapted from Nandakumar *et al.* (2010) study with minor modifications. Lastly, the instrument was adapted from Wong and Merrilees (2015) to measure the FP of SMEs. A 5-point Likert was applied to these instruments. The first six scales are from "highly disagree" to "highly agree" while the last scale is from "well below average" to "well above average".

Although there is a criticism related to the use of self-rating for measuring FP, this type of measure is appropriate for this study. First of all, this study collects the data from SMEs located in Vietnam, an emerging economy. It is argued that self-measure provides more advantageous results in emerging economies (Semrau *et al.*, 2016). Besides, it is also argued that when collecting data related to FP, subjective measures provide a better result than

objective measures (Tajeddini & Ratten, 2020). Thus, the use of self-rating does not cause concern in this study.

This study also includes two variables to control for FP. The first variable (YEAR) measures the year since the SME was found. The second one (SIZE) measures the number of employees.

Common method bias

Collecting data from the same survey may be subject to common method bias. Hence, a Harman's single factor test was executed. If there is a majority of the total variance (more than 50%) accounts for a single factor, common method bias exists. The results of the principal component analysis show that only 35.635% of the total variance accounts for a single factor. Therefore, the common method bias does not cause any concern for this study.

Statistical analysis

This study uses partial least square structural equation modeling (PLS-SEM) to assess data. Several reasons are driving this decision. First, this technique is recommended due to its high capability to handle non-normality data and small sample size (Cassel *et al.*, 1999; Hair *et al.*, 2017). Second, in strategic management studies, this technique is commonly used (Hair *et al.*, 2012).

The aim of PLS-SEM is an SEM technique which estimates the complex relationship between latent variables while maximizing the explanation of independent variables' variance (Hair *et al.*, 2011). In the PLS-SEM analysis, there are two stages: assessment of the measurement model and the structural model (Sarstedt *et al.*, 2014).

Indicator loadings, internal consistency reliability, convergent validity and discriminant validity of each construct, as well as the discriminant validity of the constructs, are all evaluated as part of the analysis of the measurement model (Hair *et al.*, 2019). Regarding the assessment of indicator loadings, a value higher than the cutoff value of 0.7 suggests the establishment (Sarstedt *et al.*, 2014). Internal consistency reliability can be assessed by examining Cronbach's Alpha (CA) and composite reliability (CR). CA higher than 0.6 and CR higher than 0.7 show the validity of this assessment (Sarstedt *et al.*, 2014; Sharma, 1996). Convergent validity is established when the average variance extracted (AVE) is higher than the threshold value of 0.5 (Sarstedt *et al.*, 2014). Discriminate validity requires the evaluation of the heterotrait-monotrait ratio. A ratio less than 0.85 indicates the establishment of this validity (Henseler *et al.*, 2015).

Analysis of the structural model's collinearity, explanatory power, and predictive accuracy are required for evaluation (Sarstedt *et al.*, 2014). First, the validity of collinearity requires VIFs between latent variables to be lower than the cutoff value of 3 (Hair *et al.*, 2019). Second, explanatory power demands researchers to assess R^2 value. These values are needed to be lower than 0.25 (Hair *et al.*, 2019). Third, predictive accuracy requires the examination of Q^2 values. Q^2 values higher than zero indicate a sufficient degree of predictive accuracy (Hair *et al.*, 2019).

This study also follows the analytical approach suggested by Zhao *et al.* (2010) to examine the mediating hypotheses.

Results

Measurement model

The evaluation of the measurement model consists of two stages. In the first stage, this study examines the first-ordered constructs. In the second stage, this study evaluates the second-ordered constructs. The assessment of the first-ordered constructs and second-ordered construct follows the same steps. According to Sarstedt *et al.* (2014), the assessment of the measurement model includes the evaluation of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

Table 2. Indicator reliability, internal consistency reliability, the convergent validity of the constructs

First-ordered constructs	Second-ordered constructs	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
DS				0.902	0.924	0.671
		DS_1	0.827			
		DS_2	0.796			
		DS_3	0.810			
		DS_4	0.834			
		DS_5	0.833			
		DS_6	0.813			
FP				0.781	0.859	0.604
		FP_1	0.722			
		FP_2	0.793			
		FP_3	0.799			
		FP_4	0.792			
	GCOM			0.842	0.894	0.677
		GCOM_1	0.834			
		GCOM_2	0.788			
		GCOM_3	0.839			
		GCOM_4	0.830			
GCUS				0.853	0.901	0.694
		GCUS_1	0.840			
		GCUS_2	0.826			
		GCUS_3	0.827			
		GCUS_4	0.839			
GINTER				0.849	0.898	0.688
		GINTER_1	0.822			
		GINTER_2	0.813			
		GINTER_3	0.876			
		GINTER_4	0.805			
	GMO			0.695	0.831	0.621

First-ordered constructs	Second-ordered constructs	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
		GCOM	0.799			
		GCUS	0.784			
		GINTER	0.780			
MC				0.899	0.92	0.621
		MC_1	0.779			
		MC_2	0.802			
		MC_3	0.783			
		MC_4	0.723			
		MC_5	0.817			
		MC_6	0.821			
		MC_7	0.787			
SIZE				1.000	1.000	1.000
		SIZE	1.000			
YEAR				1.000	1.000	1.000
		YEAR	1.000			

Source: Authors' own research.

Table 2 shows that all indicator loadings are higher than 0.7 and therefore the validity of indicator loadings is sufficient (Sarstedt *et al.*, 2014). Table 2 shows that the CA values of the constructs are higher than 0.6 (Sharma, 1996) and the CR values of these constructs are also higher than 0.7 (Sarstedt *et al.*, 2014). In this regard, the internal consistency reliability of these constructs is valid. Besides, AVE values of those constructs are also higher than 0.5, and as a result, the convergent validity of those constructs is established (Sarstedt *et al.*, 2014). Last but not least, according to Table 3, the heterotrait-monotrait ratio of the constructs are all lower than 0.85, and hence the construct's discriminate validity is adequate (Henseler *et al.*, 2015). To sum up, the measurement model is valid.

Table 3. Heterotrait-monotrait between constructs

	DS	FP	GCOM	GCUS	GINTER	GMO	MC	SIZE	YEAR
DS									
FP	0.630								
GCOM	0.568	0.431							
GCUS	0.574	0.332	0.502						
GINTER	0.556	0.355	0.510	0.502					
GMO	0.800	0.528	-	-	-				
MC	0.533	0.375	0.539	0.507	0.492	0.725			
SIZE	0.062	0.048	0.087	0.101	0.052	0.108	0.129		
YEAR	0.027	0.035	0.073	0.061	0.069	0.040	0.036	0.064	

Note. - indicates the unexamined ratios.

Source: Authors' own research.

Structural model

A bootstrapping procedure with 5,000 replacements was used to assess the measurement model (Hair *et al.*, 2011). Evaluation of the structural model requires the assessment of collinearity, explanatory power, and predictive accuracy (Sarstedt *et al.*, 2014). Table 4 shows that the VIFs between the constructs are all lower than 3 (Hair *et al.*, 2019). In this regard, the collinearity issue does not pose any concern for this study. Besides, Table 4 reveals that the R^2 values of the constructs are all higher than 0.25 (Hair *et al.*, 2019). Therefore, the explanatory power is well established. Last but not least, according to Table 4, the Q^2 values of those constructs are also higher than zero (Hair *et al.*, 2019). Therefore, the predictive accuracy of the model is sufficient. Taken together, the validity of the measurement model is adequate.

Table 4. R^2 , Q^2 , and VIFs between latent variables

			VIFs					
	R^2	Q^2	DS	FP	GMO	MC	SIZE	YEAR
DS	0.425	0.276		1.675				
FP	0.293	0.168						
GMO	0.343	0.209	1.522	1.685				
MC			1.522		1.000			
SIZE				1.013				
YEAR				1.004				

Source: Authors' own research.

According to Table 5, the relationship between MC and GMO is positively associated ($\beta=0.586$, $p<0.001$). In addition, the association between MC and DS is positively linked ($\beta=0.184$, $p=0.007$). This table also shows that GMO significantly influences DS ($\beta=0.527$, $p<0.001$). Furthermore, this table indicates the significant relationship between DS and FP ($\beta=0.484$, $p<0.001$). However, in this table, the relationship between GMO and FP is insignificant ($\beta=0.083$, $p=0.246$). Based on these results, all hypotheses are significant except H_4 .

Table 5. Results of the structural models

Path	Beta	Standard deviation	p -values	Lower bound	Upper bound	Hypothesis
MC -> GMO	**0.586	0.041	0.000	0.494	0.658	H_1 supported
MC -> DS	**0.184	0.067	0.007	0.045	0.313	H_2 supported
GMO -> DS	**0.527	0.061	0.000	0.399	0.638	H_3 supported
GMO -> FP	0.083	0.076	0.246	-0.073	0.225	H_4 rejected
DS -> FP	**0.484	0.066	0.000	0.344	0.603	H_5 supported
GMO -> DS -> FP	**0.255	0.044	0.000	0.173	0.346	H_6 supported
MC -> DS -> FP	*0.089	0.037	0.020	0.021	0.165	H_7 supported
SIZE -> FP	0.039	0.064	0.542	-0.087	0.165	-
YEAR -> FP	-0.005	0.061	0.940	-0.121	0.121	-

Note. ** is significant at 0.05; * is significant at 0.01; - are controlled paths.

Source: Authors' own research.

According to Zhao *et al.* (2010), the assessment of mediators consists of three required steps. First, there are significant relationships between independent variables (MC and GMO) and the mediator (DS), as well as this mediator and the dependent variable (FP). Second, the confident interval excludes zero. Third, the full mediating effects require the nonsignificant impact of the independent variables on the dependent variable. Table 5 reveals that DS fully mediates the relationship between MC and FP and the relationship between GMO and FP. Therefore, hypotheses H₆ and H₇ are all supported.

Discussion

This paper aims to draw from contingency theory and the natural-resource-based view to explain the relationship between MC, GMO, DS, and FP. First, the results show a positive association between MC and GMO. It implies that when the MC is intense, SMEs adopt GMO. This finding is consistent with previous studies, which reveal that competitive pressure induces environmental management practices. This finding is consistent with previous studies. For example, Aziz *et al.* (2018) found that competitive intensity induces the adoption of green initiatives. Additionally, Li *et al.* (2018) also found a positive relationship between competition and GMO.

Second, the results suggest a positive association between these two variables regarding the link between MC and DS. It implies that when MC is intense, SMEs pursue DS to find competitive advantages. This finding somewhat reflects the argument of Porter (1989), which indicates that the competitive pressure influences organizational strategic pursuits. This finding is consistent with previous studies (Griffith *et al.*, 2012; Soewarno & Tjahjadi, 2020), which show that the competitive environment influences the strategic pursuit.

Third, the results indicate that GMO is positively associated with DS. It can be interpreted as that SMEs adopting GMO pursue DS. This finding is consistent with conventional thinking, which illustrates that DS can be achieved by adopting environmental management practices (Reinhardt, 1998). It is similar to Tatoglu *et al.* (2020), who found that Turkish enterprises adopt voluntary environmental management practices when they pursue DS.

Fourth, the findings also suggest that the pursuit of DS leads to higher FP. This finding aligns with the meta-study performed by Banker *et al.* (2014). They revealed that the pursuit of this strategy sustains FP. Regarding the context of studies, this result is consistent with previous studies, which indicate the positive impact of this strategy on FP in emerging countries. For example, Brenes *et al.* (2014) result indicates that agribusinesses in emerging countries of the Latin America region, which pursue DS, achieve the highest performance compared to other strategic types.

Fifth, the results also indicate that the relationship between GMO and FP is insignificant. Instead, the effects of GMO on the performance are indirect via DS. This finding is also consistent with recent studies. For instance, Alotaibi and Zhang (2017) found that export strategy is the mediator between export market orientation and export performance. Similarly, Ngo (2021) revealed that prospector strategy mediates the relationship between market orientation and small business performance.

Sixth, the findings demonstrate that DS fully mediates the link between MC and FP. This implies that the alignments between MC and DS enhance FP. This finding is consistent

with a recent study (Carvalho *et al.*, 2016), which reveals the mediating effects of strategy on the relationship between several aspects of the external environment and performance.

Theoretical contributions

First, previous studies indicate several aspects of the external environment that drive SMEs to adopt environmental practices, such as stakeholders (Baah *et al.*, 2021) and regulation (Brammer *et al.*, 2012). This study informs that the intensity of MC leads to the SMEs' adoption of GMO, an environmental management practice. This study contributes to the literature by indicating that competitive forces also have a crucial role in the SMEs' adoption of environmental practices. In addition, by taking into account the role of competition, this study also contributes to the growing environmental management research, which considers the role of competitive pressure when examining the adoption of environmental management practices (see Tyler *et al.*, 2020).

Second, in terms of adopting environmental management practices, it is a concern that due to the differences in political, economic, and social factors, SMEs operating in emerging countries may behave differently than ones in emerging (see Riaz *et al.*, 2019). It is argued that researchers should put more effort into the adoption of environmental management practices in emerging countries to match the attention paid to meagered countries (Epstein & Buhovac, 2014). Following this argument, this study sheds light on the adoption of GMO in an emerging country like Vietnam.

Third, in environmental management research, the greatest concern is whether adopting environmental management practices leads to FP. However, previous studies revealed mixed results (see Ambec & Lanoie, 2008; Wang *et al.*, 2015). Therefore, environmental management research should move beyond the question of "Does it pay to be green?" by using contingency theory as a theoretical lens to answer "When does it pay to be green?" This study examines the indirect effect of GMO on FP through DS under the theoretical lens of contingency theory. In this regard, this study contributes to the growing body of environmental management research, which borrows this theory as a theoretical lens to explain when organizations are beneficial from the adoption of environmental management practices (Albertini, 2013; Dixon-Fowler *et al.*, 2013; Javed *et al.*, 2016; Riillo, 2017). Furthermore, Wang (2020) argued that more studies should be executed to address the mediating effects of the link between GMO and their outcomes. This finding contributes to GMO literature by addressing the role of strategy in the relationship between GMO and their outcomes.

Fourth, in contingency studies in strategic management, strategic alignment can be modelled by formulating the moderating and mediating effects of strategy. However, Boyd *et al.* (2012) criticized a lack of empirical studies assessing the strategic alignment by examining the mediating effects. Acknowledging this, this study assesses strategic alignment by examining the mediating effects of DS. In this regard, this study contributes to the growing body of contingency research in strategic management by enriching empirical evidence on the mediating effects of strategy on the relationship between the internal and external environment and performance factors.

Practical implications

The results of this paper provide some major practical implications for manufacturing SMEs operating in Vietnam. The finding suggests that the intensity of MC leads to the SMEs'

adoption of GMO. When the competitive pressures are high, SMEs are more likely to orient to customers and competitors to gain high green market intelligence. This intelligence permits SMEs to gain insight into customers' needs relating to green products and services. In addition, this intelligence also allows SMEs to understand competitors' capability to deliver green products and services. Green inter-functional coordination allows departments within SMEs to work together to exploit such green intelligence effectively. Therefore, GMO permits SMEs to effectively deliver their green products and services, meeting the customers' demands as well as getting ahead of their competitors in the competition relating to the delivery of green products and services.

The finding informs that SMEs adopting GMO find superior FP by pursuing DS. They adopt GMO to gain high green market intelligence and enhance the coordination between departments to exploit such intelligence. One possible exploitation is that SMEs deliver their green products and services, which are valuable to customers and unique in the market because this green intelligence equips SMEs an insight into customers' green demands and competitors' capability to deliver green products and services. Thus, SMEs are more likely to pursue DS because this strategy focuses on enhancing the uniqueness of products and services, which is valuable to customers by enhancing the green characteristics of the products and services. The more unique and valued the products and services delivered, the higher the price of those products and services. SMEs can make great profits by charging higher prices. Therefore, it translates into business success.

The finding suggests that when MC is intense, SMEs can improve FP by pursuing DS. When the pressure from the competition arises, SMEs are more likely to pursue DS to gain business success. One possible way to deal with this pressure is that SMEs can enhance the uniqueness of their products and services, which is valuable to customers. Such uniqueness permits SMEs to gain first-mover advantages because the competitors require time to catch up with the uniqueness of SMEs' products and services. In this regard, SMEs can charge a premium price for those products and services. SMEs can stand out from the competition and enjoy business success thanks to the pursuit of DS.

Conclusions, limitations, and directions for future studies

The study aims to draw from the contingency theory and natural-resource-based view to seek the answer to the following questions. First, does the intensity of MC drive SMEs to adopt GM? Second, whether DS is the mediator between GMO and FP and MC and FP. Data were collected from 172 SMEs located in Vietnam. The results show that the intensity of MC positively influences SMEs to adopt GMO. It is also revealed that the mediating effects of DS on the link between GMO and FP, as well as MC and FP.

Consistent with any study, the study's result should be interpreted with some limitations. First, this study collects data at a certain point in time. Thus, it may be subject to non-causality issues because longitudinal data is required to establish causality. Second, this study only collects data, including manufacturing SMEs operating in Vietnam. Therefore, the generalizability of these results to other emerging countries should be cautious. Third, the self-rating scale to measure FP is not completely convincing. Thus, it may limit this study.

Despite these limitations, this study provides an avenue for future studies. First, this study shows that the intensity of MC leads to the adoption of GMO. In this regard, this study raises a call for future study, which searches for the answers to how the market

characteristics influence the adoption of environmental management practices. Second, Chiu and Hsieh (2016) show that the adoption of environmental management practices leads to the enhancement of green capability, leading to economic performance. In this regard, the green capability may play an intervening role in the link between the adoption of GMO and FP. Therefore, this study questions whether green capability has a mediating role in the relationship between GMO and FP. Future studies will address this question. In terms of limitations, this study also suggests an avenue for future studies. First, future studies can establish concrete results of this study by using longitudinal data to overcome the limitation of this study. Second, future research should replicate this model to ensure the generalizability of this study's results in other emerging countries. Third, future studies should use subjective data to measure FP to overcome the limitation relating to the use of self-rating.

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