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Factors Influencing Firm's Sustainable Competitive Advantage in a Developing Country: Exploring Perspectives of Green Dynamic Capabilities

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ABSTRACT

While existing research has highlighted the benefits of dynamic capabilities (DC) in various contexts, studies linking DC to green practices within sustainable development have been limited. As green orientation becomes increasingly vital for businesses, this study investigates the mechanisms through which green DC influences sustainable competitive advantage via internal management orientation and green market orientation. Using PLS-SEM based on Smart-PLS4 software, we analyzed 212 qualified responses of Vietnamese firms to examine these relationships. Our findings support four out of five research hypotheses, indicating that green DC significantly enhances sustainable competitive advantage by facilitating both internal management orientation and green market orientation. These novel findings confirm that nurturing green DC as well as internal management orientation and green market orientation is crucial for firms seeking to establish and maintain a competitive edge in the context of green and sustainable development.

1. INTRODUCTION

By integrating RBV into competitive advantage studies, researchers can gain deeper insights into how firms can effectively harness their unique resources to navigate challenges and seize opportunities, ultimately leading to enhanced performance and long-term sustainability. Hence, the Resource-Based View (RBV) by Barney [1] is widely used as the underpinning theory to explain the mechanism of creating competitive advantage (CAD) by reinforcing a firm's resources and competencies. According to the RBV, to sustain a CAD, a firm needs to cultivate its resources and develop them into core capabilities that are Value, Rarity, Inimitability, Non-substitutability (VRIN).

The RBV framework has not only established a robust basis for exploring CAD but has also paved the way for subsequent theories that expand upon its principles in various contexts. Notably, the Dynamic Capability View (DCV) was first introduced by Teece et al. [2] based on the adaptation of the RBV in the context of a dynamic environment. Accordingly, the DCV focuses on nurturing and developing a firm's resources and capabilities to quickly respond to environmental changes to create and sustain a firm's CAD. Subsequent theoretical research has further defined and explored DC [2-8] and the empirical studies have investigated the mechanisms through which DC impact CAD and examined how DC influences other capabilities within firms, ultimately contributing to sustainable CAD (SCAD). In recent years, some studies have also identified significant linkages between DC, marketing capabilities, and SCAD [9-12].

However, research linking DC to green practices has been limited in the context of sustainable development with a "green" orientation [13]. While green orientation is considered a significant trend that requires businesses to adapt, creating DC in the green context (green DC – GDC) has become increasingly important. Nevertheless, to our knowledge, studies on GDC have not been paid much attention. Thus, it is necessary to conduct empirical research on GDC to provide reliable evidence and suggestions for businesses to swiftly adapt to environmentally friendly practices and enhancing their SCAD.

Dynamic capability is a particular type of capability that not only helps enterprises improve and sustain their long-term CADs [14-17] but also positively influences other internal capabilities such as innovative capability [14, 16, 18], multi-channel capability [19, 20], or marketing capability [21] before these capabilities affect SCAD [16, 22-24]. However, in the context of GDC research, empirical studies examining their relationships and impacts on other enterprise capabilities have not received much attention. Meanwhile, green marketing orientation (GMO) and internal marketing orientation (IMO) are essential under green growth conditions. On the one hand, they help enterprises meet and satisfy customer requirements [25]. On the other hand, they help establish an internal environment that effectively integrates green practices into daily routines [25-27], thereby creating both cost advantages and customer loyalty, which, turn supports the maintenance and development of long-term

SCAD for enterprises [24].

Additionally, because IMO focuses on building an internal environment that enables employees to apply green practices into their daily routines [28, 29], IMO is expected to positively affect the GMO of an organization. However, research examining the relationship between IMO and GMO has not been given much attention. Therefore, this relationship needs to be investigated.

In terms of context, in recent years, the trend of green and environmentally friendly growth has received the attention and priority of many countries. In Vietnam, state agencies and industry associations have organized forums, seminars, and conferences to formulate sustainable green growth strategies and encourage businesses to adopt them urgently. The Vietnamese government considered green growth a crucial solution to promote the economy. As a developing country that has shown impressive growth and has made remarkable efforts to adopt green practices in recent years, studying green topics can bring valuable evidence to businesses in Vietnam and other developing and emerging countries.

Based on these arguments, in this study, we consider GMO and IMO as specific capabilities of a firm, focus on exploring the impact of GDC on SCAD through IMO, and GMO of businesses in an emerging country that is Vietnam. To our knowledge, conducting an empirical study on this topic has not been done before. Hence, we expect that the research findings will contribute significant evidence for the linkages among GDC, IMO, GMO and SCAD, and help them find practical solutions to improve their SCAD by strengthening their GDC, GMO, and IMO.

2. LITERATURE REVIEW

2.1 Underpinning theory

In this study, the RBV theory is used as the underpinning theory to explain how internal factors within a company impact the establishment and reinforcement of its SCAD.

The RBV is widely adopted to explain an organization's competitiveness and success. RBV emphasizes the importance of nurturing and developing internal resources and capabilities to establish and strengthen a firm's CAD [30]. By effectively exploiting resources, a firm may achieve higher business performance than its competitors [21]. Each organization can utilize its resources and capabilities to maintain long-term CAD. Regardless of tangibility or intangibility, resources and capabilities that meet the VRIN can be nurtured to become an organization's CAD [1]. The VRIN indicates four core competency requirements: value, rarity, inimitability, and non-substitutability. In other words, a resource or capability must be: (1) effectively exploitable by the organization (valuable), (2) possessed by very few or no other competitors (rare), and (3) either difficult or costly for competitors to replicate or find substitutes for (inimitable and non-substitutable). When an organization can continuously nurture and maintain such VRIN resources and capabilities over the long term, it will establish a sustained CAD [30].

2.2 GDC

The DCV, which is built upon the RBV by Barney [1] and Wernerfelt [31], focuses on developing key competencies to strengthen a firm's advantages within a rapidly changing environment [2]. A DC is regarded as "a crucial competency for a firm" [7] that is very difficult for competitors to replicate [32], and enables a firm to acquire and apply new knowledge [33], assist in reconfiguring, renewing, and creating its resources and capabilities [4], and adapt to changes driven by both internal and external factors [2, 5, 34]. GDC evolves from the DCV by Teece et al. [2] to address companies' need to integrate green and environmentally friendly practices into their operations. Chen and Chang [13] define GDC as "the ability of a company to exploit its existing resources and knowledge to renew and develop its green organizational capabilities to react to the dynamic market." GDC pertains to a company's process of creating, developing, and implementing green practices in its internal operations to adjust to environmental changes. Qiu et al. [17], with research conducted in China, suggest that GDC is cultivated through a sustainable green orientation. Singh et al. [35], drawing from Barreto [36] and Helfat [37], view GDC as a firm's capability to intentionally create resources to address dynamic challenges and enhance them to become environmentally friendly, thereby supporting sustainable development. GDC can be understood from multiple dimensions. It can be generated and nurtured through internal and external sources [16]. Internal factors focus on the effective exploitation and integration of knowledge, resources, and competencies within a firm's departments to achieve sustainable development [38], while external factors involve the firm's capacity to seek, learn, assimilate, exchange, and apply opportunities to enhance its internal resources [39]. Consequently, GDC enables a firm to develop experiences and knowledge gained from the external environment to integrate and reconfigure its resources and capabilities in an environmentally friendly way, helping it respond promptly to external fluctuations and reinforce competitiveness through sustainable development [17, 35]. Thus, GDC allows a firm to benefit from the DCV and facilitates sustainable development in line with environmentally friendly trends [17].

2.3 GMO and IMO

2.3.1 GMO

Marketing orientation is critical in improving firm performance [40] because it helps a firm transform its marketing activities into effective practices [41, 42]. There are various approaches to the definition of marketing orientation. Chiou and Chang [43] define marketing orientation as "the degree to which an organization obtains and uses information from customers, develops a strategy which will meet customer needs and implement that strategy by being responsive to customer needs and wants," some researchers believe that marketing orientation is the internal driving force that influences marketing activities, employees as well as the relationship with customers [40]. Marketing orientation can be constituted by various factors, such as customer orientation, competitor orientation, product orientation, cross-functional combinations [44], or customer philosophy, integrated marketing organization, marketing information, strategic orientation, and operational efficiency [40].

Green marketing/environmental marketing has become a significant issue in developing strategies for an organization's social growth. It allows a firm to enhance its image and competitiveness to improve business performance. Green marketing activities focus on recycling, constructing, and renovating the marketing mix elements. In other words, green

marketing enables a firm to innovate its products, services, production processes, packaging, or advertising [40]. Green marketing activities aim to fulfill customer needs and adapt to environmentally friendly requirements [23, 45].

In the context of green practices, GMO relates to a firm's activities in marketing decisions to maintain its CAD in addressing environmental issues [24]. Leonidou et al. [46] suppose that GMO focuses on the marketing mix and minimizes its negative ecological impact. GMO has been found as a crucial aspect in the marketing fields of firms in Yemen to strengthen the relationship with its customers and bring environmental benefits to the whole market [47]. Based on extant studies to present, Chahal et al. [40] have indicated that GMO can be reflected in green innovation (green product/service development), greening the process (internal greening), and green alliances (coordination for green activities). Through the lens of strategy, GMO focuses on a firm's long-term actions and policies implemented by top managers focusing on environmental concerns to gain its CAD [48], help a firm fulfill the expectations of stakeholders [24], and increase its sales and profitability [49].

2.3.2 IMO

To ensure that an organization can adapt and be flexible in a continually changing marketplace, Awwad and Agti [50] suggest that internal marketing, organizational commitment, and organizational citizenship behaviors serve as antecedents of market orientation. De Bruin et al. [25] described internal marketing as a crucial component of a market orientation that necessitates the application of marketing strategies inside an organization to generate value for the enterprise. This is crucial to a company's ability to gain a competitive edge.

According to Papadas and Avlonitis [51], GMO in a green context entails spreading environmental ideals throughout the company to establish a more extensive corporate green culture. To achieve customer satisfaction through the process of developing motivated and customer-oriented employees, Rafiq et al. [52] defined internal marketing as a planned effort using a marketing-like approach to overcome organizational change resistance, align, motivate, inter-functionally coordinate, and integrate employees to implement corporate and functional strategies effectively. Internal marketing serves as a thorough management procedure that unifies different business divisions in two ways: First, internal marketing is understood by all staff members at all levels of the organization as a type of strategic management philosophy that guarantees the recruitment, growth, inspiration, and retention of valuable staff members by establishing a top-notch workplace that satisfies their needs. Second, internal marketing causes all staff members to get excited about providing excellent customer service [25]. Also, Qureshi and Mehraj [28], in their empirical study in India, suggest that internal green marketing behavior is another unique element of the strategy. To present a research framework, this study first merges the concepts of internal marketing and green issues. The research revealed that IMO in green practices is a multifaceted concept encompassing green internal communication, green skill development, and green rewards. IMO, in the green context, it entails spreading environmental ideals throughout the company to establish a more extensive corporate green culture [51]. This method, which a business might use to improve external customer satisfaction, can also be considered human resource management [25]. Employees are encouraged to develop the skills and abilities necessary to implement successful environmental initiatives by spreading knowledge and fostering an ecological culture throughout the firm [53]. Therefore, IMO suggests that businesses should match the conduct of their employees, who are in charge of their marketing initiatives, with their green marketing strategy. Stated differently, it is an internal green marketing approach tied to the environmental culture that ought to permeate the entire company [24].

To summarize, the authors approach IMO from an employee perspective. IMO has an employee-centric goal: improving employee satisfaction at work, motivating them to work better, and helping to improve the quality of products and services, ultimately raising productivity and customer satisfaction and increasing revenue and profits for businesses.

2.4 SCAD

CAD plays a significant role in an organization's success [1]. Suppose a company can sustain, nurture, and leverage its CAD over the long term to achieve its strategic goals and directions and enhance its competitiveness in response to the changing environment. In that case, it can create a SCAD [54]. Reinforcing a SCAD is crucial in improving organizational performance [9, 55-57]. Based on the RBV, a SCAD depends on the company's ability to possess, nurture, and exploit its internal resources and capabilities [1]. When these resources and capabilities exhibit the VRIN [1, 58], they become a source of SCAD.

Regarding the characteristics of CAD, Porter [59, 60] identified two sources: cost leadership and differentiation. Cost leadership involves minimizing production and operational costs to offer products/services at lower prices than competitors. The second type of CAD, differentiation, consists of creating unique aspects of a product/service (such as superior quality, special features, distinctive attributes, excellent customer service, or outstanding distribution systems). These differentiating features allow a firm to meet customer needs better, thus enabling it to charge higher prices than competitors while still being well-received by customers. In an unpredictable market, strengthening a SCAD allows a company to achieve superior performance, which is crucial for sustaining competitive success.

2.5 Research model and hypotheses

2.5.1 Research model

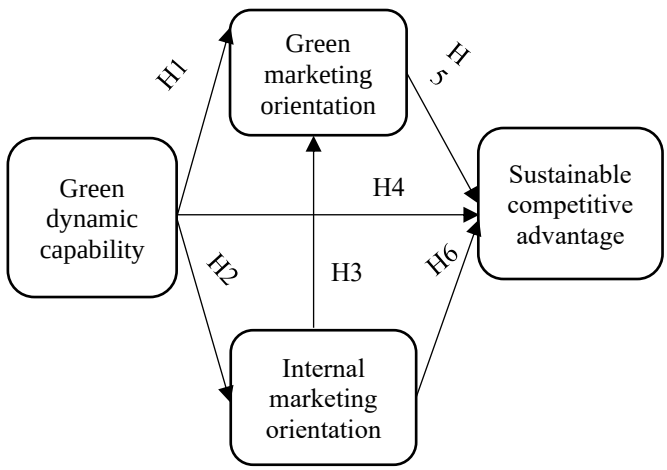

Figure 1. The research model

As mentioned above, the underpinning theory in this study is the RBV. Accordingly, it can establish and enhance its SCAD when an organization nurtures and develops its resources and capabilities – such as GDC, GMO, and IMO. Additionally, previous research indicates a reciprocal relationship among GDC, GMO, and IMO [24, 41, 61, 62]. Therefore, examining the mechanisms of influence among these capabilities and their impact on an organization's SCAD is necessary. Based on these arguments, the research model for the relationships between GDC, GMO, IMO, and SCAD is established in Figure 1.

2.5.2 Research hypotheses

- The direct impact of GDC on GMO

Regarding the relationship between GDC and GMO, Hunt and Madhavaram [21] suppose the positive influence of DC on dynamic marketing capabilities. Accordingly, acting as a key to marketing capabilities, marketing orientation is significantly impacted by DC [24, 63, 64]]; it is expected that a direct relationship between DC and marketing orientation.

Several studies [65] have succeeded in identifying the relationship between GMO and green innovation capabilities based on institutional theory. However, these studies stop considering the combined effects of GMO and innovation capabilities. Research by Negi et al. [66] and D'Attoma and Ieva [61] confirm the individual and combined (direct and indirect) effects of GMO and green innovation capabilities performance. Research results confirm a positive relationship between GMO and green innovation capabilities [61, 66]. In addition, empirical research by Nuryakin and Maryati [67] has successfully established a positive and significant relationship between GMO and green innovation capabilities (product and process) based on resource theory (RBV). On the other hand, green innovation capabilities are similar to green DC in a specific business [66]. That could lead to a positive relationship between green DC and marketing orientation. From the above arguments, the authors propose the following research hypothesis:

H1: *GDC has a positive effect on GMO.*

- The direct impact of GDC on IMO

Researchers have also shown that employee participation in green knowledge-sharing initiatives, such as training, has a good impact on green dynamic capacities, which fosters more creative work practices inside the company. Actions aimed at resource integration, acquisition, and reconfiguration may be included in DC [62].

Also, the empirical study conducted in India [62] indicated that green creativity would be linked to green training. The current study considers green training while examining the importance of training from an ecological standpoint. The incremental approach to creativity/innovation is used in Joshi's study to prove the impact of green training on green creativity. Green training helps to promote green values in employees, which has a good effect on their green cognition [68]. It also raises employees' knowledge, abilities, and awareness of environmental actions [69]. This study validates that controlling the firm's internal resources might achieve more extraordinary sustainability performance. According to this argument, businesses that consider internal quality relations have unique, valuable, and uncommon qualities like employee involvement. As a result, companies are better positioned to comprehend the shifting environment, adjust to it, and enhance their sustainability performance [70]. The study's findings demonstrate that internal quality linkages directly impact social, environmental, and economic sustainability outcomes.

Overall, IMO focuses on employees. As such, DC impacts employee participation, green training influences green creativity, and dynamic impacts IMO through internal relations. These can encourage employees' environmental awareness and increase their cultural commitment. Therefore, GDC influences IMO (through internal relations). Our new contribution is finding the relationship between GDC and IMO. Consequently, we propose the hypothesis that:

H2: *GDC has a positive effect on IMO.*

- The direct impact of IMO on GMO

While both IMO and GMO are vital components of marketing capabilities, Papadas et al. [41] suppose that IMO is independent of GMO and IMO can facilitate the effective implementation of GMO within an organization. Acting as an orientation of internal motivation, IMO allows a firm to spread knowledge and foster a friendly environmental culture throughout the entire firm, which leads to the success of ecological initiative implementation [53]. GMO can be executed successfully if a firm can communicate effectively between its individuals and departments [41]. It can be seen that IMO enables a firm to create a green culture and, therefore, enhance GMO to improve its product quality and gain cost reduction. Consequently, we propose the hypothesis that:

H3: *IMO has a positive effect on GMO.*

- The direct impact of GDC on SCAD

DC are one of the keys to finding a CAD in strategic management [8, 55, 71]. It is understood as the ability to integrate, build, and reconfigure internal and external capabilities to adapt to rapid changes in the business environment [72]. Prior studies have provided evidence to confirm the significant relationship between DC and SCAD [55, 57, 73-75].

For example, studies by Teece and Pisano [72] and Schilke [73] show a positive contingent relationship between DC and CAD in dynamic environments. However, this relationship is likely weaker in highly dynamic environments [73]. suggest that examining the impact of DC should result in long-term performance, or in other words, create a sustainable advantage. However, achieving and maintaining a CAD in an ever-changing environment is quite difficult. In the context of research in China, Li and Liu [55], from a strategic process perspective, discovered a positive relationship between DC and CAD of businesses and the role of the environmental dynamic. When looking at suppliers, Vanpoucke et al. [57] found that supplier integration capability (SIC) can be understood as a component of DC (which includes the processes to achieve efficient flows of information and products between buyers and suppliers, as well as the ability to adapt these processes to changing environments) and argues that SIC can help businesses build SCAD. Based on the notion that the relationship between DC and CAD is shaped by a complex interaction between external and internal factors, Ferreira et al. [75] and Fainshmidt et al. [74] enrich the theory of DC and CAD by further considering the impact of a firm's strategic orientation.

Based on evolutionary theory and evidence, the theory of resources, the authors Fainshmidt et al. [76] have shown that overall, there is a positive relationship between DC and a

company's performance. Eikelenboom and de Jong [15] confirm the positive impact of DC on sustainable competitiveness through empirical research with small and medium-sized enterprises in the Netherlands. The results show that integrated DC and internal DC both have a positive influence on the sustainable competitiveness of SMEs [15]. At a higher level of approach, green DC are considered one of the critical factors determining the development prospects of manufacturing enterprises [17]. Green DC, which are high-level capabilities for businesses to achieve green development [77], allow them to take advantage of available resources and knowledge to update and exploit the capacity of green organizations to respond well to changes in the business environment [16]. By structuring green DC into resource integration capabilities, resource reconfiguration capabilities, and environmental understanding capabilities, Qiu et al. [17] discovered a generally positive relationship between the specific integration of green DC and the sustainable competitiveness of manufacturing enterprises in China.

H4: *GDC has a positive effect on SCAD.*

- The direct impact of GMO on SCAD

CAD is a long-term strategic goal that helps businesses achieve high profits [41, 78, 79]. In particular, SCAD refers to creating market-oriented value based on the pursuit of innovation [80]. According to Barney [1], CAD can be formed from a business's resources and skills. Businesses can only maintain a SCAD when competitors cannot imitate the source of the advantage. In the context of increasingly fierce global competition, to achieve SCAD, businesses must integrate environmental thinking into all aspects of marketing. Therefore, GMO is essential in creating SCAD for firms [23, 80].

Several research works [25, 79, 81] have conducted an overview of previous studies to confirm that GMO includes a strategic proactive environment, enabling rare, unique, and complex capabilities that help businesses make a difference. Thereby maintaining a CAD for firms in the market [81]. In addition to differentiation, the above capabilities refer to cost advantages [24, 82]. Cost reduction can be related to energy and water savings while using recycling processes or gaining the advantage of scaling up the production of green products [24]. Therefore, studies have concluded that GMO positively impacts a business's CAD through cost reduction and innovative practices [4, 79, 81]. In addition, Papadas et al. [24] study attempts to evaluate the impact of GMO's structural factors on businesses' CADs. Specifically, SGMO positively affects CAD under the strong regulation of IGMO [24].

Looking at different research fields, the authors Shaukat and Ming [80] based on resource theory (RBV) to examine the impact of GMO on business performance (BP) by determining the role of the intermediate variable - SCAD in the pharmaceutical industry in Pakistan. The results show that GMO has a significant direct and indirect impact on business performance through the intermediate variable of SCAD [80]. In another field, Chung [78] conducted a customer survey to evaluate the role of GMO in sustainable development in the hotel business. Specifically, GMO positively impacts green hotel image and customer loyalty, which are essential factors that help hotels achieve SCAD [78]. In the automotive industry, Moravcikova et al. [23] also identified a significant relationship between GMO and the SCAD of businesses in the market. From the above arguments, the authors propose the following research hypothesis:

H5: *GMO has a positive effect on SCAD.*

- The direct impact of IMO on SCAD

Something that sets a business apart from its rivals is called a CAD. For solid market positioning, one or more CADs provide value to a company or its products and services, making it more attractive than its competitors. The objective is to grow market share and draw in new clients. However, a company's competitive edge may not last forever. Therefore, it must ensure that everything differentiating it from rival businesses is sustainable [26].

Even though it may be little or nonexistent in small enterprises, marketing is now acknowledged as essential to preserving competitiveness. It is debatable if a firm of any size should develop a marketing plan because even the smallest ones cannot afford to overlook this marketing idea. A CAD is significant in strategic management because it is the most efficient means for a business to outperform its rivals and draw in clients by raising the perceived value and degree of happiness they receive [26].

Internal green marketing modifies the links between strategic and CAD, which makes it a crucial component of gaining an advantage in the cutthroat market [24].

Only via the leader's guidance, who builds a relationship with internal customers in an organization and sets goals and direction, can internal marketing be accomplished. In addition, a leader's coaching improves the capacity of the business by providing transparent performance compensation and other beneficial coaching abilities [27]. When creating an internal marketing plan, corporate executives have a message to convey: create an environment where employees value and support the internal marketing strategy. Employees should be moved by this message and motivated to support the organization in realizing its particular goals [26].

Also, through CAD, IMO has a favorable impact on financial performance, such as income and profitability goals [26]. Additionally, the target audience for internal marketing is employees. The results demonstrated that IMO impacted customer satisfaction, service quality, and personnel satisfaction [29]. It is argued that employees given greater power and authority are more likely to acquire pleasure, even though happier workers provide better services [83].

Internal marketing programs include activities that improve customer consciousness among employees and enhance internal communication effectiveness. These activities make employees feel they are pioneers in the organization and contribute to their higher motivation and job satisfaction, encouraging their positive response toward the firm's customers [29].

Furthermore, employees will be encouraged to develop the skills and abilities necessary to implement successful internal marketing strategies by spreading knowledge and creating a positive work environment throughout the firm [53]. Therefore, many studies have shown that IMO enhances employee job satisfaction [83], motivating them to contribute more to the company. As a result, this improves product and service quality [25], enhances customer satisfaction, and ultimately creates a CAD for businesses. Consequently, we established the following hypothesis in light of earlier research:

H6: *IMO has a positive effect on SCAD.*

3. RESEARCH METHODOLOGY

3.1 Question design

The questionnaire examined the relationship between GDC, GMO, IMO, and SCAD. All items were assessed via a seven-point Likert scale, from "1 = Definitely disagree" to "7 = Definitely agree". The measurements were adopted from previous studies. Seven items (GDC1 – GDC7) were adapted from Chen and Chang [13] for GDC. The measurements of both GMO (9 items) and IMO (7 items) were adapted from Papadas et al. [41] and coded GMO1 – GMO9; IMO1 – IMO7. Six items reflecting SCAD were adapted from Qiu et al. [17] for SCAD. Some questions about the firm's features and individual features were added to gather information about respondents.

3.2 Sample, data collection, and analytical method

The sample unit of this study is a firm operating its business in Vietnam at the time of surveying. A random sample was used to collect data. In order to explore the characteristics and propose a general direction for Vietnamese enterprises in light of the new trend toward green practices, the question was mailed to randomly selected companies that have active contacts through online assess and supporters from researchers' linkage, including those on the Vietnam Yellow Pages Book 2022 list. To get reliable information, the respondents must be their firm's middle or senior managers. Therefore, questions collecting individual information from respondents were added to the questionnaire, including age, gender, education, position, and experience. The survey lasts seven months, starting in January 2024 and ending in July 2024.

- Ethics statement

This study was approved by the Department of Strategic Management at Thuongmai University, Hanoi, Vietnam in January 2024 with the No. of Ethical Approval TMU/DSM/2024/03. Written informed consent was obtained from all participants before they took part in the study. The questionnaire included a statement explaining the purpose of the study and the voluntary nature of participation. By having agreed to take part in the study, participants indicated their written consent to participate in the study.

In total, 243 answers were obtained. After removing 31 invalid responses, 212 responses qualified for data analysis. Table 1 provides detailed information about the respondents. For the firm's characteristics, over half of the total firms participating in the survey had been established for over ten years; the 5-10-year-old firms accounted for approximately 23%. For firm type, firms operating in trade and service sectors contributed nearly 50% of the total firms surveyed. The number of firms operating in the agriculture, forestry, and fishery sectors was the most minor (almost 7%). In contrast, the figure for firms in construction was similar to firms in the industrial sectors, approximately 8% for each. For firm size, the enterprises with under 50 employees accounted for nearly 30%, while the most significant proportion (more than 36%) was the most prominent (250 employees and above).

Regarding respondents' characteristics, respondents under 40 accounted for approximately 72%, while the 50–year–old and above group contributed the most minor figure, with only eight respondents. For gender, the figure for males was only 1.4% smaller than the number for females. For position and experience, respondents who were CEOs or Deputy CEOs survey contributed more than 82%, while nearly one-half of the total informed that they had experience in this position for at least five years.

The PLS-SEM was used to examine the research hypotheses using Smart-PLS4 software. Accordingly, it is necessary to carefully investigate the outer model (the measurement model) before reviewing the inner model (the structural model) [84].

Table 1. Profile of the respondents and their firms

Characteristics	Frequency	Percent	Cumulative Percent
Firm's age (1.1)			
Under three years	20	9.4	9.4
3 – under five years	34	16.0	25.5
5 – 10 years	48	22.6	48.1
Ten years and above	110	51.9	100.0
Total	*212*	*100.0*	
Firm's type (1.6)			
Agriculture, forestry, and fishery sector	14	6.6	6.6
Construction sector	17	8.0	14.6
Industrial sector	18	8.5	23.1
Trade and service sector	101	47.6	70.8
Others	62	29.2	100.0
Total	*212*	*100.0*	
Firm Size (1.7)			
Under 50 employees	58	27.3	27.3
50 – under 100 employees	35	16.5	43.9
100 – 249 employees	42	19.8	63.7
205 employees and above	77	36.3	100.0
Total	*212*	*100.0*	
Respondent's Age (4.1)			
Under 30 years old	74	34.9	34.9
30 – under 40 years old	77	36.3	71.2
40 – under 50 years old	53	25.0	96.2
50 – under 60 years old	7	3.3	99.5
60 years old and above	1	5	100.0
Total	*212*	*100.0*	
Repsondent's gender (4.2)			

Male	104	49.1	49.1
Female	107	50.5	99.5
Others	1	0.5	100.0
Total	*212*	*100.0*	
Respondent's position (4.4)			
CEOs	7	3.3	3.3
Deputy CEOs	167	78.8	82.1
Dept. Head or equivalent position	36	17.0	99.1
Others	2	0.9	100.0
Total	*212*	*100.0*	
Respondent's Experience (4.5)			
Under one year	13	6.1	6.1
1 – under three years	52	24.5	30.7
3 – under five years	43	20.3	50.9
Five years and above	104	49.1	100.0
Total	*212*	*100.0*	

4. RESEARCH RESULTS

4.1 The measurement model

According to Hair et al. [85], the measurement assessment includes (1) examination of the construct reliability by both Cronbach's Alpha (≥ 0.7) and the Composite reliability (CR) (≥ 0.7) of all latent variables. (2) investigation of the convergent validity by the Outer loading (≥ 0.7) and the Total variance extracted (AVE) (≥ 0.5). (3) assessment of the discriminant validity by the HTMT (≤ 0.900). Table 2 indicates the results of construct reliability and convergent validity examinations. It can be seen that all items meet the requirements of the Outer loading (much greater than 0.7), and all four latent variables are qualified for the requirements of Cronbach's Alpha, CR, and AVE.

Table 2. Examination of the construct reliability and convergent validity

Code	Items and Constructs	Outer Loading	Cronbach's Alpha	CR (Rho_A)	CR (Roh_C)	AVE
GDC	**GDC**		0.946	0.948	0.955	0.754
GDC1	The company has the ability that can fast monitor the environment to identify new green opportunities	0.883				
GDC2	The company has effective routines to identify and develop new green knowledge	0.870				
GDC3	The company has the ability to develop green technology	0.832				
GDC4	The company has the ability to assimilate, learn, generate, combine, share, transform, and apply new green knowledge	0.906				
GDC5	The company has the ability to integrate and manage specialized green knowledge within the company successfully	0.856				
GDC6	The company has the ability to successfully coordinate employees to develop green technology	0.872				
GDC7	The company has the ability to successfully allocate resources to develop green innovation	0.856				
GMO	**GMO**		0.965	0.965	0.97	0.782
GMO1	Innovation is readily accepted in program/project management	0.836				
GMO2	Top management gives special emphasis to service innovation	0.877				
GMO3	We invest in R & D programs to create environmentally friendly products/services	0.920				
GMO4	We have created a separate department/unit specializing in environmental issues for our organization	0.899				
GMO5	We invest in low-carbon technologies for our production processes	0.873				
GMO6	We participate in environmental business networks	0.897				
GMO7	We use specific environmental policy for selecting our partners	0.883				
GMO8	We engage in dialogue with our stakeholders about environmental aspect of our organization	0.868				
GMO9	We make efforts to use renewable energy sources for our products/services	0.906				
IMO	**IMO**		0.954	0.957	0.962	0.785
IMO1	We organize presentations for our employees to inform them about our green marketing strategy	0.894				
IMO2	Our employees believe in the environmental values of our organization	0.893				
IMO3	Exemplar environmental behaviour is acknowledged and rewarded	0.914				
IMO4	We form environmental committees for implementing internal audits of environmental performance	0.872				

IMO5	Environmental activities by candidates are a bonus in our recruitment process	0.875				
IMO6	We have created internal environmental prize competitions that promote eco-friendly behaviour	0.857				
IMO7	We encourage our employees to use eco-friendly products/services	0.894				
SCAD	**SCAD**		0.957	0.958	0.965	0.822
SACD1	The products and services provided by our enterprise have a higher quality than those provided by our competitors	0.903				
SACD2	The R&D capability of our enterprise is stronger than that of our competitors	0.917				
SACD3	The management competence of our enterprise is better than that of our competitors	0.928				
SACD4	Our enterprise is more profitable than our competitors	0.885				
SACD5	Our enterprise has a better corporate image than our competitors	0.910				
SACD6	The CAD of our enterprise is difficult to replace by competitors	0.896				

Moving to the discriminant validity assessment, the HTMT results indicate that all constructs are qualified (Table 3).

Table 3. The assessment of the discriminant validity

	GDC	GMO	IMO	SCAD
GDC		0.768	0.778	0.761
GMO			0.899	0.701
IMO				0.658

4.2 The measurement model

Firstly, examine the multicollinearity by VIF scores which should be less than 5 [85]. The VIF scores in this study ranging [1.000; 4.398] indicate no multicollinearity (Table 4).

Table 4. The inner VIF

	GDC	GMO	IMO	SCAD
GDC		2.261	1.000	2.456
GMO				4.293
IMO		2.261		4.398

Now, investigate the relationship between GDC, GMO, IMO, and SCAD. The one-tailed method was applied because this study focuses on examining the direct effects. According to Hair et al. [85], it is required to examine Path coefficients, p-value, t-value, and confidence intervals bias corrected. The results of the structural model assessment are presented in Table 5 and Figure 2.

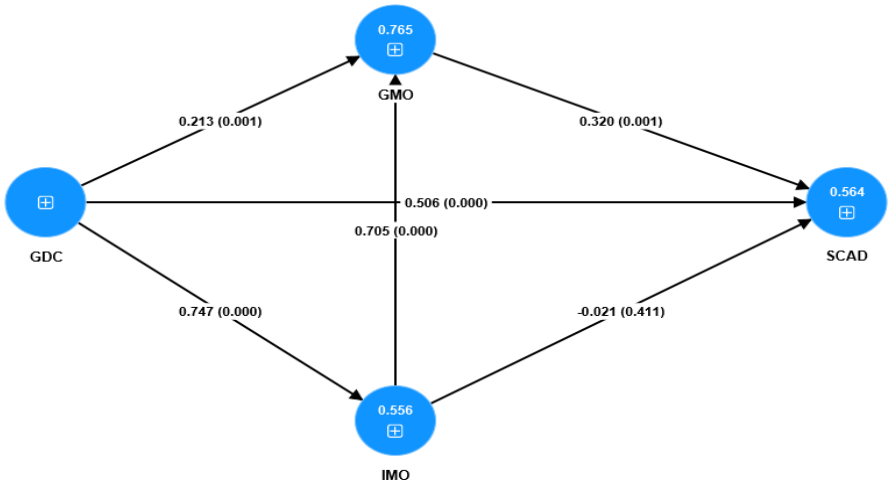

Figure 2. The structural model assessment

Table 5. The results of the structural model examination

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	f^2	CI		Results
							5.00%	95.00%	
H1: GDC and GMO	0.213	0.217	0.068	3.132	0.001	0.086	0.108	0.33	Supported
H2: GDC and IMO	0.747	0.748	0.042	17.638	0.000	1.261	0.663	0.806	Supported
H3: IMO and GMO	0.705	0.701	0.064	11.017	0.000	0.684	0.589	0.801	Supported
H4: GDC and SCAD	0.506	0.5	0.094	5.36	0.000	0.243	0.343	0.651	Supported
H5: GMO and SCAD	0.32	0.325	0.107	2.989	0.001	0.055	0.144	0.494	Supported
H6: IMO and SCAD	**-0.021**	**-0.02**	**0.093**	**0.226**	**0.411**	**0.000**	**-0.168**	**0.136**	**Not Supported**

Moving to the details, the research results show that GDC plays an essential role in supporting both GMO and IMO of a firm (H1: Beta = 0.213, P-value = 0.001, T-value = 3.132, f2 = 0.086; H2: Beta = 0.747, P-value = 0.000, T-value = 17.638, f2 = 1.261). The findings indicate that IMO and GMO can be significantly improved if a firm pays attention to nurturing and developing its GDC. Besides, IMO also shows its importance in creating and promoting a firm's GMO (H3: Beta = 0.705, P-value = 0.000, T-value = 11.017, f2 = 0.684). For SCAD, the findings illustrate that a firm can attain and develop its SCAD when it focuses on exploiting its DC and marketing in the context of green practices (H4: Beta = 0.506, P-value = 0.000, T-value = 5.360, f2 = 0.243; H5: Beta = 0.320, P-value = 0.001, T-value = 2.989, f2 = 0.055). However, the research results have not found the significance of IMO on a firm's SCAD (H6: Beta = -0.021, P-value = 0.411 > 0.05, T-value = 0.226 < 1.65).

5. DISCUSSION AND IMPLICATIONS

The research findings express that four of the five hypotheses reveal the crucial role of Green DC in enhancing sustainable SCA through facilitating both IMO and GMO. Discussing the specifics of these relationships, we find that:

Firstly, the first novel and important finding of the present study is the identification of a significant relationship between GDC and GMO (hypothesis H1). This finding provides important evidence from green approach for the foundational role of Green DC in GMO which little research has explored. While studies on DC in general have shown a strong influence on marketing capabilities, research specifically addressing GDC and GMO has been scarce. Previous studies often focus on GDC solely from an innovation perspective [61, 66]. Based on this finding, the firms can significantly enhance the creation and commercialization of environmentally friendly products and services through nurturing their green DC to recognize environmental changes and adapt to new conditions

Secondly, one of the most novel contributions (hypothesis H2) in this study is uncovering the critical role of GDC in promoting green-oriented organizational work and activities (IMO). The recent research has examined IMO from single fields – such as Wohlgemuth et al. [86] on DC and employee participation, Joshi and Dhar [62] on the influence of green training on green creativity, or Alsawafi et al. [70] on the positive effect of DC on internal quality relations. However, our study has evaluated the mechanism and important impact of GDC on IMO that is approached from across fields. Our research findings indicate that leveraging GDC enables a firm to enhance internal quality relations, improve staff involvement, and encourage green creativity across the organization. By approaching IMO from the perspective of employee perceptions about green orientation, our research provides valuable signals of the positive relationship between DC and IMO. This study also contributes new insights into the necessity of nurturing DC under green conditions (GDC) to strengthen internal quality relations and improve employee engagement in green orientation of the firm. This research also offers a more comprehensive view of GDC and IMO, assisting managers in finding effective methods to implement green practices in their firms.

Thirdly, the novel contribution of this study lies in shedding light on the direct and strong influence of IMO (Internal Motivation Orientation) on GMO (hypothesis H3). This is the relationship that has not been fully explored in previous studies. As an internal motivation direction, IMO allows a firm to disseminate knowledge and build a green culture throughout the organization, leading to successful environmental initiatives. GMO can be effectively implemented if communication among employees and departments is proper. IMO enables a company to cultivate a green culture, thus increasing GMO to enhance product quality and reduce costs. These findings contribute both theoretically and practically. These findings offer significant theoretical and practical contributions. While previous studies, such as those by Papadas et al. [24, 41], have examined the moderating role of IMO on GMO and corporate environmental performance (CAD), the direct impact of IMO on GMO has been underexplored. Our study has successfully investigated the strong influence of IMO on GMO. Accordingly, IMO helps create a dynamic, creative work environment that encourages employee initiative and innovation, thereby advancing and developing GMO to produce products and services aligned with new customer demands and green orientations.

Fourthly, regarding the effects of GDC on a firm's SCAD, the research findings show that GDC and GMO play critical roles in strengthening SCAD (H5). This result aligns with previous studies [55, 57, 73-75]. In the trend towards environmentally friendly business practices, our findings further solidify the importance of nurturing GDC to reinforce a firm's SCAD, as previously suggested by Chen et al. [14], Eikelenboom and de Jong [15]; Fainshmidt et al. [76], Kuei et al. [87] and Qiu et al. [17].

Notably, by conducting research in a particular country like Vietnam, our findings affirm the necessity of building and maintaining GDC to improve business competitiveness in emerging economies – an area previously unexplored. Once again, these results underscore the critical role of nurturing DC through enhancing environmental perception, knowledge absorption, and adaptation for sustaining a firm's CAD in the long term.

Fifthly, the research findings show that GMO plays a critical role in strengthening SCAD (hypothesis H5). Our finding affirms the importance of orienting green marketing, including applying environmentally friendly and advanced technologies in creating green products/services and improving processes to reduce costs and enhance product quality. This provides valuable evidence to reinforce the importance of GMO in strengthening a firm's SCAD, as suggested by Chung [78], Delmas et al. [81], Menguc et al. [79], Moravcikova et al. [23] and Papadas et al. [24]. Our findings also offer suggestions for managers to compete successfully by orienting their green marketing strategies.

Finally, this research results do not confirm the direct impact of IMO on SCAD (hypothesis H6), however, it confirms the role of IMO in sustaining GMO, which in turn contributes to the enhancement of CAD. This is an interesting implication revealing that internal communication is essential; however, in the context of the new trend of green adoption in a developing country as Vietnam, it also needs to be reflected in external practices through GMO, including green innovative products, services, green processes, and communication with relevant stakeholders. The findings of this study are truly interesting and novel. However, upon a closer look at the scales of IMO and GMO, we can see that these results are quite consistent with the findings of several related studies. Because numerous studies have found that IMO increases employee job satisfaction [83] and encourages

employees to contribute more to the firm, thereby improving product and service quality that are related components of GMO [25] and increasing customer satisfaction as well as SCAD [24, 88]. Therefore, businesses need to enhance their green dynamic capabilities (GDC), which in turn will drive IMO. The dynamism of GDC and the supporting internal environment will contribute to increasing GMO, thereby creating a SCAD for the organization.

In terms of practical implication, this study is of particular significance to Vietnam and other developing countries in general. The research provides empirical evidence to guide the development of GDC in enhancing SCAD for businesses, through two mediators: IMO and GMO. Specifically, the study highlights the powerful influence of GDC on IMO, helping employees understand the company's green strategic orientation and encouraging them to actively engage in environmental strategy. In Vietnam, green business is a new trend, and for many companies, employees' awareness of the green orientation remains limited. The study provided important guidelines to show that if businesses leverage GDC effectively, they can foster information exchange, help employees understand the company's green strategic direction and the value of green commitments. In addition, as indicated in the measurement items of IMO, encouraging and rewarding creative and green behaviors within the company plays an important role in creating a positive atmosphere that supports the green orientation.

In particular, the findings indicate that not only GDC positively impact GMO, but IMO also plays a crucial role in building GMO. When all employees are internally aligned with environmental values, the implementation of GMO becomes more consistent and effective, as employees will clearly understand the common goals, the value and necessity of the green orientation, and will be ready to collaborate. The integration of IMO and GMO based on GDC is a key orientation that enables businesses to gain internal support, optimize processes, innovate products and services, reduce costs, and collaborate with partners in the green value chain, thereby creating a SCAD. This is a crucial implication that helps businesses in Vietnam and other developing countries harness their internal strengths, build a united workforce toward green objectives, effectively implement GMO to create CADs, and make a positive contribution to the global environmental protection efforts.

6. CONCLUSION, LIMITATIONS, AND FURTHER DIRECTIONS

This study aims to explore the link between GDC, GMO, IMO, and SCAD in an organization. Based on the underpinning theories, the researchers argued the importance of nurturing core competencies and resources to help organizations create and strengthen their SCAD. Our study has made significant contributions both theoretically and practically. By conducting an empirical study in an emerging country like Vietnam, the research results provide reliable and convincing evidence about the role and importance of GDC in developing other capabilities in organizations, such as GMO and IMO. By examining IMO through the lens of employee motivation, our research has demonstrated the strong influence of GDC on IMO, which has not been extensively investigated or validated in previous studies. The research findings imply that when organizations possess flexibility and proactive innovation to absorb and adapt to new conditions, it can positively impact employees' perception and willingness to engage in environmentally friendly activities. Furthermore, our research also reveals the direct and positive impact mechanism of IMO on GMO, which has been overlooked in prior studies. Regarding SCAD, our research has proven the crucial role of GDC and GMO in strengthening a firm's CAD over the long term. The results suggest that in the trend of green and sustainable development, nurturing DC, including the ability to identify trends and changes in the environment, learning and absorbing knowledge to innovate and adapt to new conditions (GDC), is a crucial factor allowing firms to establish superior and sustainable advantages compared to competitors. In addition, the research highlights the vital role of nurturing GMO, including applying modern technologies and methods to create environmentally friendly products, services, and processes, which helps firms reduce costs, enhance quality, and innovate green and sustainable products and services, thereby further strengthening the firm's SCAD. For practical contributions, this study was conducted on various types of firms with different scales, ages, and business models in a typical emerging country like Vietnam. Therefore, the research results provide valuable insights for managers in Vietnam, particularly in similar emerging countries, when applying green practices in their production and business activities, thus finding effective methods to innovate, maintain, and enhance long-term CADs. However, some limitations are considered directions for our further research. They are as follows: (1) As an important competency, GDC is expected to not only have an effect on marketing fields but also impact other capabilities of an organization that have not been integrated in this study. Hence, future research should explore the influence of GDC on other fields and capabilities of a firm. (2) While some previous studies confirmed the direct role of different components of IMO in nurturing a firm's SCAD, our study has not supported this relationship between IMO with integrated approach and SCAD. Further research should re-examine this relationship in other contexts to clarify its connection. (3) Because the empirical context involves focusing on a specific country – Vietnam, the research findings need to be supported by further studies in other context be difficult to transfer to other contexts. Different findings might surface with a broader sample of enterprises with more significant variation in the country.

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