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To Explore or to Exploit? Opportunities, Dynamic Capabilities, and Performance of Maritime Enterprises in Ghana

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ABSTRACT

This study investigates how the recognition and exploitation of entrepreneurial opportunities influence small business performance via interactions with firm-level innovation capability and learning orientation. We frame the study within the maritime-sector context and seek to contribute to the understanding of how the interplay between opportunity recognition, exploitation, innovation capability and learning orientation affects the entrepreneurial performance of local businesses when there is a technological policy change. The study further frames its arguments from a dynamic capability perspective and tests its arguments with data from 284 local businesses operating in the Port of Tema. Findings reveal that opportunity exploitation and learning orientation as well as their interplay have a positive and significant effect on entrepreneurial performance. The study consequently presents local micro-entrepreneurial reactions to macro-level policy changes within the maritime sector – an issue that has largely remained uninvestigated in the African business literature due to maritime blindness.

KEYWORDS

Entrepreneurial opportunities, maritime SMEs, dynamic capability; learning orientation; innovation capability

1. Introduction

In the late 1990s after the collapse of the Black Star Shipping Line in 1997, the Government of Ghana and its global development partners sought to address the issue of sustainable ports through the Ghana Trade and Investment Gateway Project (Gateway Project) established in 1998 (Aryee & Hansen, 2021). The project largely driven by a trade facilitation focus sought to develop the port infrastructure to reduce the cost of imports and exports from Ghana and ultimately making Ghana the entrepôt to West Africa (Chalfin, 2010). The underlying neoliberal philosophical approach led to a sparked interest in the Port of Tema – the main port of Ghana. These interests mainly came from multinational companies who wanted technology improvements to some port areas such as the development and management of terminal operations, custom management platforms and scanners (Lawer, 2019). The Port of Tema through a partnership between the government and some multinational companies have commissioned these new technology inputs (Lawer, 2019). Consequently, this new government policy has the

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tendency to create smoother pathways through which the stakeholders of the local maritime industry interact with the port. The question this study seeks to address is as follows: how has this policy environment and the resulting outcomes influenced Ghanaian business activities such as stevedoring, freight forwarders, chandlers, ship brokers, construction services firms, hospitality service providers and others operating in the maritime sector specifically at the Port of Tema? Despite the relevance of finding an “opportunity” to succeed in entrepreneurship and a wide range of scholarly dexterity on the subject in entrepreneurship studies (Mary George et al., 2016), there is a striking dearth in knowledge about how existing businesses improve on their enterprises through opportunity recognition and exploitation. Several scholarly works have focused on new ventures’ search, experimentation, and implementation of opportunities and how these contribute to venture creation and start-up growth (Khin & Lim, 2018; Schwartz & Teach, 2000). Nonetheless, the recognition and exploitation of new opportunities are not an archetype of only foundational businesses (Y. L. Wang et al., 2013). As a result, the understanding of how existing ventures, especially those in opportunity-exposed contexts, achieve enhanced performance through further exploration and exploitation of opportunities is limited in the literature.

Theorizing from a dynamic capability perspective (Teece, 2007), the study argues that maritime policy initiatives create disequilibrium within the sector, which presents opportunities and threats to local entrepreneurs and businesses. However, those entrepreneurs and businesses that can recognize and exploit the opportunities inherent in the policy changes are likely to perform better. Their performance is further enhanced when these local entrepreneurs and local businesses possess innovation capabilities and a strong learning orientation as defined by Marshall et al. (2019) and Serafim and Cristóvão Veríssimo (2021), respectively. Consequently, we ask the question of how local businesses in the maritime sector identify and exploit opportunities resulting from maritime-sector policy actions and how the recognition and exploitation of opportunities influence performance? These questions and arguments of the study are tested with primary data from 284 local entrepreneurs and businesses operating at the Port of Tema, Ghana. The data are analyzed using STATA 15.

By answering the research questions, this study contributes to a stream of literature for maritime policy and entrepreneurial studies. Most extant studies in the entrepreneurship literature have focused less attention to how existing enterprises recognize and exploit opportunities and even less to the maritime entrepreneurship context, which is a growing area of study. The existing studies about the maritime sector that explore entrepreneurial issues have discussed social entrepreneurship (X. Wang et al., 2020), entrepreneurial education for maritime students (Newerli-Guz & Palka, 2018), small-scale entrepreneurs (Keleş & YILMAZ, 2020), sustainable maritime entrepreneurship (Lekakou & Stefanidaki, 2016) and small business development in maritime. This study contributes toward addressing the lacuna in the literature stream. The study shows maritime policy changes serve as environmental jolts that disturb industry equilibrium but offer opportunities for local entrepreneurs and business owners to exploit the opportunities that are presented. Furthermore, the study contributes to the literature on dynamic capability theory in the maritime sector. The ensuing sections of the manuscript contain the literature review and hypothesis development, methods, results, discussions of findings, implications for theory and practice, and conclusions.

2. Literature review and hypotheses development

2.1. SMEs in the maritime sector

The maritime sector is broadly defined as all businesses involved in the design, construction, manufacturing, acquisition, operation, supply, repair, and/or maintenance of vessels or their component parts in and around the port value chain (Akakpo, 2016). Additionally, the industry involves running businesses like managing and/or operating shipping lines, stevedoring, customs brokerage services, marine railways, shipyards, marine repair shops, dry docks, shipping, freight forwarding services, and similar businesses. Whether in the commercial or private sectors, the maritime industry has been highly beneficial in that it has offered services connected to the economic pursuits that have engaged people throughout history. Over 70% of world commerce by value and over 80% of global trade by volume are transported by water (United Nations Conference on Trade and Development, 2021). Adibe et al. (2019) noted that the 16 member states of the Economic Community of West African States (ECOWAS) conduct more than 60% of their trade by sea, which has a substantial influence on each individual member state.

While the role of businesses in the maritime value chain is essential, few studies have investigated operational differences between firms within the maritime space (Jobo & Phyllis, 2020). Notably so, most firms that operate within the maritime cluster are large logistic firms. Nevertheless, empirical studies have shown the relevance of SME development and entrepreneurship in the maritime industry and have sought to examine the various challenges faced by these SMEs (Bass & Ernst-Siebert, 2007; Jobo & Phyllis, 2020). However, very few have been done in sub-Saharan Africa with the majority within a Nigerian context (Olorunshola, 2019). Notwithstanding the dearth in the maritime SME literature, maritime SMEs have the characteristics of being very innovative (Acciaro & Sys, 2020; Bass & Ernst-Siebert, 2007), having high internationalization prospects (Morais & Ferreira, 2020), and operating in organizational clusters (Doloreux et al., 2016). In the Ghanaian context as well, studies regarding the SMEs in the maritime industry are scant, despite the country's maritime resource endowment. Even though entrepreneurship development in the maritime sector has been a growing phenomenon in other parts of the world over the past two decades (Clott & Hartman, 2022; Fusaro et al., 2016), Africa and more specifically Ghana as a coastal nation are still yet to fully exploit the numerous opportunities that are available for entrepreneurial growth and economic development.

2.2. Dynamic capability theory

It is important to note that industry-related policy change distorts market equilibria and thus create new market mechanisms (both opportunities and threats) to which entrepreneurs and entrepreneurial firms need to adapt in order to be relevant (Forrest & Liu, 2022). These individuals and firms need to have certain capabilities that are required to minimize their threats as well as take advantage of the opportunities presented. Entrepreneurial firms need to possess dynamic capabilities that can enable them to leverage the industry-related policy changes in the maritime sector to improve performance. The dynamic capability of an organization lies in its ability to reconfigure resources in a manner that builds novel firm capabilities when there are situational

changes in the business environment (Benitez et al., 2018; Teece, 2007). From extant literature, organizational dynamism through configuration processes such as new product development and proactivity in the market affects performance (Benitez et al., 2018; Pavlou & El Sawy, 2006; Tanriverdi, 2005).

Dynamic capability in organizations has also been found to enhance overall firm-level entrepreneurship (Chang et al., 2015) which subsequently influences performance (Mithas et al., 2011), so it leads to higher levels of entrepreneurial behavior in existing firms. A firm's ability to build dynamic capability stems from developing crucial competencies from both seen and unseen shifts in the environment (Yoruk & Jones, 2020). On the other hand, firm-level capacity-building competences are premised by the ability of organizations to identify and exploit factors that are exposed by environmental changes (Saemundsson & Holmén, 2011). Y. L. Wang et al. (2013) also emphasize that in times of environmental shocks such as technology changes, the R&D capabilities of firms allow them to have a unique advantage to create new business solutions to further enhance performance. Thus, these theoretical antecedents enable our study to conceptualize opportunity recognition and exploitation as a means through which small businesses in the maritime space at the Port of Tema can build dynamic capabilities, which influences performance.

2.3. Opportunity recognition and business performance

Several entrepreneurship scholars have discussed the topic of opportunity recognition and how it drives the entrepreneurial process. For instance, Ding (2019) defines entrepreneurial opportunities as circumstances that occur from an entrepreneur's ability to develop a course of action that converts an existing business situation into a lucrative one. Short et al. (2010) and Ramoglou and Tsang (2016) have pointed out that, in the opportunity recognition process, individuals can either discover or create new opportunities from their interactions with the business environment. Shin and Lee (2013) attribute opportunity identification to the existence of market distortions due to changes in factors such as supply, demand, technology, and regulation in the form of government policy directions. Grégoire et al. (2010) emphasize that, in the opportunity recognition process, the organization tries to make business sense of the shifts in the environment and hence the phenomenon encompasses decision-making and not action. Whereas the prior assertion has gathered several scholarly debates (see Filser et al., 2020), the arguments of how opportunity recognition gives firms competitive advantage are cogent in the entrepreneurship literature. For instance, Hajizadeh and Zali (2016) show that prior knowledge is a composite of the opportunity recognition process. Vandor and Franke (2016) also admit that experience is an antecedent for profitable opportunities in the business environment. This study frames opportunity recognition based on extant literature such that knowledge-oriented antecedent for finding new business leads is a factor that yields higher levels of performance in organizations (see Filser et al., 2020; Hajizadeh & Zali, 2016; Y. L. Wang et al., 2013). Hence, this study hypothesizes that:

H1: *Opportunity recognition has a positive significant relationship with performance of maritime enterprises in Ghana.*

2.4. Opportunity exploitation and business performance

Over the years, scholars have distinctly separated entrepreneurial opportunity recognition and its operationalization from opportunity exploitation (Filser et al., 2020). While the process of identification relies on prior knowledge and decision-making, exploitation of entrepreneurial opportunity is premised on strategy and action-based activities of the small business. Succinctly, this study defines opportunity exploitation as an enterprise's ability to take advantage of emergent business opportunities because of changes in government policy direction in the maritime sector by refining, selecting and implementing novel business processes (see Im & Rai, 2008). Although exploitation is rooted in action and strategy, which may lead to higher levels of performance, Beynon et al. (2020) note that the phenomenon should be based on timely discovery and hinged on organizational capabilities to effectively exploit such opportunities. Yet we are conscious that opportunity exploitation is contextual and dependent on the ability of the organization to discover the opportunity in the first place (Sarasvathy et al., 2003; Shane & Venkataraman, 2000). We therefore approach opportunity exploitation from the point where they exist (opportunities created by government policy actions) and are available to be exploited. Essentially, we build on assertions in the extant literature that effective business opportunity exploitation yields enhanced enterprise growth and productivity (Gielnik et al., 2017; Yoruk & Jones, 2020). The study consequently hypothesizes that:

H2: *Opportunity exploitation has a positive significant relationship with the performance of maritime enterprises in Ghana.*

2.5. Effects of learning orientation

The learning orientation according to Serafim and Cristóvão Veríssimo (2021) is the set of a firm's values and its ability to improve upon them to ensure long-term enhanced business performance. The authors also suggest that for learning orientation to have a positive impact on performance, it is imperative for the firms to invest in improving and innovating their processes and practices that offer a sustained advantage. Essentially, through learning orientation, there are possibilities for new innovative and entrepreneurial opportunities identified for pursuit. Makhloufi et al. (2022) confirm that organizational learning tends to be leveraged by small businesses in seeing promising opportunities to pursue. Extant literature has shown that entrepreneurial opportunities can be identified either through thorough research or can spring out of existing business and environmental changes (Calabrese et al., 2018). Serafim and Cristóvão Veríssimo (2021) further indicate that when existing business and environmental changes create

entrepreneurial opportunity, the capacity of the firm to turn the opportunity into an operable innovation is tantamount to the exploitative knowledge curve of the firm.

Urban and Willard (2017) and Makhloufi et al. (2022) show that entrepreneurial opportunity recognition and exploitation can be attributed to the learning orientation of the small business. Empirically, learning orientation in the form of experience gathering by firms has been found to enhance opportunity recognition and exploitation (Baron & Ensley, 2006; Kakapour et al., 2016). Lumpkin and Lichtenstein (2005) showed that organization learning strengthens the firm's abilities to recognize, equip, and exploit opportunities. Song et al. (2017) also indicate that knowledge acquisition influences the relationship between opportunity recognition and entrepreneurship success. From these empirical antecedents, we conceptualize learning orientation as a factor that strengthens firms' abilities to identify and exploit business opportunities with critical emphasis on opportunities emanating from technological advances in the Ghanaian maritime sector. Therefore, the study hypothesizes the following:

H3a: *The effect of opportunity recognition on the performance of maritime enterprises in Ghana is stronger when learning orientation is high rather than low.*

H3b: *The effect of opportunity exploitation on the performance of maritime enterprises in Ghana is stronger when learning orientation is high rather than low.*

2.6. Effects of innovation capability

Marshall et al. (2019) stated that it is imperative for firms to explore new ideas or opportunities or even leverage on existing knowledge and resources to innovate in a competitive market to be successful. The authors note that the ability of a firm to be innovative is dependent on innovative behaviors and capacities displayed over time. According to Liu et al. (2017), innovation can be developed and transferred through roles to build enterprise opportunities. According to Lee and Meyer-Doyle (2017), entrepreneurial intention and knowledge building can be achieved within low-risk perspectives such as expanding innovative capabilities.

People who gain entrepreneurial knowledge through part-time entrepreneurship seem to be more prone to having innovative behavior as staff members once they see the opportunity to better performance. Makhloufi et al. (2022) viewed innovation capacity as a driver of entrepreneurial opportunity development. We agree and frame this work in accordance with the extant literature (Lee & Meyer-Doyle, 2017; Liu et al., 2017; Marshall et al., 2019) that entrepreneurial opportunity can be identified from the innovation capacity of the enterprises and that the opportunity identified may determine the level of performance in the organization. Makhloufi et al. (2022) suggested a positive relationship between entrepreneurship opportunity and business performance and observed a direct relationship between innovation capacity and entrepreneurial opportunity. We therefore propose the following hypotheses:

H4a: *The effect of opportunity recognition on the performance of maritime enterprises in Ghana is stronger when innovation capability is high rather than low.*

H4b: *The effect of opportunity exploitation on the performance of maritime enterprises in Ghana is stronger when innovation capability is high rather than low.*

3. Methods

3.1. Research context

Historically, Ghana has had a checkered maritime past. Prior to the 1920s, Ghana's (then Gold Coast) participation in international trade was undertaken through the approximately 40 landing sites located along the coast of the country.¹ Between 1920 and 1960, however, the Port of Takoradi served as the main port for both import and exports. The Port of Tema became operational in 1962 and has since served as the main port of choice for shippers and importers in the country. Although Ghana has three ports with one yet to be operational (Keta Port), for the purposes of this study we focus our efforts on policy initiatives aimed at the Port of Tema. The Port of Tema lies on the shores of the Gulf of Guinea in southeastern Ghana. About 29 km east-northeast of Accra, the country's Capital. Ghana had muddled through much of the 1970s and 1980s with military coups and counter coups (Puplampu, 2004). The economy fell to an all-time low, which culminated in the 1982/83 famine as a result of drought and low foreign exchange needed to purchase basic necessities for the citizens. The country then started the implementation of the Economic Recovery Programme (ERP) and the Structural Adjustment Programme (SAP). It was within this economic climate that the government of Ghana and global development partners adopted a neo-liberal approach to development. In the mid-1990s, the Government of Ghana adopted a neo-liberal approach to maritime governance in the country (Chalfin, 2010). This culminated in the execution of the Ghana Trade and Investment Gateway Project (Gateway Project). The Gateway Project which cost \$56 m with funding from the International Development Association (IDA) was approved in July 1998 and was completed in December 2009. The Gateway project aimed at attracting a critical mass of export-oriented industries to Ghana in order to facilitate Ghana's international trade participation and achieve economic growth.² The project primarily focused on developing an industrial enclave in Tema that would facilitate export growth. Consequently, to achieve this objective, the project also helped finance infrastructure in and around the Port of Tema. These included direct support to the Ghana Ports and Harbours Authority (GPHA) and the Ghana Revenue Authority – Customs Division (then Customs, Excise and Preventive Service (CEPS)). The project financed the development of the Ghana Customs Network (GCNet). The GCNet platform enabled private operators at the Port of Tema to interact on a web-based platform for the purposes of trade facilitation. This project set the stage for the public–private partnership arrangements that have driven maritime initiatives in Ghana since 2000. For this reason, much of maritime policy in Ghana has been aimed at trade facilitation.

In 2000, the government of Ghana replaced the pre-shipment inspection regime that had been in force for more than three decades in favor of a destination inspection regime (Chalfin, 2004). Contecna, a Swiss multinational, was offered the opportunity to conduct destination inspection on-behalf of the state using giant X-Ray scanners at the port. A joint venture company Gateway Services Limited was formed between Contecna, Ghana Customs, GPHA, and Prudence Systems. When the New Patriotic Party (NPP) administration took over the governance of the country from the National Democratic Congress (NDC) in 2001, a new scanner was introduced and operated by Ghana Link Network Systems – Nick-TC scan. In 2004, the GPHA entered into a concession agreement with the Meridian Port Services (MPS), a partnership involving the GPHA, APM Terminals, and Bolloré with the latter two being Danish and French multinationals, respectively. In 2014, in furtherance of the 2002 partnership, the GPHA signed another concession agreement worth \$1.5b dollars with MPS to expand the Port of Tema. The expansion culminated in the construction of a new terminal (T3) owned by the MPS partners. The terminal has a draught of 16 m; an additional 400 m of berth and 16 gantry cranes were inaugurated to ensure the Port of Tema continues to lead in efficiency and security. The terminal has an annual Twenty-foot Equivalent Units (TEU) capacity of 2 million TEUs. The new terminal cemented the Port of Tema's reputation as a leading container port in West and Central Africa. This reflects another aspect of policy discussions; the dominance of foreign interests in the maritime-sector policy regime in Ghana since the mid-1990s.

Between 1995 and 2021, these foreign and Ghanaian interests initiated several other public–private initiatives. For instance, as part of the Gateway Project, SGS Ghana Limited, another Swiss multinational together with Ghana Customs, initially implemented and managed the GCNet platform that hosted the Integrated Customs Management Software and subsequently with Dubai Customs World (formerly WestBlue Consulting) as part of a Single Window Platform (Acheampong et al., forthcoming; Aryee et al., 2021). In 2020, they were both replaced by UNIPASS/ICUMS managed and operated by Ghana Link Network Systems and their Korean collaborators.³ The review of the maritime policy landscape since the mid-90s establishes that Ghana has been implementing a public–private partnership policy regime. In the period leading to 2011, this was implicit in the neo-liberal philosophical approach to development adopted with support from global development partners. In 2011, the government of Ghana through the Ministry of Finance and Economic Planning developed and adopted a National Policy on Public Private Partnerships that has since guided these arrangements involving state agencies. This has included the management and regulation of the maritime sector by key maritime actors such as the Ghana Maritime Authority, Ghana Ports and Harbors Authority, and the Ghana Shippers Authority. The government of Ghana noted in the policy document that while the state was responsible for the development of public infrastructure,⁴ the cost and skill needed in designing and implementing large-scale projects required the participation of the private sector. GPHA has also indicated that while it is an autonomous public port, it partners significantly with private operators in the port as part of its hybrid port model.⁵

3.2. Data and sample

The study adopts a quantitative methodology based on the positivist research paradigm. The survey is based on our collection of primary data from small local businesses operating in and around the Port of Tema. From previously adopted scales in the literature, we developed a structured questionnaire used for data collection. We collected data from port businesses registered with the Business Development unit of the Ghana Port and Harbor Authority. The list is comprised of all businesses with clearance to operate in and around the Port of Tema. The categories included shipping lines, stevedores, clearing, chandlers and forwarding agents, and haulers. A resultant sample of 284 distinct respondents were thus randomly sampled from the accessible population based on their suitability and prerogative to participate in the survey (Malhotra & Krosnick, 2007). Four additional cases were dropped due to too many missing data points. The choice of sample size was also based on adequacy considerations with reference to Hair et al. (2010) prescription of the required sample size for robust quantitative analysis.

3.3. Measures and analysis

In constructing the study questionnaire, we relied on tested and verified constructs from the literature. Consequently, opportunity recognition was measured by five items, while opportunity exploitation was conceptualized and measured with four items (Kuckertz et al., 2017). A five-item construct was used to measure the innovation capability of the small businesses based on the extant measurement scale of Monferrer et al. (2015). The scale for learning orientation included four items that were adopted from the study of Pesämaa et al. (2015). In conceptualizing entrepreneurial performance, financial performance measures from the study of Lin et al. (2019) were utilized. The constructs and their respective scaling were measured on a 5-point Likert scale (which ranges from 1 = strongly disagree to 5 = strongly agree). The study also included four (4) control variables: gender, age, education, and experiences which all scalar categorical variables collected through the survey. After data collection, data entry, introductory coding, data cleaning, and subsequent data analysis were done using STATA 15. The study employed a Confirmatory Factor Analysis (CFA) to ensure constructs retrieved from the literature possessed internal consistencies to suit the study context. The CFA was operationalized with a principal component factor analysis with varimax rotations. To avoid common method biases four methods were used. In the initial procedural method, the researchers ensured anonymity of the respondents (Burke et al., 1993; Podsakoff et al., 2003) by avoiding questions that expose organizational affiliations to allow honest opinions without fear or favor and also to eliminate any form of biases emanating from the field survey, partial correlations were employed (Appendix A) which showed significant coefficients for all constructs taking into consideration the variances explained all other variables (Podsakoff et al., 2003). The study also conducted Harman's one-factor solution (Appendix B) which showed 38% variance explained showing no common method bias, which indicated estimations showing statistical model fitness (Podsakoff et al., 2003).

From the results in Table 2, the loadings lie within the interval of 0.60 and 0.86 confirming suitability for further use in the current context (Hair et al., 2016). The recorded Cronbach's alpha values were above 0.8 in Table 2 and also showed the fitness and reliability of the confirmed constructs (Hair et al., 2016). To ensure construct validity, Average Variance Extracted (AVE) and Composite Reliability (CR) metrics were used. The AVE and CR values were above 0.5 and 0.8, respectively, indicating enough divergence among constructs as well as suitable convergence within constructs hence valid for further composition and analysis (Rezaei & Ghodsi, 2014). The data employed also depict acceptable normality as skewness and kurtosis thresholds lie between $-1, 1$ and $-3, 3$, respectively (Table 1). Table 1 shows the descriptive statistics of the overall constructs used for the study. Following the factor analysis, reliability, and validity tests, an ordinary least squared (OLS) regression method with robust coefficients was employed. According to Hu and Bentler (1999), robust coefficients lessen the outlier effects of the sample, hence preferred in this study over standard coefficients. The whole study was operationalized in four hierarchical models including estimations of demographic control variables (gender, age, education, and experience). After model estimations, interaction relationships were plotted to show the levels of influence from moderator variables on the main predictor variables and the independent variables.

Table 1. Descriptive statistics.

Variable code	Mean	Standard deviation	Min	Max	Skewness	Kurtosis
Age	32.592	8.625	21	58	0.781	2.967
Education	0.944	0.231	0	1	-3.848	15.81
Experience	7.789	5.848	1	25	1.058	3.301
Skill	0.803	0.399	0	1	-1.522	3.317
OR_1	3.282	1.118	1	5	-0.814	2.600
OR_2	3.282	1.167	1	5	-0.668	2.356
OR_3	3.296	1.182	1	5	-0.794	2.401
OR_4	3.38	1.145	1	5	-0.837	2.576
OR_5	3.338	1.127	1	5	-0.750	2.373
OE_1	2.986	1.264	1	5	-0.100	1.758
OE_2	3.141	1.132	1	5	-0.278	1.879
OE_3	2.887	1.135	1	5	0.106	2.002
OE_4	2.732	1.164	1	5	0.210	1.948
IC_1	3.408	1.147	1	5	-0.618	2.337
IC2	3.551	1.059	1	5	-0.944	2.075
IC_3	3.493	1.075	1	5	-0.803	2.746
IC_4	3.352	1.166	1	5	-0.819	2.528
IC_5	3.423	1.072	1	5	-0.763	2.543
LO_1	3.915	1.047	1	5	-0.165	2.911
LO_2	3.901	1.092	1	5	-0.110	2.514
LO_3	3.887	1.071	1	5	-0.952	2.137
LO_4	3.901	1.011	1	5	-0.282	1.344
LO_5	3.915	1.047	1	5	-0.239	1.029
BP_1	3.676	1.100	1	5	-0.995	3.388
BP_2	3.563	1.112	1	5	-0.809	2.944
BP_3	3.429	1.118	1	5	-0.468	2.394
BP_4	3.549	1.162	1	5	-0.796	2.794
BP_5	3.577	1.032	1	5	-0.711	2.951

Observation = 284.

Table 2. Confirmatory factor analysis, reliability, and validity analysis.

Items (KMO = 0.8743)	Loading	CR	AVE	α
Opportunity recognition (Kuckertz et al., 2017)		0.885	0.607	0.962
My business is always alert to business opportunities from the new port	0.7994			
My business research potential markets to identify business opportunities in the new port	0.7852			
My business searches systematically for business opportunities in the new port	0.8243			
My business looks for information about new ideas in the new port on products or services	0.7697			
My business regularly scans the new port environment for business opportunities	0.7140			
Opportunity Exploitation (Kuckertz et al., 2017)		0.840	0.568	0.883
My business has set up an organization to pursue a business opportunity we perceived	0.7799			
Based on a business opportunity we perceived, my business has developed a new market	0.7464			
My business has put together a team to pursue a business opportunity we perceived	0.7404			
We have approached investors to acquire funding for a business opportunity in the new port	0.7465			
Innovation Capability (Monferrer et al., 2015)		0.851	0.536	0.951
Our business has an organizational culture that promotes innovation	0.8251			
Our business is able to use knowledge from various sources to develop products/ services efficiently and rapidly.	0.7408			
Our business is able to identify changes in the market/port and rapidly apply them to its own products and processes.	0.7637			
The employees in our business are able to contribute to activities such as product development, improving the innovation process and developing new ideas.	0.6017			
Our business is able to evaluate new ideas from customers, port, etc. and take them into account in product/service development.	0.7100			
Learning Orientation (Pesämaa et al., 2015)		0.904	0.653	0.980
My business' ability to learn is important to increase the value added to our organization.	0.8289			
We basically agree that our organization's ability to learn in the new port system is the key to our competitive advantage	0.8058			
Our firm is able to identify changes in the market/port and rapidly apply them to its own products and processes.	0.7561			
The basic values of this organization include learning as key to improvement	0.8309			
The sense around here is that employee learning is an investment, not an expense	0.8157			
Business Performance (Lin et al., 2019)		0.930	0.727	0.976
There has been Profitability in my business under the new port	0.8437			
There has been Sales growth in my business under the new port	0.8693			
There has been Market share growth in my business under the new port	0.8582			
There has been Return on investment in my business under the new port	0.8444			
There has been Overall firm performance in my business under the new port	0.8461			

Kaizer Meyer Olkin Estimator = 0.924.

4. Results

The OLS regression results are presented in Table 3. The first model presents results for the control variables. The study finds that the gender of respondent shows significance ($\beta = 0.487$, p-value <0.01), whereas age ($\beta = -0.313$, p-value >0.50), education ($\beta = 0.089$, p-value >0.50), and experience ($\beta = 0.091$, p-value >0.50) show no significance. We also recognize that age and experience show consistent significant results across the four estimated models. In model 2, the effects of opportunity recognition, opportunity exploitation, innovation capability, and learning orientation on business performance are presented. We find a positive and significant relationship between opportunity exploitation and entrepreneurial performance ($\beta = 0.438$, p-value <0.001) and between learning orientation and entrepreneurial performance

Table 3. Presentation of results.

Variables ($y = \text{performance}$)	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)	Model 4 β (SE)
Controls				
Gender (male = 1)	0.487(0.145) **	0.058(0.102)	0.055(0.093)	0.177(0.099)
Age	-0.313(0.423)	-0.563(0.249) *	-0.495(0.239) *	-0.457(0.237) *
Education (tertiary = 1)	0.089(0.130)	-0.062(0.083)	-0.092(0.082)	-0.062(0.083)
Experience	0.091(0.154)	0.347(0.075) ***	0.370(0.073) ***	0.354(0.074) ***
Direct effects				
Opportunity recognition		-0.028(0.081)	-0.537(0.383)	-1.055(0.1145) **
Opportunity exploitation		0.438(0.062) ***	1.313(0.406) ***	1.971(0.446) ***
Innovation capability		0.087(0.073)	0.288(0.133) *	0.016(0.069)
Learning orientation		0.419(0.065) ***	0.391(0.065) ***	0.659(0.097) ***
Interaction effects				
Opportunity Reg.*Innovation Cap.			0.142(0.097)	
Opportunity Exp.*Innovation Cap.			0.236(1.103) **	
Opportunity Reg.*Learning Orient.				-0.249(0.095) **
Opportunity Exp.*Learning Orient.				0.362(0.104) ***
Constant	4.078(1.301) **	1.700(0.904)	0.764(1.005)	0.365(1.001)
R^2	0.0524	0.5720	0.5894	0.6031
ΔR^2	-	0.5196	0.5370	0.5507
Observations	280	272	272	272

*** $P < 0.001$, ** P , and * $P < 0.05$; β = coefficient; SE = standard error.

($\beta = 0.419$, p -value < 0.001). The other main relationships hypothesized between opportunity recognition and entrepreneurial performance ($\beta = -0.028$, p -value > 0.50) and that of innovation capability and entrepreneurial performance ($\beta = 0.087$, p -value > 0.50) showed no significance. However, it is interesting that though not significant, the nexus between opportunity recognition and performance yielded negative coefficients throughout the estimated models with a peculiarly significant estimate in model 4.

In models 3 and 4, we test interactions between our moderator variables (innovation capability and learning orientation) on the opportunity recognition-performance and exploitation-performance nexuses, respectively. The results show that the multiplier effect of opportunity recognition and innovation capability has no significant relationship with business performance ($\beta = 0.142$, p -value > 0.50). Relatively, the interaction between opportunity exploitation, innovation capability, and business performance yield a significant positive effect ($\beta = 0.236$, p -value < 0.01). We reluctantly deduce from the findings that capacity without exploitation yields futile profitable results for firms. In model 4, the multiplier effect of opportunity recognition and learning orientation shows a significant negative effect on business performance ($\beta = -0.249$, p -value < 0.01). That of opportunity exploitation, learning orientation, however, shows a significant positive effect on business performance ($\beta = 0.362$, p -value < 0.001). Our empirical findings provide evidence of interaction effects between learning orientation, opportunity recognition, exploitation, and business performance [Figures 1, 2 and 3](#). Perhaps when a business adopts a learning approach to strategy adoption in a technology advancing environment, it positions itself to apply its continually obtained knowledge to navigate uncertain instances in that environment.

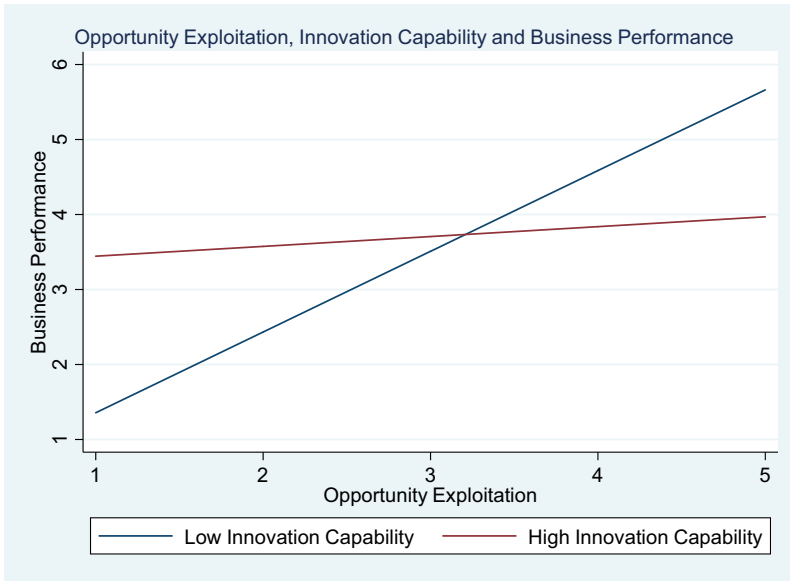


Figure 1. Opportunity Exploitation, Innovation Capability and Business performance.

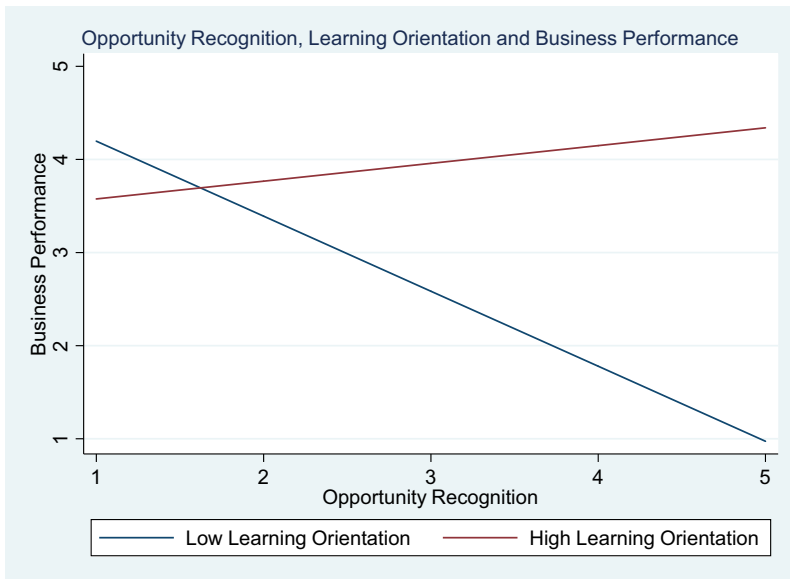


Figure 2. Opportunity Recognition, Learning Orientation and Business performance.

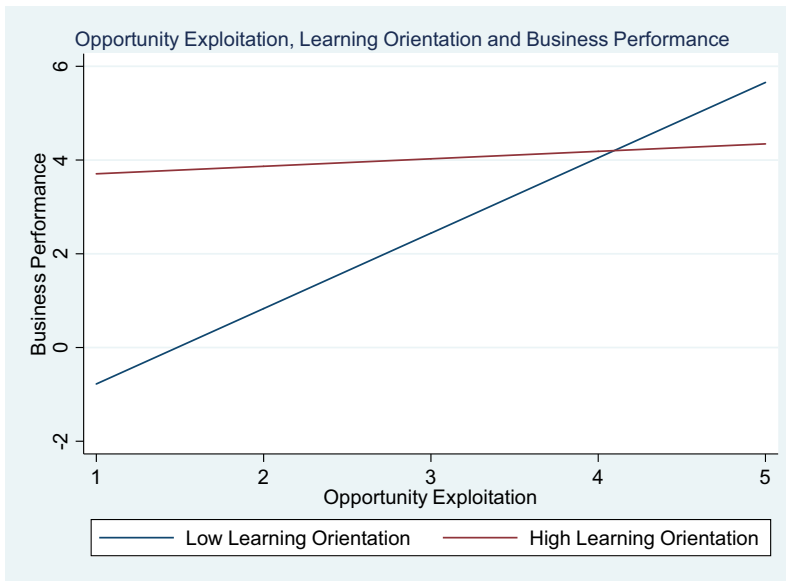


Figure 3. Opportunity Exploitation, Learning Orientation and Business performance.

5. Discussion of findings

This study sought to understand the mechanism, through which local businesses in the maritime sector recognize and exploit opportunities resulting from government policy actions in the sector. The study also explores the differing effects of opportunity recognition and exploitation along the lines of learning orientation and innovation capabilities. The arguments made are tested with data from small business owners and entrepreneurs operating at the Port of Tema. The data are analyzed using CFA and OLS analytical methods in the STATA 15 suite.

The study made six hypotheses. The first hypothesis argued that opportunity recognition was positively correlated with entrepreneurial performance. This was based on arguments in the dynamic capability literature that suggests that prior knowledge and past experience serve as the mechanisms through which opportunity recognition offers better performance (Hajizadeh & Zali, 2016; Vandor & Franke, 2016). This study does not find support for this assertion and consequently disconfirms this argument. This finding is not surprising as opportunity recognition in itself is a state of enterprise inertia (Z. Guo et al., 2018; Zott & Amit, 2013) and depends on exploitation mechanisms to yield a concurrent performance (H. Guo et al., 2016, 2017). To a large extent and barring the dearth of scholarly works in the context, extant literature shows traces of opportunity recognition as a limited standalone antecedent to entrepreneurial performance (Anwar et al., 2022; H. Guo et al., 2016, 2017). Consequently, entrepreneurial firms that can act on opportunities recognized have enhanced performance (Anwar et al., 2022).

The second hypothesis opines that opportunity exploitation offers small businesses and entrepreneurs an advantage. Those who lack it cannot accrue. From the extant literature, firms have a greater prospectus to enhanced performance when they exploit opportunities than be indifferent (Choi et al., 2008). Consequently, the study finds

support for this hypothesis. By exploiting opportunities, some advantage accrues to these small businesses and entrepreneurs because of their ability to reconfigure their processes in line with what policy changes or distortions offer (Beynon et al., 2020). However, these reconfigurations are contextual as sometimes some of the policies constrain these firms although overcoming these contextual challenges offers greater benefits. For instance, Choi et al. (2008) show that the time it takes for entrepreneurial firms to exploit opportunities after exploration is essential. Within technology policy change contexts such as that of the Port of Tema, where legitimacy is of importance (see Acheampong et al., 2022), an “ignorance threshold” may lessen the effects of legitimizing exploited technology opportunities late in the port cluster.

The third set of hypotheses argues that small business innovation capabilities positively moderate the relationship between opportunity recognition, opportunity exploitation, and entrepreneurial performance. In terms of the moderation effects, the study finds that innovation capability accentuates the positive effects of opportunity exploitation on entrepreneurial performance but not with opportunity recognition. This finding is in line with Withers et al. (2011) that innovation performance is accrued based on entrepreneurial capabilities for innovation activities. This suggests that entrepreneurs and small businesses in the maritime sector that have innovation capability and exploit opportunities by their actions presented as a result of policy initiatives may perform better. The study reasons that innovation capability’s inability to, significantly, moderate the relationship between opportunity recognition and performance may be due to two main factors. First, Makhoulfi et al. (2022) argued that for innovation capability to accentuate any possible benefits from opportunity recognition, employees of the small businesses needed to perceive benefits and ease of use from the innovation. A situation we suspect may be lacking in small business employees. Secondly, it could also be due to the fact that opportunity recognition and innovation capability in themselves were irrelevant in this sector of the economy.

The final set of hypotheses argue that learning orientation strengthens the effects of opportunity recognition and opportunity exploitation on entrepreneurial performance when maritime policy changes emerge from the government of Ghana. Although the study did not hypothesize the effect of learning orientation, it is observed that it has a positive and significant effect on entrepreneurial performance. This we believe is the ability of small businesses with learning orientation to improve upon their present set of skills across time (Serafim & Cristóvão Veríssimo, 2021). Also, it is observed that although opportunity recognition had been insignificant in previous models, it rises to significance in the final model. The observed direct effect and the moderation effect are both negative. The finding suggests that learning orientation dampens the negative effect of opportunity recognition on entrepreneurial performance. Small businesses with learning orientations that exploit opportunities record accentuated performance as a result of the interaction between these two effects. This finding confirms Lumpkin and Lichtenstein’s (2005) argument that organization learning strengthens the firm’s abilities to recognize, equip, and exploit opportunities. The study observes that opportunity exploitation and learning orientation are useful in achieving entrepreneurial performance for entrepreneurs and small business owners in the face of changing government policy actions in the Ghanaian maritime sector.

5.1. Implications for practitioners

The study offers few practitioner insights for entrepreneurs and small business owners operating in the maritime sector in Ghana and possibly the rest of Africa. It is imperative for small business owners and entrepreneurs to realize that government policy initiatives will continue to evolve into the foreseeable future. In this environment, their ability to develop dynamic capabilities that can enhance their entrepreneurial performance when these policy changes occur is critical. Two main skills have been proposed for small businesses and entrepreneurs to acquire opportunity recognition and opportunity exploitation. However, in this study, we find that in the maritime-sector opportunity exploitation is what matters. This is because most maritime policy changes such as the move toward using scanners at the Port of Tema are mostly operational policies. As such, recognizing the opportunity does not matter as it will be obvious to all market participants. However, their ability to react in a timely manner and to develop capabilities that enable them to take advantage of the policy change improves their performance. Also, these small businesses and entrepreneurs need to have a learning orientation. This is because as we noted earlier in this section, the policy initiatives will continue to evolve. Therefore, continuous learning will hand the business, its employees, and entrepreneurs with skills that will be required for future performance through the process of continuous improvement. The study also tested the effects of innovation capability and observed no significant effects. Therefore, we caution small businesses and entrepreneurs in the maritime sector to be wary in choosing innovation over learning or misconstruing learning for innovation. As the cost incurred will not accrue the intended benefits.

5.2. Implications for theory

The findings of this study present some main implications for theory: maritime, dynamic capability, and entrepreneurship research streams. The study makes a contribution to maritime policy studies. Most of the studies in maritime literature have focused less on business-related issues, specifically how local enterprises recognize and exploit opportunities. The emphasis of the most extant work has been on achieving broad-level initiatives aimed at achieving efficiency in vessel throughput. This study contributes toward addressing the lacuna in the maritime business literature stream. Thus, the study shows maritime policy changes serve as environmental jolts that disturb industry equilibrium but offer opportunities for local entrepreneurs and business owners to exploit the opportunities that are presented.

Moreover, the study contributes to the literature on dynamic capability theory. The dynamic capability theory over the years has focused on how organizations can continually reconfigure their resources and capabilities to remain relevant. There is, however, a dearth of the literature on the application of theory in a wide range of sectors owing to the open knowledge that several sectors rely on different innovations and resources to succeed. This study contributes to this stream of the literature by suggesting opportunity exploitation and continuous learning as reconfiguration mechanisms in order for local entrepreneurs and businesses to remain relevant in the face of policy changes in the maritime industry.

Finally, the study extends the contexts within which entrepreneurial activities are undertaken in the maritime industry in Africa. This is a particularly relevant stream to follow because the study findings are at odds with those of Yuen et al. (2019) who observe that both exploration and exploitation have positive effects. This contradiction suggests that new research streams are needed across several contexts to further understand the phenomenon.

6. Conclusion and future research directions

The study set out to explore the effects of the nexus between opportunity recognition, opportunity exploitation, learning orientation, and innovation capability on entrepreneurial performance at the Port of Tema in the face of maritime policy changes. The findings suggest that opportunity exploitation and learning orientation have a direct effect on entrepreneurial performance. The interaction between them also has a positive effect on performance. The study findings contribute to the literature on entrepreneurship and dynamic capability issues in the maritime sector, particularly in the face of disequilibria situations. The findings, although robust, also pave the way for future studies in the area. First, the current study adopts a survey and primary data approach in this study. Future scholarly works can interrogate the questions: under what conditions are opportunity recognition enough in a dynamic business environment? Can capability without exploitation be a depressant? How is this measured and when and how does it have an effect? What are the time dimensions that need to be considered from exploration to exploitation? Also, a quasi-experimental approach can provide another means of testing the robustness of the current findings if authors can get access to the required data sets. Furthermore, the challenge of maritime blindness is Africa wide as noted by previous studies (Ncube and Baker, 2011, 2011). Consequently, the study framework and approach can be tested in other African ports to test the sensitivity of the findings to different institutional and local contexts.

Notes

- 1 <https://www.ghanaports.gov.gh/page/index/10/TBH2322W/Our-History-and-Future>.
- 2 https://ieg.worldbankgroup.org/sites/default/files/Data/reports/Ghana_82728_Trade_InvestmentGateway_PPAR_0.pdf.
- 3 <https://www.myjoyonline.com/role-of-the-unipass-system-in-national-revenue-mobilisation/>.
- 4 https://www.mofep.gov.gh/sites/default/files/reports/economic/ppp_policy.pdf.
- 5 <https://www.ghanaports.gov.gh/page/index/6/SQ5ZKDP8/Port-Highlights->.

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Appendices

Appendix I: Partial and semi-partial correlations of Performance with Independent Variables

Variable	Partial Corr.	Semi-partial Corr.	Partial Corr.^2	Semi partial Corr.^2	Significance Value
Opportunity recognition	-0.038	-0.025	0.001	0.001	0.039
Opportunity Exploitation	0.407	0.300	0.166	0.090	0.000
Innovation Capability	0.052	0.035	0.003	0.001	0.015
Learning Orientation	0.323	0.230	0.104	0.053	0.000

Appendix B: Harman’s one-factor solution

Factor analysis/correlation		Number of obs		= 272
Method: principal factors		Retained factors		= 1
Rotation: (unrotated)		Number of params		= 24
Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	15.021	12.795	0.384	0.384
Factor2	2.225	0.422	0.201	0.585
Factor3	1.803	0.721	0.181	0.768
Factor4	1.082	0.342	0.149	0.917
Factor5	0.741	0.301	0.034	0.951
Factor6	0.439	0.097	0.020	0.971
Factor7	0.343	0.163	0.016	0.986
Factor8	0.180	0.042	0.008	0.995
Factor9	0.137	0.049	0.006	1.001
Factor10	0.088	0.033	0.004	1.005
Factor11	0.055	0.008	0.003	1.007
Factor12	0.047	0.021	0.002	1.009
Factor13	0.027	0.006	0.001	1.011
Factor14	0.021	0.011	0.001	1.012
Factor15	0.010	0.011	0.001	1.012
Factor16	-0.001	0.004	0.000	1.012
Factor17	-0.005	0.005	-0.000	1.012
Factor18	-0.010	0.004	-0.000	1.011
Factor19	-0.014	0.010	-0.001	1.011
Factor20	-0.024	0.008	-0.001	1.010
Factor21	-0.032	0.011	-0.002	1.008
Factor22	-0.043	0.011	-0.002	1.006
Factor23	-0.053	0.028	-0.002	1.004
Factor24	-0.082	.	-0.004	1.000

Factor loadings (pattern matrix) and unique variances.