Charity can still begin at home: Examining the drivers and boundary conditions of Africa-to-Africa outward foreign direct investment (OFDI)

Diana Owusu-Yirenkyi
School of Management
University of Bradford, BD7 1DP, UK
Email: d.owusu-yirenkyi@bradford.ac.uk
ORCID: 0000-0002-5046-671X

Portia M. Akolgo
Loughborough Business School
Loughborough University, LE11 3TU
Email: p.m.akolgo@lboro.ac.uk

Gilbert Zana Naab
School of Strategy and Leadership,
Coventry University, CV1 5DL.
Email: ad5061@coventry.ac.uk

Francis Donbesuur
School of Business
University of Leicester, LE2 1RQ UK.
Email: f.donbesuur@leicester.ac.uk

Albert Danso*
Leicester Castle School of Business
De Monfort University, LE1 9BH
Email: albert.danso@dmu.ac.uk

*Submitting author
Abstract:
Recent studies on ‘Africa Rising’ and ‘Africa-to-Africa Internationalization’ have propelled conversations on how African Small and Medium-Sized Enterprises (SMEs) can continue to internationalize within African countries. From the tenets of the institutional theory and the dynamic capabilities perspectives, this study proposes and tests a framework of how and when dysfunctional competition drives SMEs' outward foreign direct investments within African countries. Analysis of a survey data from 196 Ghanaian SMEs operating across the African continent indicates that cross-border open innovation mediates the relationship between dysfunctional competition and SMEs' intra-Africa OFDI activities. Further analysis revealed that SMEs' strategic agility plays a double-edged sword moderating role in enhancing the effects of dysfunctional competitions and cross-border open innovation on intra-Africa OFDI. These findings have significant implications for the international business and finance literature as well as the management and growth of African SMEs.

Key words: Outward foreign direct investments; open innovation; strategic agility; Africa. Ghana

1.0 Introduction
Over the years, small and medium-sized enterprises (SMEs) from developing economies have been expanding into international markets mainly due to the pressures of competitive global environment as well as the conditions of home market institutions and frameworks. For most firms, such expansions help them to explore and exploit growth opportunities in foreign markets (Dai et al., 2014). For example, recent studies suggest a rapid internationalization activity of African SMEs both within and outside of the African continent (Zahoor et al., 2023b; Boso et al., 2019). A notable and recent internationalization trajectory among developing (and emerging economy) SMEs is the idea of outward foreign direct investments (OFDI) – which describes domestic firms' activities – including equity investments, investing in projects, establishing subsidiaries in foreign markets (Boso et al., 2016; Qiao et al., 2020; Xia et al., 2014). With the significant contributions of African SMEs to employment and GDP growth, it is imperative for current research to explore one of their (African SMEs) internationalization trajectories – OFDI – and how this phenomenon can be enhanced. Thus, while there are efforts
to explain the issues surrounding OFDI of emerging economy SMEs (e.g., Qiao et al., 2020; Deng and Zhang, 2018; Buccieri et al., 2020), the extant literature is limited on what may account for intra-African OFDI among developing economy SMEs. Recent conversations regarding Africa-to-Africa internationalization (e.g., Boso et al., 2016; Amankwah-Amoah et al., 2018) suggest OFDI as a potential growth path to developing economy SMEs, yet it is not clear what may propel SMEs to engage in outward investment in another African country(ies). Put differently, while much attention has focused on OFDI in emerging economies (such as BRICS countries), little is known in the international business literature about the potential drivers and boundary conditions of African SMEs’ OFDI – herein referred to as Africa-to-Africa OFDI or intra-African FDI (Adeleye et al., 2015; Boso et al., 2016). Though intra-African FDI may seem like a relatively small phenomenon (compared to other FDI classifications), its significance to the growth of African economies calls for urgent academic discussion. Thus, the spillovers that emerge from OFDI within African countries cannot be overemphasized – some of which include knowledge transfers, partnership, GDP and employment growth. For example, recent study indicates that African FDI (investment from African investors) leads to higher average employment growth and collaborations in areas such as R&D (Gold et al., 2017). Thus, the idea of intra-African FDI can ultimately lead to regional collaboration and innovation among African SMEs. To this effect, this study explores the processes and conditions under which SMEs operating within Africa can engage in OFDI. Borrowing from the tenets of the institutional theory (North, 1990; Peng et al., 2008), we argue that dysfunctional competition in home markets may drive SMEs to engage in OFDI in other African countries. Dysfunctional competition describes competitive behaviours – such as hostile prices, copyright violation and patent infringements – that are unhealthy, opportunistic, and sometimes unlawful, (Li and Atuahene-Gima, 2001; Liu and Atuahene-Gima, 2018). Dysfunctional competition is characterized by improper functioning of acceptable competitive behaviours, limited enforcement of contractual obligations, copy right violations and infringements (Li and Atuahene-Gima, 2001; Li and Zhang, 2007). These features make local markets unattractive, hence propel SMEs to engage in OFDI. Specifically, the presence of dysfunctional competition can compel firms to become more proactive and focused on growth and diversification strategies (Xia et al., 2014) outside of their domestic market. However, dysfunctional competition may have negative consequences. For example, dysfunctional competition limits the protection of copyrights, hence may be detrimental to firms’ innovation and other performance outcomes (Jean et al., 2014; Li and Atuahene-Gima, 2001). Due to this potential paradoxical role of dysfunctional competition, we contend that it effects on SMEs’
OFDI would be more pronounced through and under certain firm strategic behaviours. Specifically, from the dynamic capabilities' perspective (Teece, 2007, 2018), we theorize that, the effect of dysfunctional competition on SMEs' OFDI will be channelled through the focal firms' cross-border openness (open innovation) activities and conditioned on how agile they are (strategic agility) in the international market. We conceptualize cross-border open innovation as the extent to which firms engage with external partners (e.g., customers and competitors) within the African sub-region in various forms of innovation activities including knowledge sharing, technology sharing, and R&D (see, Parida et al., 2012). Thus, cross-border open innovation is a deliberate strategic behavior that can be influenced by institutional pressure – such as those posed by dysfunctional competition. For example, the perceived negative effect of dysfunctional competition can drive firms to search and scan their external environment (i.e., foreign market) for new information, knowledge, and collaboration from cross-border partners. While the traditional notion of innovation can be classified at different levels and forms – with higher levels of innovation – such as radical and technological innovation occurring in developed countries (see Lee et al., 2010), open innovation activities such as knowledge sharing, collaborations and partnership are common, very well describes and fits developing economy contexts and can serve as significant resources that SMEs can leverage on while investing in international markets. Again, the nature of open innovation requires collaboration with other firms – a phenomenon that SMEs have the capacity and flexibility to engage in. With these reasoning for open innovation, we anticipate that such openness (i.e., cross-border open innovation) can be a precursor for SMEs to expand and set up more subsidiaries (OFDI) in these international markets. We further extend our mediation arguments by examining the contingency effect of the SMEs' strategic agility. Within highly dynamic, fragile, and uncertain global business environment, being agile has become a significant capability for firms' competitiveness. The characteristics of SMEs make them susceptible to being agile in foreign market, which may consequently enhance their OFDI activities, particularly in the presence of dysfunctional institutions. We test our theses using a sample of 196 Ghanaian SMEs that have at least one subsidiary within any of the 54 African countries. We find that cross-border open innovation of SMEs mediates the relationship between dysfunctional competition and OFDI. Further to this, we find a boundary condition effect – that strategic agility enhances the effect of dysfunctional competition on OFDI on the one hand; and the effect of cross-border open innovation on OFDI on the other hand. This moderating effects, capture the double-edged nature of strategic agility in enhancing the dysfunctional – cross-border open innovation – OFDI relationships among internationalizing
SMEs. With these findings, we make a number of contributions to the literature of OFDI and the growth of internationalizing SMEs within developing economies. First, we provide a unique perspective in exploring the antecedents of OFDI for developing economy SMEs. Thus, based on the institutional theory (North, 1990; Peng et al., 2008), we highlight the significance of dysfunctional competition in driving SMEs’ OFDI. We further extend this contribution by demonstrating that, the effect of dysfunctional competition on OFDI is more pronounced when it is channelled through cross-border open innovation. We particularly broadened the current understanding of the consequences of dysfunctional institutions by showing that it can have a more positive outcome, such as OFDI when used as a leverage to engage in cross-border open innovation activities. Second, we highlight the importance of SMEs possessing and utilizing strategic agility in international markets, especially in times of global uncertainties. Specifically, similar to recent studies on the concept of strategic agility (e.g., Adomako et al., 2022), we show the dynamic nature of strategic agility in enhancing the relationships among dysfunctional competition, OFDI and cross-border open innovation. Overall, we add to recent research that seeks to interact institutions and firm behaviours to achieve certain performance outcomes (e.g., Qiao et al., 2020). Third, by using Ghana as a model of a developing economy, we make a unique contextual contribution to the literature on OFDI. The OFDI literature often focuses on SMEs that operate within emerging economies such as those in China (e.g., Qiao et al., 2020; Deng and Zhang, 2018; Xia et al., 2014) and other BRICS nations. However, developing economies have their own unique institutional arrangements, and have often been the recipient of foreign direct investment (FDI) (Boso et al., 2016; Amankwah-Amoah et al., 2018). Adding to recent contextual research on Africa-to-Africa internationalization (e.g., Nachum et al., 2022; Amankwah-Amoah et al., 2018), our findings demonstrate how and when dysfunctional institutions can propel developing economy SMEs to engage in OFDI within Africa.

2. Literature and hypotheses

2.1. The tenets of the institutional theory

The institutional theory (IT) provides a framework for understanding the role of regulatory, normative, and cognitive-cultural structures in shaping organizational behavior and strategy (North and Institutions, 1990). These pillars, representing laws, societal norms, and shared beliefs respectively, create a framework that influences the dynamics of competition and foreign investments in the international business environment (Farrell, 2018). Accordingly,
institutions typify “the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction” (North and Institutions, 1990, p.2). These frameworks can be both formal, like laws and regulations, and informal, such as social customs and accepted behaviours. Indeed, IT proposes that the actions of multinational enterprises (MNEs) are shaped by institutional elements, categorised as regulatory, normative, and cognitive factors (Scott, 1995). The works of DiMaggio and Powell (1983) describe these as the three kinds of institutional isomorphism—coercive, normative, and mimetic—that direct how firms behave. On the individual level, the practices and preferences of managers are shaped by their ingrained habits, social norms, and unconscious adherence to traditions, which in turn influence the activities of the firms they manage (Berger et al., 2002). At the organizational level, the collective values, company culture, and internal political dynamics help establish the firm’s institutionalized patterns and behaviours. Meanwhile, at the level of inter-firm interactions, pressures for uniformity arise from industry standards, governmental regulations, and societal expectations, such as those related to workplace safety, product quality, or environmental responsibility (DiMaggio and Powell, 1983). Additionally, IT suggests that companies operate within societal frameworks comprising established norms, values, and assumptions that delineate what is deemed acceptable and appropriate economic conduct (Scott, 1995). Therefore, the strategic choices of firms are influenced not just by the limitations outlined in neoclassical models, such as informational, technological, and financial constraints, but also by socially constructed barriers like traditions, societal norms, and habits. Such institutional structures can also influence investment and location decisions in the realm of international business (Fan et al., 2023). We argue that such institutional dynamics evident in coercive, normative, and mimetic isomorphism explain the nature and pattern of OFDI in the context of Africa where institutions are still at their nascent stages. Thus, home country institutions affect the actions and competitiveness of firms by shaping firm strategies, operational practices, and local perceptions of firms (Chacar et al., 2010). While previous research demonstrates how favourable home-country institutions can generate capabilities and shape strategies that firms can leverage when investing abroad (Chacar et al., 2010), unfavorable institutional arrangements and characteristics can also propel firms to invest to internationalize (Adomako et al., 2019). Consequently, institutions play a pivotal role in influencing the strategic direction and resource allocation of firms (Xie and Yin, 2023; Wan, 2005), such that as an escape mechanism, weak institutional structures can make SMEs invest in foreign markets. Specifically, to this study, and as per previous studies (e.g., Li and Atuahene-Gima, 2001; Boso et al., 2019) we observe perceived dysfunctional competition in
home country as one of the consequences of poor institutional frameworks that might cause SMEs to invest in other markets other than their own domestic market.

2.2. Dysfunctional competition and outward foreign direct investment (OFDI)

Dysfunctional competition refers to unfair, opportunistic, imitation, and unlawful competitive activities within a business environment (Li and Atuahene-Gima, 2001). Within the context of this study, we adopt previous definition of dysfunctional competition “as managerial perceptions of impaired competitive behaviours, difficulties in avoiding patent and copyright violations, and inefficiencies in monitoring and enforcing contractual obligations in export markets” (Boso et al., 2019, p. 138). There is a schism in the literature on how dysfunctional competition relates to strategic and performance outcomes. Specifically, the extant literature underscores the paradoxical role of dysfunction competition to firm success (see Cai et al., 2017) – even though its effect on developing economy SMEs OFDI is relatively under explored. From the institutional theory, we are of the view that intense dysfunctional competition within a country can increase OFDI from that country to other countries (Witt and Lewin, 2007). Specifically, within the context of our study, we note that such dysfunction may characterize host countries – however, through the mechanism of institutional borrowing (Pinkham and Peng, 2017) firms will be able to navigate these failures while investing in host countries. First, developing economy SMEs can pursue OFDI as an escape response to perceived incongruence between firm needs and the institutional bottlenecks and conditions in the home country. SMEs may use an avoidance strategy to escape the pressures from dysfunctional institutions by investing in foreign markets through subsidiaries and other projects (Xia et al., 2014). Thus, dysfunctional competition may create an environment where firms find it difficult to grow their businesses domestically, leading them to explore opportunities in other countries where they can expand their customer base and increase profitability (Le and Zak, 2006). For instance, if domestic competitors engage in predatory pricing or engage in anti-competitive practices, it may be difficult for new entrants to compete on a level playing field. This may lead some firms to seek opportunities in other countries where the business environment is more favourable (Dunning and Narula, 1996; Caves, 1996). Second, the harsh conditions of dysfunctional competition may propel SMEs use OFDI as diversification approach to internationalization (Xia et al., 2014). Specifically, SMEs may seek to diversify their operations to reduce their exposure to risks associated with a dysfunctional competitive within their domestic market. By investing in foreign countries, SMEs are able to
reduce their reliance on a single market and spread their risks across different markets (Uhlenbruck et al., 2006). To ameliorate and prevent exposure to institutional weaknesses that may appear to contribute to dysfunctional competition, SMEs will avoid highly dysfunctional locations or reduce the equity base of their current market (Rodriguez et al., 2005; Sartor and Beamish, 2018) by investing in other countries – as illustrated by OFDI. Thus, even though the characteristics of dysfunctional institutions and institutional failure may be present in the host countries as well, firms can leverage on institutional borrowing and other non-market strategies (Boso et al., 2023; Pinkham and Peng, 2017) and invest in these host countries. In summary, as firms' behaviours and strategies are driven by the characteristics of external institutions (Qiao et al., 2020), we contend that unlawful competitive practices, including counterfeiting and ineffective market competition – that characterize domestic markets – would propel developing economy SMEs to engage in OFDI into other regions in order to achieve competitive advantage and growth. To this end, we formally state:

**H1.** Dysfunctional competition positively relates to OFDI within African countries.

### 2.3. Cross-border open innovation, dysfunctional competition and OFDI

Open innovation is a paradigm that emphasizes the importance of collaboration and knowledge sharing across organizational boundaries to foster innovation and competitiveness (Chesbrough, 2006). It refers to integrating external sources of knowledge, technology, and expertise into the innovation process and sharing internal knowledge and expertise with external partners (Parida et al., 2012). To this end, we conceptualize cross-border open innovation as sharing and exchange of knowledge, technology, and expertise between partners (i.e., focal domestic SMEs and their partners in foreign markets) across borders to promote innovation and competitiveness. This can take various forms, such as joint ventures, licensing agreements, and research collaborations. By engaging in cross-border, in such cross-border open innovation, firms may be able to overcome some of the challenges associated with dysfunctional competition, such as limited access to resources and market dominance by incumbent players. Thus, as SMEs collaborate and partner with different cross-border networks, they are able to acquire some expertise that can compensate for the inadequate internal resources (Christensen et al., 2005; Parida et al., 2012) that may result from dysfunctional competitions. Relatedly, the tenets of institutional theory make us understand that institutional arrangements can shape firms’ strategies (Peng et al., 2008) that can ultimately buffer the negative effects of poor institutions. Simply put, dysfunctional competition can make
firms focus on proactive strategies as well as drive innovation strategies (Cai et al., 2017; Du et al., 2016). Thus, we argue that when competition becomes increasingly dysfunctional in the domestic market, SMEs will innovate their strategies by partnering and collaborating with foreign market actors in areas such as market knowledge and technology. On the other hand, cross-border open innovation can influence SMEs’ decision to engage in OFDI. SMEs that engage in high levels of cross-border open innovation are more likely to undertake OFDI, as they have potent knowledge-seeking capabilities, including knowledge of new markets, and can more effectively leverage their knowledge assets to exploit flows in foreign markets (Liu et al., 2016; Yang et al., 2022; Parida et al., 2012). Also, cross-border open innovation may help to mitigate the risks associated with OFDI. When firms engage in collaborations with local partners in foreign markets, they may be able to navigate the local business environment better and overcome the challenges posed by cultural, economic, and institutional differences. This could increase the likelihood of success for OFDI and make it a more viable option for firms operating in highly competitive domestic markets. In sum, we argue that cross-border open innovation may mediate the relationship between dysfunctional competition and OFDI by providing SMEs with new opportunities for growth and diversification. By accessing new knowledge, technology, and expertise through cross-border collaborations, SMEs may be able to overcome the barriers to growth and expansion posed by dysfunctional competition in their home country. This, in turn, increases the likelihood of investing in other countries through OFDI (Liu et al., 2016). To this end, when firms operating in dysfunctional competitive markets imbue an open innovation culture – thus, collaborating in R&D, sharing ideas and knowledge, and fostering strategic partnerships across borders, they will most likely pursue OFDI. Therefore, we hypothesise that:

**H2. Cross-border open innovation mediates the relationship between dysfunctional competition and OFDI.**

2.4. The contingency effect of strategic agility

In this study, we conceptualize SMEs' strategic agility in three forms (see Doz and Kosonen, 2010; Nyamrunda and Freeman, 2021); (1) **strategic sensitivity**, which requires SMEs to proactively sense and anticipate changes in their external markets; (2) **collective commitment**, which describes top management capability to form a team and collaborate for efficient decision making; and (3) **resource fluidity**, which is SMEs' ability to be flexible in terms of resource reallocation and reconfigurations. Our conceptualization is consistent with recent
studies (e.g., Zahoor et al., 2023a; Nyamrunda and Freeman, 2021; Junni et al., 2015) as we see strategic agility as a higher order dynamic capabilities that enable SMEs to sense and seize external opportunities and reconfiguring resources to meet the changing behavior of customers and competitors (Teece, 2007; Junni et al., 2015). This broad understanding of strategic agility as a meta-capability enables SMEs to be equipped and agile in all areas of decision making. For example, while strategic sensitivity can help SMEs to become aware of new opportunities in host markets, resource fluidity can make them to quickly respond to any changes in the host markets. In this regard and following recent studies on strategic agility in international markets (e.g., Hagen et al., 2019; Adomako et al., 2022), we consider strategic agility as a crucial firm specific and inimitable dynamic capabilities that aid SMEs to reduce risk exposures, counterbalances the challenges internationalizing SMEs face in international market and ultimately helps them to remain competitive in the face of uncertainties and adverse external market conditions. We contend that the presence of firm-level strategic agility can play a double-edged sword by enhancing the relationships, (1) between dysfunctional competition and OFDI and (2) between cross-border open innovation and OFDI. Strategic agility refers to a “a thoughtful and purposive interplay” of firms' capabilities (Doz and Kosonen, 2008, 2010). Since strategic agility is very vital for firms to navigate the complexities and dynamisms of international markets (Adomako et al., 2022), we anticipate that SMEs' that are agile would be able to exploit maximum benefits from their OFDI activities during intense dysfunctional competitions as well as when they engage in cross-border open innovation. First, in times of increasing dysfunctional competitions – where growth strategies within the local market is improbable, strategically agile SMEs may be better positioned to identify and exploit opportunities in foreign markets. By being nimble and responsive to changing market conditions, firms may be able to seize opportunities for growth and expansion in foreign markets, which could enhance the relationship between dysfunctional competition and OFDI (Zhou et al., 2019). For example, highly agile SMEs can easily alter and reconfigure their capabilities to counterbalance the effects of adverse changes in the market (such as unacceptable competitive behaviours, patent and copyright violations, and lack of enforcement of contractual obligations). Thus, the interaction of such agile behaviours with the characteristics of dysfunction markets will enhance SMEs OFDI. Strategic agility can also help firms to mitigate the risks that may be associated with OFDI, as SMEs begin to enter international markets. While, expanding into international markets, SMEs may have to deal with the potential negative effects of dysfunctional competition (Jean et al., 2014; Li and Atuahene- Gima, 2001) as well as the liability of newness in foreign markets (Rabbiosi and
SMEs that are agile and flexible can leverage this capability to enhance the existing positive or mitigate the potential negative effect that dysfunctional competition may have on SMEs OFDI. Relatedly, through the notion of resource fluidity (Doz and Kosonen, 2010; Nyamrunda and Freeman, 2021), SMEs that are agile can manage their resources effectively when dysfunctional competition is high. Thus, high resource fluidity capability, coupled with the existence of dysfunctional competition will propel SMEs to engage in high levels of new international opportunity exploitation in the form of OFDI. The second role of strategic agility is its conditioning effect on the relationship between cross-border open innovation and SMEs’ OFDI. Specifically, we contend that SMEs strategic agility can enhance the relationship between cross-border open innovation and OFDI, due to the following reasons: When SMEs are strategically agile and flexible, they are able to better capitalise on the opportunities and resources presented by cross-border open innovation, such as accessing new knowledge, technology, collaboration, and expertise from their foreign partners. By quickly integrating this new knowledge into their operations in foreign markets, SMEs can gain competitive advantage and increase their attractiveness for OFDI (Hoonsopon and Puriwat, 2019; Junni et al., 2015). Also, being strategically agile can enable SMEs to better manage the risks that may characterize cross-border open innovation activities, and by extension its OFDI benefits. Specifically, cross-border collaboration and networks comes with different cultural and institutional integration that maybe costly to SMEs (e.g., Puthusserry et al., 2021; Hutzschenreuter et al., 2014), as they may be characterized by host country’s economic and political risk. However, by engaging in high levels of strategically agile behaviours such as collective commitment, strategic sensitivity and resource fluidity, SMEs can navigate this psychic distance issues, reduce any risk that may be associated with cross-border collaborations and foreign investments, this in turn can increase their OFDI activities. Relatedly, previous studies have emphasized on the need for SMEs to be cautious of their overreliance on foreign knowledge (i.e., through cross-border open innovation), as that may stifle domestic innovation capabilities (e.g., Yang et al., 2022). This means that open innovation may be counterproductive or possess some risk factors to some extent (Lichtenthaler, 2015). When SMEs demonstrate high agility in international activities and decision-making processes, they are able to collaborate effectively with foreign partners to maximize OFDI activities or mitigate any potential negative effects that an over reliance on cross-border open innovation may bring. We believe that in such conditions as discussed above, strategic agility becomes more prominent in maximizing the relationship between cross-border open innovation and OFDI. In sum, SMEs with high levels of strategic agility can better respond to changing market
conditions, including dysfunctional competitions as well as adapt to their cross-border open innovation activities in order to exploit growth opportunities, including those related to OFDI. Accordingly, we hypothesize that:

**H3a. In the presence of firm level strategic agility, the relationship between dysfunctional competition and OFDI is enhanced.**

**H3b. In the presence of firm level strategic agility, the relationship between cross-border open innovation and OFDI is enhanced.** These hypotheses statements are summarised by Fig. 1.

3. Methods

3.1. Sample and data collection

The business landscape of Ghana is characterized by activities of SMEs which contribute over 70% of the country's GDP and employment rate. Recent data suggests a huge surge in internationalization activities of these SMEs, in scale, speed and scope in neighbouring African countries (Boso et al., 2016; Boso et al., 2019). For example, the ECOWAS region alone accounted for about 34.59% of non-traditional export destinations in 2022 (Ghana Export Promotion Authority, 2022). In addition to this rate of internationalization by Ghanaian SMEs, the African continent has experienced regional integration in many areas including several regional trade agreements – such as the African Continental Free Trade – which among other things, presents opportunities for African SMEs to engage in cross-border activities. Despite these positives, Ghana's institutional environment, paradoxically, is characterized by weaknesses, regulatory and legal challenges as well as uncertainties (see Donbesuur et al., 2020). These institutional failures – even though may affect firms negatively – propel SMEs to seek internationalization as an escape route. Accordingly, we use a sample of internationalized ventures – headquartered in Ghana – and engages in regional level internationalization (Africa to Africa internationalization). Using the Ghana Company Register and the Federation of Associations of Ghanaian Exporters, we selected 908 ventures that meet the following criteria; (1) exporting firms, (2) firms that have at least one subsidiary in any of the African countries (3) a minimum of three years' business operation experience, (3) a minimum of three years' internationalization or having a foreign subsidiary (in this case within another African country), and (4) firms with complete contact information of the owners, managers and/or CEOs and
international business managers. We contacted these sampled firms through emails and phone calls to solicit their participation in the survey – of which 611 firms agreed to take part. Subsequently, we developed a survey questionnaire to be administered to these firms through a data collection agency in Ghana. To help reduce the effect of common method bias, we used a multi-source longitudinal approach in surveying our sample. Specifically, the data was collected at two-time period; with multiple respondents including owners, managers and/or CEOs and international business managers. We assessed the respondents' quality and suitability to answer the survey questions based on (1) their involvement in firm's strategic decision-making processes, (2) their knowledge about firms' international operations, and (3) their confidence level in answering the survey questions (see Boso et al., 2017). In the end, the data collection agency returned 196 (i.e., 32 % response rate). The sample firms had an average age of 13 years and an average employee size of 39. In terms of international exposure, the sample had an average of 3 foreign subsidiaries (OFDI project), while the average years of international experience was 6 years.

3.2. Measures
We measured the study's variables by adapting existing scales in the extant literature. Specifically, we used a seven-point likert scale to measure the multi-item variables – with some of the items being reworded to match with the study context as well as the comprehension of the respondents. Accordingly, dysfunctional competition is measured with four items adapted from Li and Atuahene-Gima (2001) and Boso et al. (2019). Sample items include: “… unlawful competitive practices such as illegal copying of new product and designs in the market”. We measure cross-border open innovation with four items from Parida et al. (2012). The items capture the extent to which the sampled firms explore and/or exploit knowledge and innovation activities within and among countries where they export or have subsidiaries. Some of the items include “we regularly exchange knowledge with our cross-border partners”. We operationalized strategic agility along three first-order dimensions of (1) strategic sensitivity, (2) collective commitment, and (3) resource fluidity. Consequently, we adapted a nine-item three-factor scale from Hock et al. (2016) to measure strategic agility of the sampled. Following on from previous studies (e.g., Xia et al., 2014; Qiao et al., 2020) we measured firm-level OFDI, as the number of foreign subsidiaries (OFDI projects) established by a Ghanaian firm within African countries in a given year. Following previous studies on the determinants of OFDI, (e.g., Xia et al., 2014; Qiao et al., 2020) we controlled for environmental dynamism, financial performance, firm size, firm age, international experience, and the existence of an
R&D unit in each sampled firm. We used the natural logarithm of full-time employees and number of years in operation to measure firm size and age, respectively.

-----Insert Table 1 about here------

International experience was measured as the number of years since each firm has had their first subsidiary in an overseas market, while the existence of an R&D unit in each firm was measured with Yes (1) and No (0) response from each respondent. To measure environmental dynamism, we adapted three (3) items from the external environment measurement scales from Jaworski and Kohli (1993). Finally, financial performance was measured by each firm's perception of its (1) sales growth, (2) profit growth, (3) market share and (4) overall performance (e.g., Drnevich and Kriauciunas, 2011; Wiklund and Shepherd, 2003).

4. Analysis

4.1. Measurement model

We examined the validity and reliability of the multi-item variables through confirmatory factor analysis (CFA). The CFA estimation provided the following fit indices ($\chi^2/df = 1.22$, RMSEA = 0.04, CFI = 0.97, NNFI = 0.94; and SRMR = 0.05), with the standardized factor loadings for all items being significant ($p < 0.001$). Further tests of constructs' validity and reliability indicate (i) Composite Reliability (CR) scores are greater than or equal 0.70; (ii) Average Variance Extracted (AVEs) are greater than or equal the 0.50 recommended threshold, and (ii) the square root of the AVEs (shown in bold at the diagonals of Table 1) are greater than the squared multiple correlation coefficient of each construct. Based on suggested CFA cut off points and thresholds (e.g., Hair et al., 2017; Fornell and Larcker, 1981), we can conclude that the measurement items and the overall measurement model is valid and reliable.

4.2. Assessment of common method bias

In spite of using the multiple respondents' approach during the survey, we were still concerned about issues of common method bias due to the cross-sectional nature of the study. Accordingly, we followed two statistical procedures to rule out the likelihood of common method bias affecting our findings. First, we followed the basic approach of an exploratory
factor analysis (EFA) using the Harman's one-factor test (see Podsakoff et al., 2003). The EFA produced a multiple factor solution as expected, with none of the factors accounting for the majority of the covariance. Second, we used the confirmatory factor analysis (CFA) – as an ex-post statistical approach, to estimate three competing CFAs (Chang et al., 2010; Podsakoff et al., 2003). The first CFA estimated a model where all the measurement items were loaded on a single latent factor ($\chi^2/df = 7.84$, RMSEA = 0.14, CFI = 0.23, NNFI = 0.20; and SRMR = 0.13). The second CFA model had all the items loaded on their respective latent factors ($\chi^2/df = 1.22$, RMSEA = 0.04, CFI = 0.97, NNFI = 0.94; and SRMR = 0.05), while the third model estimated both model 1 and model 2 together ($\chi^2/df = 1.20$, RMSEA = 0.04, CFI = 0.98, NNFI = 0.95; and SRMR = 0.05). A comparison of the fitness indices of these three CFA models as well as the Harman's one factor test help us to rule out concerns of common method bias affecting the study results.

4.3. Structural model estimation

We test our hypotheses using two estimation procedures. Specifically, we used structural equation modelling (SEM) to test all direct and moderating effect relationships, and PROCESS macro (Model 4) to test our mediation/indirect effect relationship. For the SEM analysis, we generated single indictors for each independent variable by computing mean scores from the multiple items. However, the full information approach – using individual items of the latent constructs for model estimation instead of mean values – was adopted for the relevant dependent variable (cross-border open innovation). To avoid multicollinearity issues, we mean-centered the independent and moderating variables before computing their interaction terms. In all, two interaction terms were created: (1) dysfunctional competition $\times$ strategic agility and (2) cross-border open innovation $\times$ strategic agility. Table 3 indicates the SEM results such as standardized estimates, T-values and relevant model fit indices. To test the direct and moderating effects, we estimated five models. Model 1 has cross-border open innovation as the dependent variable, while Models 2–5 have OFDI as the dependent variable. For the mediation effect analysis, we used PROCESS macro (Model 4) to estimate the indirect effect. Table 4 reports details of our mediation analysis including 95% confidence intervals (both upper and lower-level intervals).

4.4. Findings
The SEM results from Table 3 indicate that dysfunctional competition positively relates to OFDI within African countries ($\beta = 0.21, p < 0.01$), which confirms H1. Next, we find that dysfunctional competition positively relates to cross-border open innovation ($\beta = 0.45, p < 0.001$) while, the latter also has a positive relationship with OFDI within African countries ($\beta = 0.47, p < 0.001$) – which partially supports H2. To further confirm H2, the PROCESS macro results (Table 4) show that there is an indirect relationship between dysfunctional competition and OFDI within African countries, through cross-border open innovation (indirect effect = 0.21, 95% CI = 0.08–0.35). Lastly, we find support for both H3a and H3b that firms’ strategic agility enhances the positive relationships between dysfunctional competition and OFDI ($\beta = 0.22, p < 0.001$) on the one hand, and between cross-border open innovation and OFDI ($\beta = 0.18, p < 0.01$), on the other hand. To help explain the interaction effect of strategic agility on the relationships between dysfunctional competition and OFDI and between cross-border open innovation and OFDI, we plotted two-way interaction graphs. As shown in Figs. 2 and 3, firms OFDI activities are high within the sampled firms when strategic agility interacts with both dysfunctional competition and cross border open innovation.

---Insert Table 3 and 4 about here------

---Insert figures 2 and 3 about here------

4.5. Robustness check

To check the robustness of the findings, we did further analysis by using international sales data that are available for only 108 out of the 196 SMEs initially sampled. Even though, international sales figure is not same as number of subsidiaries established, it is the closet to determining the presence of an SME in an international market. Results of the further analysis shows that dysfunctional competition is positively related to international sales ($\beta=0.26, p<0.01$), while cross-border open innovation is also positively related to international sales ($\beta=0.35, p<0.01$). Next, while strategic agility moderates the relationship between cross-border open innovation and international sales($\beta=0.24, p<0.01$), we found no evidence that its moderating effect on the relationship between dysfunctional competition and international sales ($\beta=0.12, p>0.05$). Thus, using international sales as a proxy for OFDI (albeit for 55% of the sample), we find confirmation for H1, H2, and H3b but not for H3a.
5. Discussions, implications, and study limitations

Despite recent conversations regarding Africa-to-Africa internationalization (or *Africa-to-Africa OFDI* or *intra-African FDI*) (Adeleye et al., 2015; Boso et al., 2016) little is known in the international business literature about the potential drivers and boundary conditions of African SMEs' OFDI. Following on from extant studies that point to the significance of OFDI (e.g., Qiao et al., 2020; Deng and Zhang, 2018; Buccieri et al., 2020) and its potential benefits to the growth of developing economy SMEs (e.g., Boso et al., 2016; Amankwah-Amoah et al., 2018), this study explores the antecedents and boundary conditions of SMEs' outward foreign direct investment (OFDI) within Africa, also known as Africa to Africa OFDI. Specifically, from the tenets of the institutional theory and the dynamic capabilities' perspective, we examine the mediating role of cross-border open innovation on the relationship between dysfunctional competition and OFDI, on the one hand, and how this indirect relationship is moderated by SMEs' strategic agility. Using survey data from 196 internationalizing SMEs headquartered in Ghana, we find that the relationship between dysfunctional competition and SMEs' OFDI is mediated by the sampled firm's cross-border open innovation. Further analysis reveals that SME's strategic agility plays a double-edged sword role by enhancing the relationships, (1) between dysfunctional competition and OFDI and (2) between cross-border open innovation and OFDI. These findings present significant research implications to the international business literature as well as practical implications for the management and growth of African SMEs.

5.1. Research implications

First, the study provides an insight into the unique role of dysfunctional competition in driving SME's OFDI. The extant literature on dysfunctional institutions demonstrates the paradoxical role of dysfunctional competition and institutions in driving and/or enhancing firms' behaviours and outcomes. For example, recent studies have shown that dysfunctional competition can have both negative and positive influences on firms' international performance outcomes (e.g., Boso et al., 2019; Boso et al., 2023; Donbesuur et al., 2020). We extend this body of knowledge by showing that the existence of dysfunctional competition in home country can drive SMEs OFDI. Relatively, we add to recent studies that have been exploring the antecedents of SMEs' OFDI (Qiao et al., 2020; Cui et al., 2022), but rather in a different and novel way – of highlighting the effects of both institutional (dysfunctional competition) and firm level drivers (SMEs' strategic agility) on intra-Africa OFDI – a phenomenon that has rarely received attention in the extant literature. Second, we add to the institutional escape perspective of OFDI...
(Li et al., 2017) by providing a nuanced understanding of how developing SMEs translate the effect of dysfunctional competition (e.g., weak institutions) into OFDI. Thus, we have shown that SMEs' cross-border open innovation, in part, accounts for the direct effect of dysfunctional competition on SMEs OFDI – as SMEs can leverage dysfunctional competitions to develop new resources (through cross-border open innovation) from other markets to drive OFDI (Wu et al., 2016). In effect, we contribute to recent discussion on the role of open innovation in firms' performance outcomes (e.g., Bogers et al., 2019; Singh et al., 2021) by highlighting its possible antecedents – dysfunctional competition and its benefits to SMEs that engage in OFDI. Third, we make a contingency effect contribution by highlighting the simultaneous role of strategic agility in shaping the effects of both dysfunctional competition and cross-border open innovation on SMEs' OFDI. Our findings extend recent knowledge on the role of SMEs strategic agility in driving performance outcomes in both domestic and international markets (e.g., Adomako et al., 2022). By demonstrating the double-edged sword moderating role played by strategic agility in enhancing SMEs' OFDI, we add to recent conversation that have emphasized further exploration of the potential role of strategic agility in driving firms' competitive advantage of SMEs (Gomes et al., 2020; Xing et al., 2020) and specifically firms' internationalization process (Christofi et al., 2021). Lastly, we make a unique contextual contribution to the international business literature by using Ghanaian SMEs as a model of developing economies. The OFDI literature typically, focuses on SMEs that operate within emerging economies such as those in China and other BRIC countries (e.g., Cui et al., 2022; Qiao et al., 2020; Deng and Zhang, 2018; Xia et al., 2014). However, African economies and firms have their own distinctive institutional arrangements and puzzles (Nachum et al., 2022), and have mostly been at the receiving end of foreign direct investment (FDI) (Boso et al., 2016; Amankwah-Amoah et al., 2018). Thus, with these findings, we add to recent contextual work on Africa rising (e.g., Nachum et al., 2022; Amankwah-Amoah et al., 2018) to show how institutional frameworks and firm level conditions interplay to enhance Africa-to-Africa OFDI. Overall, our findings capture how institutional arrangements (i.e., dysfunctional competition) can cause firms to engage in behaviours and conducts (cross-border open innovation and strategic agility) that are conducive to driving certain performance outcomes (SMEs OFDI activities).

5.2. Practical implications

The findings have significant managerial implications for developing economy SMEs that internationalize through intra-Africa FDI. First, while we acknowledge the complexity and
adverse effects of dysfunctional competitions in domestic markets, same characteristics can serve as a catalyst for SMEs that seek to engage in OFDI activities. Thus, though dysfunctional competitions such as detrimental to firm success in the domestic markets, top management team of SMEs can turn these infractions or threats into opportunities by investing and establishing subsidiaries within other African markets. Second, the findings have underscored the importance of open innovation activities with foreign market actors as a way of translating those perceived institutional threats into foreign success. Thus, SMEs can leverage local institutional constraints to generate new resources (by way of cross-border open innovation) from other markets to engage in OFDI activities. This means that SMEs striving to turn the dangers of dysfunctional competition into international success, such as OFDI should consider open innovation approach with their international market actors and other partners. To this end, it will be more beneficial for managers of SMEs to invest resources and time in having cross-border collaborations with customers, competitors, suppliers, and other partners. Third, the study findings show that for SMEs, the effects on dysfunctional competition and cross-border open innovation on OFDI are greater at higher levels of strategic agility. Thus, managers of SMEs should continue to nurture and harness strategic agility to increase their presence in foreign markets. This is particularly timely as recent global market conditions and uncertainties have made it imperative for firms to be dynamic, sensitive to external changes and become more fluid with their resources and competencies. In simple terms, as SMEs remain agile in their decision-making process, they can adapt quickly to changing market conditions and modify their strategies to exploit the maximum benefits (such as OFDI) from dysfunctional competition and cross-border open innovation.

5.3. Limitations and future research agenda

Although the findings of this study have unearthed unique research and managerial implications, it has several limitations. First, OFDI may not be an end in itself for developing economy SMEs. Recent studies have identified both financial and non-financial (e.g., innovation and R&D) performance outcomes of OFDI within the context of MNEs (Cui et al., 2022). Therefore, future research can enrich our knowledge on SMEs' OFDI activities by examining how and the conditions under which OFDI can enhance financial performance of SMEs. Also, future studies may compare the OFDI strategies and performance of SMEs in various contexts (industries and regions), to understand patterns and best practices that are
transferable or context specific. In addition to this, using a longitudinal data can undoubtedly assist in tracking the performance of SMEs engaged in OFDI over time. This approach can be valuable in assessing the sustainability and long-term effects of OFDI on SMEs' financial and non-financial outcomes. Also, using qualitative research approaches, including case studies and in-depth interviews, can provide a richer insight of the mechanisms and processes by which OFDI influences SMEs' financial performance. Indeed, these methods can assist in capturing nuanced insights that are often overlooked in quantitative analyses. Finally, future studies may also explore the effectiveness of government policies and support measures in accelerating SMEs' OFDI and enhancing their financial performance. Understanding such policy interventions will be vital to various policy makers and other stakeholders.

Data availability

Data will be made available on request.

References


---

### Table 1: Measurement model

<table>
<thead>
<tr>
<th>Variables and measurement items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysfunctional competition (CR = 0.89; AVE = 0.69)</td>
<td></td>
</tr>
<tr>
<td>There are unlawful competitive practices such as illegal copying of new product and designs in the market.</td>
<td>0.85</td>
</tr>
<tr>
<td>Counterfeiting of your firm's products and trademarks by other firms.</td>
<td>0.74</td>
</tr>
</tbody>
</table>
There are ineffective market competition laws for protecting your firm's intellectual property.  

| Intense unfair competitive practices by other firms in the industry | 0.83 |

**Firm performance (CR = 0.80; AVE = 0.50)**

| Sales growth | 0.57 |
| Profit growth | 0.64 |
| Market share | 0.77 |
| Overall performance | 0.83 |

**Cross-border open innovation (CR = 0.94; AVE = 0.82)**

| Cross border partners such as customers, competitors and suppliers are involved in our innovation projects | 0.82 |
| We cooperate and co-develop with our cross-border partners for all our innovation projects | 0.92 |
| We regularly exchange knowledge with our cross-border partners | 0.95 |
| We often buy and use R&D-related services from our cross-border partners | 0.93 |

**Environmental dynamism (CR = 0.88; AVE = 0.71)**

| Competitors are constantly trying out new competitive strategies | 0.87 |
| Customer needs and demands are changing rapidly in our industry | 0.81 |
| New markets are emerging for products and services in our industry | 0.86 |

**Strategic sensitivity (CR = 0.89; AVE = 0.75)**

| Requirements for strategic adaptations are communicated fast and comprehensively through all levels of the organization. | 0.76 |
| We use different mechanisms to become aware of strategic developments. | 0.85 |
| We are very sensitive to external changes regarding our customers, competitors, and new technologies. | 0.80 |

**Collective commitment (CR = 0.87; AVE = 0.70)**

| Our management board collaborates for strategic decisions. | 0.84 |
| Our top management team is able to make speedy strategic decisions. | 0.75 |
| Strategic problems are collectively solved by our top management without being bogged down in top-level ‘win-lose’ politics. | 0.92 |

**Resource fluidity (CR = 0.89; AVE = 0.65)**

| Our competencies are highly mobile within our organization. | 0.94 |
| We are able to reallocate and use capital resources fluidly. | 0.93 |
| Our organizational structure allows us to redeploy our resources in a flexible manner | 0.71 |

**Figure 1**: Hypothesised relationships
<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial performance</td>
<td>4.20</td>
<td>0.70</td>
<td>0.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Environmental dynamism</td>
<td>4.87</td>
<td>1.27</td>
<td>0.06</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Dysfunctional competition</td>
<td>4.72</td>
<td>1.30</td>
<td>0.05</td>
<td>0.06</td>
<td>0.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cross-border open innovation</td>
<td>4.43</td>
<td>0.86</td>
<td>0.05</td>
<td>0.08</td>
<td>0.47</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Strategic sensitivity</td>
<td>5.39</td>
<td>1.03</td>
<td>0.11*</td>
<td>-0.02</td>
<td>0.08</td>
<td>0.04</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Collective Commitment</td>
<td>4.66</td>
<td>1.18</td>
<td>0.01</td>
<td>0.01</td>
<td>0.02</td>
<td>-0.04</td>
<td>0.45***</td>
<td>0.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Resource fluidity</td>
<td>4.87</td>
<td>1.11</td>
<td>0.09</td>
<td>-0.03</td>
<td>0.08</td>
<td>-0.02</td>
<td>0.53***</td>
<td>0.63***</td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Firm size A</td>
<td>3.52</td>
<td>0.52</td>
<td>-0.12*</td>
<td>-0.16**</td>
<td>-0.08</td>
<td>-0.01</td>
<td>-0.03</td>
<td>0.06</td>
<td>-0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Firm age A</td>
<td>2.43</td>
<td>0.42</td>
<td>-0.08</td>
<td>-0.05</td>
<td>-0.03</td>
<td>0.03</td>
<td>0.05</td>
<td>0.14**</td>
<td>0.03</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>International experience A</td>
<td>1.64</td>
<td>0.43</td>
<td>-0.05</td>
<td>0.09</td>
<td>0.10*</td>
<td>0.10*</td>
<td>0.20***</td>
<td>0.19**</td>
<td>0.19**</td>
<td>0.02</td>
<td>0.43***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>OFDI</td>
<td>2.50</td>
<td>0.64</td>
<td>-0.07</td>
<td>0.10*</td>
<td>0.25***</td>
<td>0.48***</td>
<td>0.11*</td>
<td>-0.03</td>
<td>-0.02</td>
<td>0.00</td>
<td>0.01</td>
<td>0.15**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>R&amp;D UNITB</td>
<td>----</td>
<td>----</td>
<td>-0.07</td>
<td>0.01</td>
<td>-0.13*</td>
<td>-0.06</td>
<td>-0.01</td>
<td>-0.12*</td>
<td>-0.06</td>
<td>-0.05</td>
<td>0.01</td>
<td>0.04</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; ** p < 0.01; ***p < 0.001; B = dummy variables; A = natural logarithm transformation of original values: Squared AVEs at the diagonal in bold.
### Table 3: Structural Model

<table>
<thead>
<tr>
<th>Control paths</th>
<th>Cross-border open innovation</th>
<th>OFDI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td><strong>Model 1</strong></td>
<td><strong>Model 2</strong></td>
</tr>
<tr>
<td>Firm size $^A$</td>
<td>0.02 (0.30)</td>
<td>0.02 (0.26)</td>
</tr>
<tr>
<td>Firm age $^A$</td>
<td>0.03 (0.32)</td>
<td>-0.04 (-0.45)</td>
</tr>
<tr>
<td>International experience $^A$</td>
<td>0.05 (0.42)</td>
<td>0.13 (1.68)*</td>
</tr>
<tr>
<td>R&amp;D unit $^B$</td>
<td>0.01 (0.25)</td>
<td>0.07 (0.98)</td>
</tr>
<tr>
<td>Environmental dynamism</td>
<td>0.04 (0.48)</td>
<td>0.09 (1.22)</td>
</tr>
<tr>
<td>Domestic performance</td>
<td>0.03 (0.37)</td>
<td>-0.08 (-1.06)</td>
</tr>
</tbody>
</table>

**Direct effect**

Dysfunctional competition (DYINS) | 0.45 (6.89)***** | 0.21 (2.65)** | 0.17 (2.33)* | 0.02 (0.30) | 0.02 (0.28) |

**Moderating effects**

Strategic agility (AGIL) | 0.06 (0.88) |
DYINS x AGIL | 0.22 (3.16)***** |

**Mediating effect**

Cross-border open innovation (RINN) | 0.47 (7.02)***** | 0.40 (5.60)***** |

**Moderating effects**

Strategic agility (AGIL) | 0.03 (0.44) |
RINN x AGIL | 0.18 (2.63)** |

**Goodness of Fit Test**

| Chi²/df | 1.32 | 1.20 | 1.18 | 1.32 | 1.30 |
| RMSEA | 0.04 | 0.04 | 0.03 | 0.04 | 0.04 |
| CFI | 0.98 | 0.97 | 0.98 | 0.98 | 0.98 |
| NFI | 0.93 | 0.92 | 0.92 | 0.92 | 0.91 |

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ Standardized estimates reported; T-values are reported in parentheses; $^B$ = dummy variables; $^A$ = natural logarithm transformation of original values

### Table 4: Completely standardized indirect effect

<table>
<thead>
<tr>
<th>Indirect effect of dysfunctional competition on OFDI through cross-border open innovation</th>
<th>Estimates</th>
<th>SE$^a$</th>
<th>LL 95% CI$^b$</th>
<th>UL 95% CI$^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect effect of dysfunctional competition on OFDI through cross-border open innovation</td>
<td>0.21</td>
<td>0.06</td>
<td>0.08</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Notes: N= 196; Bootstrap sample size = 5,000; *Indicates non-zero within the boundaries (significant); LLCI = lower limit confidence interval; ULCI = upper limit confidence interval; SE = standard error.
Figure 2: The moderating effect of strategic agility on the relationship between dysfunctional competition and OFDI

Figure 3: The moderating effect of strategic agility on the relationship between cross-border open innovation and OFDI