



Contents lists available at ScienceDirect

Journal of International Management

journal homepage: www.elsevier.com/locate/intman

Effect of inward foreign direct investment on entrepreneurship productivity in emerging markets

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ARTICLE INFO

Keywords:

Inward foreign direct investment
Entrepreneurship productivity
Emerging markets
Comparative international entrepreneurship

ABSTRACT

This study explores the effect of inward foreign direct investment (FDI) on entrepreneurship productivity, which reflects the quality of entrepreneurship and is measured through the ratio of opportunity-to-necessity entrepreneurship, in emerging markets. Using data across 67 emerging markets during 2002 and 2018, we find that inward FDI has a positive effect on entrepreneurship productivity and this effect is positively moderated by both financial market efficiency and labor market flexibility. However, these effects are not found in developed economies. This study not only enriches our knowledge of the antecedents of entrepreneurship productivity and the value of inward FDI, but also helps explain why some emerging markets benefit to a greater extent from inward FDI than others. Moreover, it provides guidance for emerging market governments taking advantage of inward FDI to improve entrepreneurship productivity.

1. Introduction

What is the effect of inward foreign direct investment (FDI) on a country's entrepreneurship productivity, particularly in emerging markets? This question is important in three respects. First, it advances our knowledge of the antecedents of entrepreneurship productivity. Entrepreneurship productivity, which refers to the ratio of opportunity-to-necessity entrepreneurship, can "capture economic development through technological change and structural transformation...irrespective of the total rate of entrepreneurship in a country" (Fredström et al., 2021, p. 3). It can "bear a discernible positive link to several indicators of economic performance" (Dheer and Treviño, 2022, p. 31) and to "approximate the level of economic development" (Fuentelsaz et al., 2015, p. 248). Thus, it has been widely taken as an indicator of the quality of entrepreneurship (Dheer and Treviño, 2022). Entrepreneurship productivity varies significantly among countries, but scholarly understanding of its antecedents remains lacking, which deserves closer investigation (Fredström et al., 2021). The comparative international entrepreneurship perspective posits that institutional and economic factors may serve as key antecedents of entrepreneurship productivity (Reuber et al., 2018; Verbeke and Ciravegna, 2018). While extant studies have tested the antecedent roles of several institutional factors, little research has examined the effects of key economic factors, such as inward FDI, which inhibits drawing a comprehensive picture of the sources of variations in entrepreneurship productivity across countries (Dheer and Treviño, 2022).

Second, the question above pertains to our understanding of the implications of inward FDI for entrepreneurship. Examining the role of inward FDI in entrepreneurship is rich in theoretical and practical value, yet studies generate mixed findings (Berrill et al., 2020;

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Danakol et al., 2017; Eren et al., 2019; Kim and Li, 2014). An explanation for such mixed findings is that inward FDI has varying effects on the quantity and quality of entrepreneurship. While studies have indicated that the significance of entrepreneurship relies both on its quantity and quality and that the same factor often affects the quantity and quality in different ways (Chowdhury et al., 2019; Sobel, 2008; Stenholm et al., 2013), scholars have focused on the linkage of inward FDI to the quantity of entrepreneurship (Berrill et al., 2020; Kim and Li, 2014; Munemo, 2017). To elaborate on the inward FDI–entrepreneurship linkage and to enrich our knowledge of the implications of FDI, it is vital to test the role of inward FDI in the quality of entrepreneurship, such as entrepreneurship productivity, suggesting the value of our question to the FDI literature and practice.

Third, the context of emerging markets is important. On the one hand, the impact of inward FDI differs between developed countries and emerging markets, so testing the implications of inward FDI in emerging markets is of critical importance (Inkpen et al., 2019). On the other hand, the quality of entrepreneurship varies considerably and is a key source of variations in economic growth and performance among emerging markets (Stenholm et al., 2013; Ye et al., 2022). The comparative international entrepreneurship perspective advocates identifying institutional and economic antecedents of the variations in entrepreneurship among countries, especially those in emerging markets (Terjesen et al., 2016; Verbeke and Ciravegna, 2018). Drawing on this perspective, scholars have clarified several determinants of the quantity of entrepreneurship in emerging markets, whereas less attention has been paid to the quality of entrepreneurship (Chowdhury et al., 2019; Ye et al., 2022). Considering the question above may contribute to the comparative international entrepreneurship perspective by answering what factors lead to improved quality in entrepreneurship across emerging markets.

To address the question, this study explores the linkage between inward FDI and entrepreneurship productivity in emerging markets. In addition, as financial and labor market conditions have profound effects on both entrepreneurship and the value of inward FDI (Danakol et al., 2017; Kim and Li, 2014; Slesman et al., 2021), this study further employs financial market efficiency and labor market flexibility, which reflect the overall conditions of financial and labor markets, as contingencies. Utilizing data on 420 observations across 67 emerging markets for the 2002–2018 period, we find that inward FDI is positively related to entrepreneurship productivity and the relationship is positively moderated by both financial market efficiency and labor market flexibility. These findings are supported by seven robustness tests. We also find that inward FDI does not have a significant effect on the quantity of entrepreneurship (the sum of opportunity and necessity entrepreneurship) in emerging markets. As a post hoc analysis, we undertake additional tests using data on 341 observations covering 27 developed countries in the period 2002–2018. We find that neither the effect of inward FDI on entrepreneurship productivity, nor the moderating effects of financial market efficiency and labor market flexibility, are significant in developed countries.

This study makes three contributions to the literature. First, it enriches our knowledge of the antecedents of entrepreneurship productivity, an emerging, critical, yet under-investigated topic in entrepreneurship research. The contrast between inward FDI's effects on the quality and quantity of entrepreneurship demonstrates that prior literature, which mostly focuses on quantity, draws an incomplete picture. Second, this study advances our understanding of the implications of inward FDI in emerging markets, in that it is not only among the first studies that examine the effect of inward FDI on the quality of entrepreneurship, but also contextualizes the effect of FDI in emerging markets and demonstrates the differences between emerging markets and developed countries. Third, this study shows that inward FDI and financial and labor market conditions can jointly lead to variations in the quality of entrepreneurship, which helps to explain why some emerging markets may reap more benefits from entrepreneurship than others, contributing to the comparative international entrepreneurship perspective.

2. Literature review and hypotheses

2.1. Entrepreneurship productivity

Entrepreneurship is a key driver of economic growth (Sahasranamam et al., 2021). Yet, “not all entrepreneurship contributes equally to economic activity” (Chowdhury et al., 2019, p. 52). For example, opportunity entrepreneurship, which is initiated by individuals who are attracted by opportunities they see in the markets, is often innovative and growth-oriented and hence likely to contribute to economic growth and job creation (Boudreaux et al., 2019; Valdez and Richardson, 2013). Conversely, necessity entrepreneurship is initiated by individuals for whom other options are absent or unsatisfactory (Amorós et al., 2019; Block et al., 2015; Nikolaev et al., 2018). Studies have reported that opportunity entrepreneurship can positively influence a country's per capita GDP and innovative capacity, while necessity entrepreneurship can have negative effects (Dheer and Treviño, 2022). Given the diverse implications of different types of entrepreneurship, countries should both increase the quantity and improve the quality of entrepreneurship to enjoy its benefits (Boudreaux and Nikolaev, 2019; Ye et al., 2022). As a result, studies on the antecedents of entrepreneurship need to test the effects of factors on both its quantity and quality (Chowdhury et al., 2019; Stenholm et al., 2013).

Opportunity entrepreneurship and necessity entrepreneurship can only show the quantity of entrepreneurship; neither in isolation can reflect its quality (Borožan et al., 2017). For instance, Country A scores 150 in opportunity entrepreneurship and 50 in necessity entrepreneurship while Country B scores 100 in both types of entrepreneurship. From this, we might argue that both countries have the same level of entrepreneurship, but they enjoy differential benefits from entrepreneurship, as the quality of entrepreneurship differs strongly between these two countries. Acs et al. (2008) report that opportunity entrepreneurship and necessity entrepreneurship independently offer little value for development policies, while their ratio contributes to predicting economic growth, such that countries in which opportunity entrepreneurship is more than necessity entrepreneurship can realize greater economic progress. Minniti et al. (2006) also find that countries with higher ratios of opportunity-to-necessity entrepreneurship exhibit greater rates of transition from an early stage to success. As a result, scholars have adopted this ratio to reflect the quality of entrepreneurship (Borožan

et al., 2017; Dheer and Treviño, 2022).

Existing literature has highlighted that the ratio of opportunity-to-necessity entrepreneurship “captures economic development through technological change and structural transformation ... irrespective of the total rate of entrepreneurship in a country”, and thereby “is more informative on entrepreneurship productivity than solely examining the prevalence of entrepreneurship or a single type” (Fredström et al., 2021, p. 3). Accordingly, following extant studies, such as Dheer and Treviño (2022) and Fredström et al. (2021), we take entrepreneurship productivity, which is measured by the ratio of opportunity-to-necessity entrepreneurship, as an indicator for the quality of entrepreneurship in a country. This indicator is powerful (Fredström et al., 2021). For instance, in the above case, Country A is likely to benefit to a greater extent from entrepreneurship, in that it has a higher ratio ($150/50 = 3$) than Country B does ($100/100 = 1$). Studies also indicate that for a given quantity of entrepreneurship, entrepreneurship productivity is insightful to approximate the level of economic development in a country (Fuentelsaz et al., 2015). Overall, entrepreneurship productivity “bears a discernible positive link to several indicators of economic performance” (Dheer and Treviño, 2022, p. 31).

The level of entrepreneurship productivity differs significantly across emerging markets. According to data from the Global Entrepreneurship Monitor, the ratio of opportunity-to-necessity entrepreneurship in 2006 was 1.079, 1.529, and 2.346 in Brazil, China, and India, respectively; in 2018 the ratio was 1.648, 2.536, and 0.933 in these three countries. Given such wide variations, it is imperative to identify the antecedents of entrepreneurship productivity in emerging markets (Borozan et al., 2017; Dheer and Treviño, 2022; Fredström et al., 2021). We posit that the comparative international entrepreneurship perspective shed light on this issue.

2.2. The comparative international entrepreneurship perspective

Because of the wide variations in entrepreneurship among countries, scholars have explored “the cross-national border comparison of entrepreneurs, their behaviors, and the circumstances in which they are embedded” (Oviatt and McDougall, 2005, p. 540), which has seen the emergence of the comparative international entrepreneurship perspective (Terjesen et al., 2016). Specifically, this perspective focuses on the comparison of entrepreneurship across countries (e.g., differences in the quantity and quality of entrepreneurship among countries), and it suggests that institutional and economic factors, which represent the differences across countries, are critical sources of the wide variations in entrepreneurship among countries (e.g., Jones et al., 2011; Reuber et al., 2018; Rieger et al., 2021; Terjesen et al., 2016). This perspective “has recently become very visible” in management journals (Verbeke and Ciravegna, 2018, p. 392), but this line of research is still “in an infancy stage” (Terjesen et al., 2016, p. 300). Scholars should take this perspective to further identify the sources of variations in entrepreneurship across countries (Rieger et al., 2021).

Drawing on the comparative international entrepreneurship perspective, scholars have tested the effects of some institutional and economic factors, such as property rights, legal systems, and FDI, on entrepreneurship to explain the variations across countries (Chowdhury et al., 2019; Kim and Li, 2014). Yet, they have primarily focused on the quantity of entrepreneurship, paying little attention to its quality or to entrepreneurship productivity. There are, as far as we are aware, only three exceptions. The first is Fuentelsaz et al. (2015), which reports that property rights, business freedom, educational capital, and financial capital are vital predictors of the ratio of opportunity-to-necessity entrepreneurship, and fiscal freedom is a negative predictor. Fredström et al. (2021) is the second study, finding that informal economy has a negative effect on entrepreneurship productivity, especially when governance quality is high. Third, Dheer and Treviño (2022) report that the regulatory burden negatively affects the ratio of opportunity-to-necessity entrepreneurship, and its effect depends on the cultural framework. Although these studies are insightful, they focus on institutional factors while overlooking the effects from key economic factors, such as inward FDI. Doing so undermines a more thorough understanding of the sources of variations in entrepreneurship quality. This study is designed to shed light on this gap through investigating the effect of inward FDI on entrepreneurship productivity across countries.

2.3. Inward FDI and entrepreneurship

There is ample evidence that inward FDI can facilitate economic growth, job creation, and social development among other benefits, especially in emerging markets (Brandl et al., 2019; Contractor et al., 2021; Jin et al., 2019). Scholars have identified four channels by which inward FDI matters (Zhang et al., 2010). First, domestic firms may observe and imitate foreign-invested firms (Berrill et al., 2020). Second, inward FDI works through building links (Kim and Li, 2014). When a foreign investor forms links with local distributors and suppliers, knowledge spills over to those distributors and suppliers and then to other firms sharing those distributors and suppliers (Pathak et al., 2015). Third, employee turnover from foreign-invested firms to domestic firms helps the diffusion of foreign knowledge (Inkpen et al., 2019). Fourth, inward FDI stimulates competition in product and factor markets (Ayyagari and Kosová, 2010). Domestic firms have to be more competitive, or they will be crowded out (Knoben et al., 2011). The first three channels are often stated as the spillover effects of inward FDI, while the fourth refers to its crowding-out effects (Kim and Li, 2014; Wang and Kafouros, 2020; Zhang et al., 2010).

Inward FDI profoundly matters to entrepreneurship. Scholars have linked them via spillover and crowding-out effects (Danakol et al., 2017). Spillover effects enable local entrepreneurs to learn from foreign investors, helping them identify and pursue opportunities and, as a result, fostering entrepreneurship (Knoben et al., 2011; Pathak et al., 2015). Crowding-out effects, however, may erect entry barriers to entrepreneurship and thereby impede it (Meyer and Sinani, 2009). Empirical results are also mixed. Some studies find the inward FDI–entrepreneurship linkage as positive (e.g., Berrill et al., 2020; Kim and Li, 2014), while others report a nonsignificant (e.g., Albulescu and Tămășilă, 2016; Eren et al., 2019) or even a negative effect (e.g., Ayyagari and Kosová, 2010; Danakol et al., 2017). In summary, the effect of inward FDI on entrepreneurship remains ambiguous, calling for further investigation.

We posit that there are two reasons for these mixed findings. First, prior studies focus mainly on the effect of inward FDI on the

quantity of entrepreneurship, while few explore the effect on the quality of entrepreneurship (Eren et al., 2019). For example, Kim and Li (2014) report that FDI is positively related to business creation. Munemo (2017) tests the role of inward FDI in business startups in developing countries. Yet, while business creation and business startups reflect the quantity of entrepreneurship, neither is concerned with quality. Moreover, the same factor often plays distinct roles in the quantity and quality of entrepreneurship (Sobel, 2008; Ye et al., 2022). For example, Chowdhury et al. (2019) report that financial development and labor regulation positively affect the quantity of entrepreneurship but not its quality, and corruption reduces its quality but does not affect its quantity. Accordingly, inward FDI may have varying effects on the quantity and quality of entrepreneurship, and studies failing to make these distinctions may yield unclear results (Stenholm et al., 2013).

Second, inward FDI exerts context-specific effects on entrepreneurship, in that the value of inward FDI varies with institutional contexts (Berrill et al., 2020) and “entrepreneurial activity is context dependent” (Kim and Li, 2014, p. 214). Scholars have explored how the effect of inward FDI on entrepreneurship is contingent on various factors, including institutional support, political stability, and market development (e.g., Berrill et al., 2020; Danakol et al., 2017; Munemo, 2017). They find institutional factors to be a key category of moderators (Inkpen et al., 2019). For example, Kim and Li (2014) indicate that the positive impact of inward FDI on entrepreneurship is weaker in countries that experience greater political stability and stronger institutional support. Munemo (2017) finds that the role of FDI in promoting business startups depends on a country's financial market development level. In summary, the effect of inward FDI on entrepreneurship varies with key institutional factors. Without considering such factors, research may generate mixed findings. Therefore, to elaborate on the linkage between inward FDI and entrepreneurship it is vital to take additional institutional moderators into account (Berrill et al., 2020; Danakol et al., 2017).

It is noteworthy that scholars advocate examining how the implications of inward FDI vary in developed countries and emerging markets, in that developed countries and emerging markets differ fundamentally in many institutional and economic characteristics (Kim and Li, 2014). For instance, as developed countries foster economic growth mainly by internal knowledge creation rather than by external knowledge acquisition (Sweet and Eterovic, 2019), spillovers from inward FDI have relatively weak effects in developed countries (Inkpen et al., 2019). Emerging markets, however, depend to a greater extent on external knowledge acquisition, so that spillovers from inward FDI offer greater benefits for them (Allred and Park, 2007; Brandl et al., 2019). Thus, it is likely that inward FDI may have differing effects on entrepreneurship in developed countries and emerging markets. Studies on such effects in emerging markets, however, are still lacking, leaving the inward FDI–entrepreneurship linkage in such contexts unclear (Munemo, 2017).

While the focus on the quality of entrepreneurship and the context-specific nature of inward FDI shed light on the FDI–entrepreneurship linkage, neither alone can fully illustrate it. To draw a more comprehensive picture of the linkage, both need to be integrated into one framework, yet few studies have done so. For example, Kim and Li (2014) find that the effect of inward FDI on business creation is moderated by institutional factors, yet they utilize the annual number of newly registered limited-liability firms to measure entrepreneurship, which focuses on quantity rather than quality. Moreover, they do not distinguish between developed and emerging markets among sample countries. Munemo (2017) tests how the effect of inward FDI on business startups varies with financial market development among developing countries. He focuses on the quantity of entrepreneurship rather than its quality.

To advance our knowledge of the inward FDI–entrepreneurship linkage in light of the gaps indicated above, we examine the linkage between inward FDI and entrepreneurship productivity, an indicator of the quality of entrepreneurship, in emerging markets. We also test the moderating effects of two important institutional factors that represent financial and labor market conditions: financial market efficiency and labor market flexibility.

2.4. Inward FDI and entrepreneurship productivity in emerging markets

Entrepreneurship productivity varies significantly across emerging markets. We argue that inward FDI is a key source of this cross-national variation. Inward FDI affects entrepreneurship productivity in emerging markets in two aspects. First, it has a positive effect on opportunity entrepreneurship. On the one hand, inward FDI generates spillovers that can foster opportunity entrepreneurship (Kim and Li, 2014). For instance, foreign-invested firms often introduce new products and services, which generate demand that entrepreneurs can fulfill with locally adapted offerings (Knoben et al., 2011). Foreign-invested firms need local suppliers and distributors, also offering opportunities for entrepreneurs (Zhang et al., 2010). On the other hand, inward FDI aids local entrepreneurs in identifying and pursuing opportunities (Jin et al., 2019). Individuals with work experience in foreign-invested firms learn advanced technology and management practice through training, observing, imitating, and other ways (Inkpen et al., 2019). Individuals lacking such experience may learn by building personal ties with employees of foreign-invested firms, interacting with distributors and suppliers of foreign-invested firms, and so on (Knoben et al., 2011). Overall, entrepreneurs in host countries enjoy spillovers from inward FDI to identify and pursue opportunities (Berrill et al., 2020; Danakol et al., 2017), making inward FDI significantly contributing to opportunity entrepreneurship (Kim and Li, 2014).

At the same time, the crowding-out effects of inward FDI on opportunity entrepreneurship are weak in emerging markets. Since attractive opportunities are predicated on the existence of weak competition (Young et al., 2018), entrepreneurs pursuing them do not compete seriously with foreign investors and thus are less likely to be strongly affected by the crowding-out effects of inward FDI (Pathak et al., 2015). And opportunity-driven entrepreneurs are strongly motivated and unlikely to give up in the face of competition from foreign-invested firms and better job positions provided by foreign investors (Meyer and Sinani, 2009). Therefore, inward FDI plays a weak role in opportunity entrepreneurship through its crowding-out effects. Overall, because the facilitating effect of inward FDI on opportunity entrepreneurship is very strong while its impeding effect is relatively weak, the net effect of inward FDI is positive in emerging markets.

Second, in emerging markets, inward FDI influences necessity entrepreneurship negatively. On the one hand, individuals that

cannot find jobs or are dissatisfied with their current status will enter necessity entrepreneurship (Amorós et al., 2019). Inward FDI contributes to job creation by offering jobs directly and generating indirect benefits by bringing businesses to local distributors and suppliers (Haskel et al., 2007; Meyer and Sinani, 2009). Although competition from foreign investors may drive out some domestic firms, research has found a net impact on job creation in emerging markets (Meyer and Sinani, 2009), which reduces necessity entrepreneurship. On the other hand, inward FDI raises the employee status in emerging markets. To attract talent, foreign investors often provide better employment conditions (Girma et al., 2019). Individuals dissatisfied with their status may switch to work for foreign-invested firms; otherwise, they will engage in necessity entrepreneurship. Moreover, increased labor market competition impels local firms to improve employees' status and benefits (Van der Straaten et al., 2020). Thus, employees may become less dissatisfied, which makes necessity entrepreneurship less attractive (Dencker et al., 2021). Overall, inward FDI reduces individuals' need to engage in necessity entrepreneurship in emerging markets.

Because entrepreneurship productivity is represented as the ratio of opportunity-to-necessity entrepreneurship, one factor can improve it by increasing opportunity entrepreneurship, reducing necessity entrepreneurship, or both (Fredström et al., 2021). Inward FDI can positively influence opportunity entrepreneurship and negatively affect necessity entrepreneurship; thus, it may have an overall positive effect on entrepreneurship productivity in emerging markets. Therefore,

Hypothesis 1. Inward FDI is positively related to entrepreneurship productivity in emerging markets.

2.5. The moderating effects of financial market efficiency and labor market flexibility

Extant studies have indicated that the linkage between inward FDI and entrepreneurship is contingent on institutional factors (Berrill et al., 2020; Brandl et al., 2019). The effect of inward FDI on entrepreneurship productivity, thereby, is contingent on key institutional factors as well. Because "FDI has an inevitable impact on the receiving economy in terms of new flows of both financial capital and new knowledge" (Slesman et al., 2021, p. 3), and entrepreneurship depends heavily on support from financial and labor markets (Dheer and Treviño, 2022; Fredström et al., 2021), we further test how the effect of inward FDI on entrepreneurship productivity in emerging markets is contingent on the institutional conditions of both financial and labor markets in terms of financial market efficiency and labor market flexibility to elaborate on this effect.

Entrepreneurship often needs some degree of financial support (Falahat et al., 2020). Thus, financial market conditions may moderate the inward FDI–entrepreneurship productivity linkage. We take financial market efficiency to reflect overall financial market conditions. In an effective financial market, firms can obtain affordable financial services, easily finance their initiatives in equity markets, acquire loans, access venture capital, and obtain other resources (e.g., Drori et al., 2018; Falahat et al., 2020; Schwab, 2018).

Financial market efficiency profoundly matters to entrepreneurship (Levie and Autio, 2008). For instance, Fuentelsaz et al. (2015) indicates that financial markets that feature greater freedom (higher financial market efficiency) promote opportunity entrepreneurship but impede necessity entrepreneurship. Financial market efficiency also functions as a critical contingency factor. For instance, Munemo (2017) reports that financial market development, which is highly linked with financial market efficiency, moderates the linkage of inward FDI to business startups. That study examines the moderating role of financial market conditions in the linkage between inward FDI and the quantity of entrepreneurship, leaving its moderating effect on the linkage of inward FDI to the quality of entrepreneurship underexamined.

We have two reasons to argue that financial market efficiency may positively moderate the linkage of inward FDI to entrepreneurship productivity in emerging markets. First, financial market efficiency strengthens the positive effect of inward FDI on opportunity entrepreneurship. In emerging markets, inward FDI can not only generate opportunities but also facilitate pursuing those opportunities, therefore positively affecting opportunity entrepreneurship. To better capture such opportunities, entrepreneurs may need financing (Drori et al., 2018; Levie and Autio, 2008). When the financial market is highly efficient, entrepreneurs are more likely to obtain financing at lower costs (Munemo, 2017), which helps them seize opportunities generated by inward FDI. In contrast, when financial market efficiency is low, entrepreneurs are less likely to access external financing, which prevents them from pursuing opportunities opened by inward FDI and thereby weakens the role that inward FDI plays in opportunity entrepreneurship (Fuentelsaz et al., 2015).

Second, financial market efficiency strengthens the negative role of inward FDI in necessity entrepreneurship. Inward FDI not only creates jobs directly and indirectly but also helps improve employee status in emerging markets, thereby discouraging necessity entrepreneurship (Girma et al., 2019). When financial market efficiency is high, foreign investors and their distributors and suppliers can leverage the financial market to grow quickly, which increases the significance of the role of inward FDI in job creation (Fuentelsaz et al., 2015). Local firms also use the financial market to compete for talent and improve employee status, which further intensifies the negative impact of inward FDI on necessity entrepreneurship (Munemo, 2017). However, when financial market efficiency is low, foreign investors, suppliers and distributors, as well as local firms in emerging markets, have difficulties obtaining resources from the financial market to exploit FDI to create jobs, enhance employee status, and discourage necessity entrepreneurship. The linkage of inward FDI to necessity entrepreneurship, therefore, is less negative in an inefficient financial market context.

Overall, when financial market efficiency is high, both the positive effect of inward FDI on opportunity entrepreneurship and the negative impact on necessity entrepreneurship in emerging markets are stronger. Thus, the positive effect of inward FDI on entrepreneurship productivity is enhanced by financial market efficiency, suggesting that this factor exerts a positive moderating effect. Therefore,

Hypothesis 2. Financial market efficiency strengthens the positive relationship between inward FDI and entrepreneurship

productivity in emerging markets.

In addition to financial markets, labor markets also influence both entrepreneurship and the implications of inward FDI (Eren et al., 2019; Fuentelsaz et al., 2015). Labor market conditions significantly affect how many and what kinds of individuals engage in entrepreneurship and thus affect both the quantity and quality of entrepreneurship. Meanwhile, labor market conditions can matter to the spillover and crowding-out effects of inward FDI, in turn affecting the implications of inward FDI for entrepreneurship (Alimov, 2015; Berrill et al., 2020; Danakol et al., 2017). As a result, we suggest that the linkage between inward FDI and entrepreneurship productivity may also depend on labor market conditions.

We use labor market flexibility to represent labor market conditions in general, as flexibility strongly determines the effectiveness of a labor market (Alimov, 2015). Labor market flexibility is reflected by the cooperation in labor–employer relations, the flexibility in determining wages, hiring and firing practices, redundancy costs, and the role of taxation in work incentives (Schwab, 2018). Labor market flexibility provides employers and employees with autonomy and mobility, such that firms can hire and fire without interference and individuals can work where they want to or not at all (Bauer et al., 2018). In flexible conditions, laborers are well deployed, promoting economic growth (Levine et al., 2020). Labor market flexibility also influences entrepreneurship. Fuentelsaz et al. (2015) indicate, for example, that labor freedom, which in part means high labor market flexibility, affects opportunity entrepreneurship positively while not affecting necessity entrepreneurship. Angulo-Guerrero et al. (2017) report that labor freedom promotes opportunity entrepreneurship but discourages necessity entrepreneurship. Overall, most studies have adopted labor market flexibility as a predictor of entrepreneurship rather than as a moderator.

We argue that labor market flexibility may positively moderate the linkage between inward FDI and entrepreneurship productivity in emerging markets for two reasons. First, labor market flexibility strengthens the positive effect of inward FDI on opportunity entrepreneurship, in that it helps entrepreneurs in emerging markets more easily pursue opportunities provided by inward FDI. For example, labor market flexibility enables an aspiring entrepreneur to start a business without having to resign from his or her current position, which reduces the cost of opportunity entrepreneurship (Danakol et al., 2017; Eesley, 2016). Moreover, labor market flexibility makes it easier for the startup to poach talent and release unsuitable employees from employment. As a result, entrepreneurs are better able to pursue opportunities generated by inward FDI when labor market flexibility is higher, improving the effect of inward FDI on opportunity entrepreneurship. Furthermore, as indicated above, inward FDI plays a weak role in opportunity entrepreneurship through its crowding-out effects, in that opportunity-driven entrepreneurs are strongly motivated to pursue opportunities and unlikely to give up in the face of better benefits provided by foreign investors (Meyer and Sinani, 2009). Thus, labor market flexibility plays a relatively weak role in strengthening the negative impact of inward FDI on opportunity entrepreneurship. In summary, the net positive effect of inward FDI on opportunity entrepreneurship is more significant when labor market flexibility is at a higher level.

Second, labor market flexibility strengthens the negative impact of inward FDI on necessity entrepreneurship in emerging markets. Inward FDI can create jobs, enhance employee status, and therefore discourage necessity entrepreneurship (Girma et al., 2019). Labor market flexibility can strengthen such effects in emerging markets. On the one hand, it enables more individuals to take jobs generated by inward FDI (Danakol et al., 2017). When the labor market lacks flexibility, some jobs resulting from FDI may not be filled locally, in that qualified applicants are unable to move (Alimov, 2015). In contrast, when labor market is highly flexible, such jobs can be filled (Levine et al., 2020). On the other hand, foreign investors often attract talent through providing favorable employment conditions in emerging markets. In a flexible labor market, individuals dissatisfied with their status may switch to foreign-invested firms; otherwise, they will engage in necessity entrepreneurship (Fuentelsaz et al., 2015). Meanwhile, the competition for talent drives domestic firms to improve employee status in a flexible labor market, also reducing necessity entrepreneurship (Van der Straaten et al., 2020). Thus, labor market flexibility strengthens the role played by inward FDI in reducing necessity entrepreneurship in emerging markets. Moreover, while labor market flexibility disrupts permanent contracts that knock people out from stable employment and then forces them into necessity entrepreneurship in emerging markets, this mechanism plays a very weak role in the negative linkage of inward FDI to necessity entrepreneurship. This is because permanent contracts become less prevalent and FDI makes a net contribution to job creation in emerging markets (Meyer and Sinani, 2009). Taken together, labor market flexibility magnifies the negative effect of inward FDI on necessity entrepreneurship in emerging markets.

Overall, high labor market flexibility in emerging markets strengthens the effects of inward FDI on both opportunity entrepreneurship and necessity entrepreneurship. It thereby magnifies the positive linkage between inward FDI and entrepreneurship productivity in emerging markets, reflecting a positive moderating effect. Therefore,

Hypothesis 3. Labor market flexibility strengthens the positive relationship between inward FDI and entrepreneurship productivity in emerging markets.

3. Methods

3.1. Data sources

We tested our hypotheses using matched country-level data that consist of 420 observations covering 67 emerging markets for the 2002–2018 period. We gathered the data from the Heritage Foundation's Economic Freedom Index (EFI), the Global Competition Report (GCR), the Global Entrepreneurship Monitor (GEM), the World Development Index (WDI), the International Labor Organization (ILO), and the Fraser Institute (FI). We identified emerging markets drawing on the criteria from Hoskisson et al. (2000, p. 249) that "... a rapid pace of economic development and government policies favoring economic liberalization and the adoption of a free-market system" and consulting the lists of emerging markets provided by previous studies, such as Duran et al. (2019), Hoskisson et al.

(2013), and Marquis and Raynard (2015).¹

3.2. Measures

Following Fredström et al. (2021), we measured entrepreneurship productivity by the ratio of opportunity-to-necessity entrepreneurship. The ratio has been utilized to reflect the quality of entrepreneurship (Dheer and Treviño, 2022; Fuentelsaz et al., 2015). We collected data on both opportunity entrepreneurship and necessity entrepreneurship from GEM. Following Fredström et al. (2021), we applied a natural-log transformation for distributional purposes. Entrepreneurship productivity was measured at Year t , and all other variables were measured at Year $t-1$.

We gathered data on inward FDI from WDI. Specifically, inward FDI was measured as the annual new inflows to obtain lasting management interests (10 % or more of voting stock). Due to the skewed distribution issue, we used such data in the natural-log (\ln) form.

Data on financial market efficiency were acquired from GCR, and measured along five dimensions that include financial services meeting business needs, the affordability of financial services, financing through equity markets, ease of access to loans, and the availability of venture capital (Schwab, 2018). Data on labor market flexibility were also obtained from GCR.² This measure contains five dimensions, including cooperation in labor–employer relations, flexibility in determining wages, hiring and firing practices, redundancy costs, and the effects of taxation on incentives to work (Schwab, 2018).

Drawing on prior studies, we included nine control variables that may influence the linkage between inward FDI and entrepreneurship productivity (e.g., Berrill et al., 2020; Fredström et al., 2021; Guerrero et al., 2021; Kim and Li, 2014). The first is a country's population, which is a mid-year estimate including all residents regardless of legal or citizenship status (in the \ln form). Population growth and GDP growth were also controlled. Inflation, the fourth control variable, was measured using the annual growth rate of the GDP implicit deflator. Fifth, we controlled for the size of informal economy, reflecting the percentage of the economy that is informal (Fredström et al., 2021). Data on these five variables were obtained from WDI. Sixth, we controlled the unemployment rate, reflecting the share of the labor force that is without work yet available for and seeking employment. ILO publishes the data. We also controlled fiscal health, which is a government's fiscal condition in terms of average deficits as a percentage of GDP for the most recent three years and debt as a percentage of GDP (McMullen et al., 2008). Our eighth control variable is judicial effectiveness, reflecting both efficiency and fairness of an economy's judicial system. It is measured by three dimensions: quality of judicial process, judicial independence, and the likelihood of obtaining favorable judicial decisions (Puffer et al., 2010). Data on fiscal health and judicial effectiveness were gathered from EFI. The final control variable is the cost of starting a business. It shows the time and money needed to start a new limited liability business (Boudreaux et al., 2022). We obtained its data from the Fraser Institute.³

3.3. Modelling

Following Wooldridge (2002), we identified models to analyze the data in three steps. First, we made a Breusch-Pagan Lagrange multiplier test to choose between the panel data method and the pooled ordinary least squares method. The test found that unobserved individual effects exist. Thus, the panel data method was adopted (Coviello and Jones, 2004; Zhang et al., 2014). Second, a Hausman test suggested that random-effects models are more appropriate than fixed-effects models (Hausman and Taylor, 1981). Third, we clustered standard errors by country to adjust for heteroskedasticity (Imbens and Kolesar, 2016).

4. Results

4.1. Findings

Table 1 reports summary statistics describing all variables and their correlations.

Some countries are more attractive to foreign investors than others; thus, the distribution of inward FDI is not random, which may lead to sample-selection bias. To overcome this bias, we utilized a Heckman two-stage model (Heckman, 1979). In the first stage, we undertook a probit regression (xtprobit command) to estimate the likelihood of a country attracting FDI and got an inverse Mills ratio. Studies have shown that geographic distance, which reflects the great circle distance between the geographic centers of two countries, profoundly affects FDI, as it increases costs of communications, transportation, sending people abroad, and others (Berry et al., 2010). For instance, Grosse and Treviño (1996) report a negative impact of geographic distance on the amount of foreign investment in the

¹ These 67 emerging markets include Algeria, Angola, Bangladesh, Barbados, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Georgia, Ghana, Guatemala, Hungary, India, Indonesia, Iran, Jamaica, Jordan, Latvia, Lebanon, Lithuania, Madagascar, Malawi, Malaysia, Mexico, Morocco, Namibia, Nigeria, Pakistan, Panama, Peru, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, Senegal, Slovakia, Slovenia, South Africa, Suriname, Thailand, Trinidad and Tobago, Tunisia, Uganda, United Arab Emirates, Uruguay, Venezuela, Vietnam, Yemen, and Zambia.

² These data were available only for the 2006–2018 period. Following Kim and Li (2014), we calculated the means during this time period and then used them to replace values missing from 2002 to 2005.

³ For the details of the definitions and sources of all variables, please see Appendix Table A1.

Table 1
Summary statistics and correlations.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Entrepreneurship productivity	1												
2. Inward FDI	0.087*	1											
3. Financial market efficiency	0.280**	0.323**	1										
4. Labor market flexibility	0.115*	-0.026	0.328**	1									
5. Population	-0.156**	0.649**	0.123*	-0.203**	1								
6. GDP growth	0.068	0.188**	0.136**	0.018	0.193**	1							
7. Population growth	0.043	-0.060	0.074	-0.005	0.290**	0.179**	1						
8. Inflation	-0.160**	-0.024	-0.262**	-0.325**	0.157**	-0.046	0.175**	1					
9. Informal economy size	0.027	-0.114*	-0.070	-0.048	0.121*	0.080	0.389**	0.135**	1				
10. Unemployment rate	-0.331**	-0.245**	-0.100*	-0.105**	-0.226**	-0.243**	-0.283**	0.029	-0.272**	1			
11. Cost of starting a business	0.207**	0.022	0.161**	0.288**	-0.249**	-0.249**	-0.152**	-0.322**	-0.213**	0.001	1		
12. Judicial effectiveness	0.152**	0.239**	0.408**	0.340**	-0.109*	-0.307**	-0.009	-0.255**	-0.245**	0.130**	0.299**	1	
13. Fiscal health	0.132**	-0.041	0.173**	0.370**	-0.197**	-0.326**	-0.025	-0.294**	-0.028	-0.023	0.402**	0.161**	1
Mean	1.262	22.028	3.679	4.343	16.782	3.641	0.957	5.501	36.586	8.357	8.925	46.257	70.739
Standard deviation	0.341	1.603	0.624	0.492	1.568	3.281	1.137	7.595	46.692	5.902	0.902	14.222	27.221
Minimum	0.479	17.772	2.184	3.043	12.555	-7.800	-1.474	-1.734	-40.233	0.620	5.301	12.260	0.000
Maximum	2.112	25.681	5.354	6.042	19.585	14.231	5.736	72.74	138.909	29.350	9.910	85.000	99.800

Note.

* $p < 0.05$.

** $p < 0.01$.

United States. Bailey and Li (2014) also show a negative linkage between geographic distance and FDI. Therefore, we adopted geographical distance as an instrumental variable. We calculated it using a country's geographical distance to the United States (in the \ln form), the largest foreign investor in the sample period. The data were provided by Professor Guillén at the Wharton School.⁴

In the second stage of the analysis, we employed random effects generalized least squares regressions clustered by country to test our hypotheses (Fredström et al., 2021). We conducted these tests in four steps. First, we included all control variables, the inverse Mills ratio, and two moderators to form a basic model. Second, we added inward FDI in the model to test its effect on entrepreneurship productivity. Third, we respectively tested the moderating effects of financial market efficiency and labor market flexibility. Finally, we combined all predictors to construct the full model. The results are reported in Table 2.

Model 1.2, the basic model, examines the effects of all control variables and moderators on entrepreneurship productivity in emerging markets. The findings share several similarities with prior studies, namely Fredström et al. (2021), Fuentelsaz et al. (2015), and Dheer and Treviño (2022). For instance, all four studies find a negative linkage between the unemployment rate and entrepreneurship productivity. Our model finds that the cost of starting a new business negatively affects entrepreneurship productivity, being consistent with the finding of Fuentelsaz et al. (2015) that greater business freedom predicts a higher ratio of opportunity-to-necessity entrepreneurship. Fuentelsaz et al. (2015) also report that the availability of capital financing positively influences this ratio, which accords with the predictive effect of financial market efficiency shown in Model 1.2, as more efficient financial markets tend to make financial capital more easily available.

The results of Model 1.2 also reveal differences from findings reported in prior studies. For instance, Fredström et al. (2021) report a negative linkage between the size of informal economy and entrepreneurship productivity, while we find, using Model 1.2, a nonsignificant impact. This difference has both theoretical and empirical reasons. Empirically, Fredström et al. (2021) cover developed and developing markets, but we focus on emerging markets. Theoretically, Fredström et al. (2021) find that the impact of the size of informal economy depends on governance quality. As emerging markets suffer from poorer quality governance than developed countries, it is likely that the impact of informal economy on entrepreneurship productivity becomes less important in emerging markets.

Model 1.3 explores the impact of inward FDI on entrepreneurship productivity. It finds that inward FDI is positively linked to entrepreneurship productivity in emerging markets ($\beta = 0.138, p = 0.012$), supporting Hypothesis 1. This coefficient means that for each 1 % increase in inward FDI, entrepreneurship productivity will increase 0.137 %.

Model 1.4 includes the interaction of inward FDI and financial market efficiency, revealing that the interaction has a positive effect on entrepreneurship productivity ($\beta = 0.109, p = 0.000$). The result means that when a country's financial market efficiency is 1 standard deviation below and above its mean, for each 1 % increase in inward FDI, entrepreneurship productivity increases by 0.025 % and 0.242 %, respectively. Fig. 1 plots the result and shows that the positive linkage of inward FDI to entrepreneurship productivity strengthens as financial market efficiency increases. Thus, Hypothesis 2 is supported.

Model 1.5 tests the moderating effect of labor market flexibility. It finds that the interaction of inward FDI with labor market flexibility is positively related to entrepreneurship productivity ($\beta = 0.122, p = 0.000$). It means that when labor market flexibility is 1 standard deviation below and above its mean, for each 1 % increase in inward FDI, entrepreneurship productivity increases by 0.055 % and 0.298 %, respectively. Fig. 2 plots this result, showing that the positive linkage of inward FDI to entrepreneurship productivity strengthens as the labor market is more flexible. This figure indicates that labor market flexibility exerts a positive moderating effect, supporting Hypothesis 3. Model 1.6, the full model, confirms all these findings.

4.2. Robustness checks

We conducted seven additional tests to check the robustness of the above-reported findings.⁵ First, instead of clustering by country, we reran our models while clustering by country-year. All three hypotheses remain supported. Second, we conducted the above-mentioned tests using fixed-effects models. The results shown in Table A2 again provide support for all three hypotheses. Third, we adopted labor freedom (from EFI) as a substitute for labor market flexibility and analyzed the data using random-effects models. The results reported in Table A3 again support our hypotheses. Fourth, we used fixed-effects models to re-analyze these data and found support for our hypotheses.

Fifth, because data on labor market flexibility was available only for the 2006–2018 period, following Kim and Li (2014), we calculated the means in this period and adopted them to replace values that were missing from 2002 to 2005 for the above tests. We also focused on observations between 2006 and 2018 and re-analyzed the data. All three hypotheses were supported by the results reported in Table A4. Sixth, we tested the effect of inward FDI on entrepreneurship productivity directly utilizing random-effects models, without using a Heckman two-stage model. The results reported in Table A5 support all hypotheses. Finally, we adopted fixed-effects models to conduct the same tests. All hypotheses were again supported. Overall, the seven additional tests indicate that our findings are robust.

⁴ The data are available at: <http://www.management.wharton.upenn.edu/guillen/Free-Data.htm>

⁵ Space limitations prevent us from listing the results of all seven tests, please see the appendix for detailed results (Tables A2–A7). The results not reported are available from the authors.

Table 2
Results of Heckman two-stage random-effects models clustered by country.

Variables	First-stage: DV = Inward FDI		Second-stage: DV = Entrepreneurship productivity			
	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5	Model 1.6
Constant	-4.193*** (0.486)	1.558*** (0.182)	1.564*** (0.188)	1.609*** (0.188)	1.604*** (0.189)	1.627*** (0.189)
Population	1.688*** (0.298)	-0.285*** (0.065)	-0.359*** (0.081)	-0.380*** (0.085)	-0.378*** (0.081)	-0.389*** (0.083)
Population growth	-0.325** (0.107)	0.047 (0.033)	0.061* (0.031)	0.062 ⁺ (0.029)	0.073* (0.031)	0.071* (0.029)
GDP growth	-0.004 (0.061)	0.023 (0.017)	0.019 (0.018)	0.018 (0.017)	0.016 (0.017)	0.016 (0.017)
Inflation	0.022 (0.088)	-0.012 (0.029)	-0.013 (0.028)	-0.012 (0.027)	-0.020 (0.027)	-0.018 (0.027)
Informal economy size	-0.143* (0.056)	0.008 (0.014)	0.012 (0.015)	0.018 (0.014)	0.014 (0.014)	0.018 (0.014)
Unemployment rate	-0.123 (0.125)	-0.138*** (0.033)	-0.127*** (0.034)	-0.127*** (0.036)	-0.123*** (0.032)	-0.124*** (0.034)
Cost of starting a business	0.189 ⁺ (0.108)	-0.025 (0.038)	-0.036 (0.037)	-0.032 (0.037)	-0.042 (0.038)	-0.038 (0.038)
Judicial effectiveness	1.586*** (0.217)	-0.016 (0.070)	-0.039 (0.072)	-0.049 (0.074)	-0.059 (0.071)	-0.061 (0.073)
Fiscal health	0.092 (0.175)	0.002 (0.028)	0.007 (0.027)	0.008 (0.026)	0.008 (0.027)	0.009 (0.026)
Geographical distance	-0.638** (0.225)					
Inverse Mills ratio		-0.096 ⁺ (0.050)	-0.098 ⁺ (0.050)	-0.113* (0.051)	-0.119* (0.051)	-0.125* (0.052)
Financial market efficiency (FME)		0.082** (0.030)	0.063 ⁺ (0.032)	-0.011 (0.043)	0.057 ⁺ (0.034)	0.006 (0.044)
Labor market flexibility (LMF)		-0.076* (0.031)	-0.076** (0.029)	-0.079** (0.029)	-0.155*** (0.038)	-0.139*** (0.042)
Inward FDI			0.138* (0.055)	0.134* (0.052)	0.177** (0.051)	0.165** (0.051)
Inward FDI × FME				0.109*** (0.029)		0.077** (0.029)
Inward FDI × LMF					0.122*** (0.035)	0.095* (0.040)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Between R-squared	-	0.361	0.376	0.395	0.354	0.374

Note: $N = 420$.

Standard errors are reported in parentheses.

⁺ $p < 0.10$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

4.3. Post-hoc analyses

We further explored the effects of inward FDI, financial market efficiency, and labor market flexibility on the quantity of entrepreneurship in emerging markets. We measured the quantity as the sum of opportunity entrepreneurship and necessity entrepreneurship. The results are reported in Table 3. We found that inward FDI did not affect the quantity of entrepreneurship significantly in emerging markets ($\beta = -0.339$, $p = 0.672$). Financial market efficiency can hardly moderate the linkage of inward FDI to the quantity of entrepreneurship ($\beta = -0.846$, $p = 0.274$), whereas labor market flexibility negatively moderates this linkage ($\beta = -2.117$, $p = 0.007$). Our findings indicate that in emerging markets, inward FDI indeed affects the quantity and quality of entrepreneurship differently.

We also collected data on developed countries to explore whether the effects of inward FDI on entrepreneurship productivity differ between developed countries and emerging markets. We obtained 341 observations across 27 developed countries between 2002 and 2018.⁶ All measures are the same as those used in emerging markets.⁷ Table 4 lists the regression results. We found that, in developed economies, inward FDI does not have a significant effect on entrepreneurship productivity ($\beta = -0.053$, $p = 0.584$), and neither

⁶ These countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

⁷ See the statistics and correlations in Appendix Table A6.

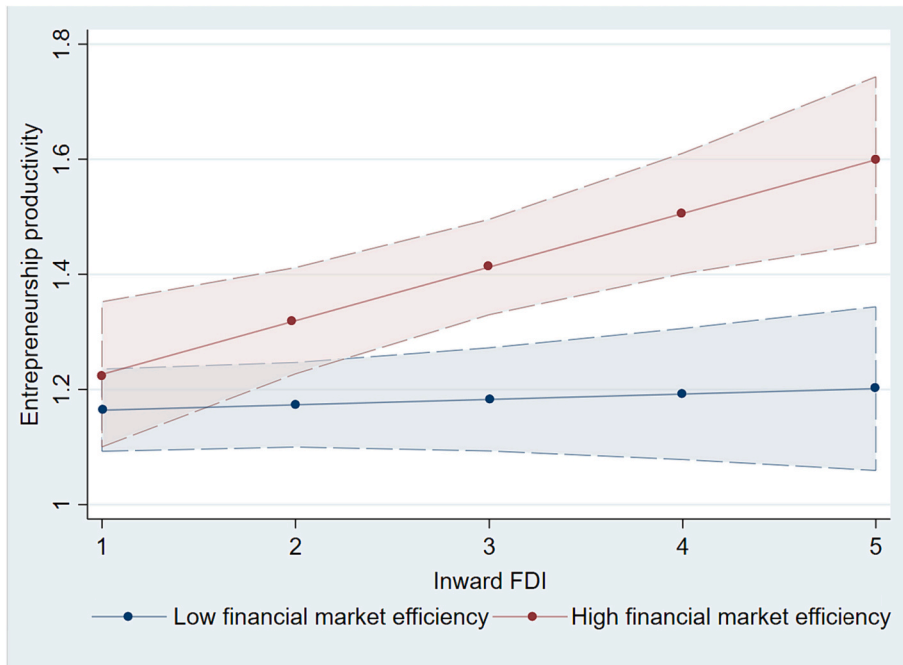


Fig. 1. The moderating effect of financial market efficiency in emerging markets.

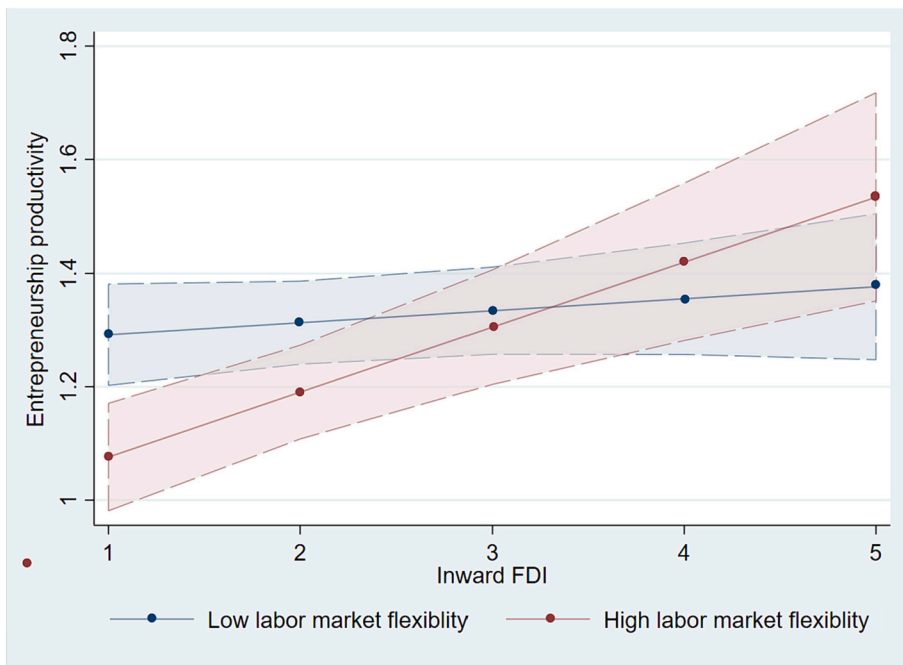


Fig. 2. The moderating effect of labor market flexibility in emerging markets.

financial market efficiency ($\beta = 0.077, p = 0.280$) nor labor market flexibility ($\beta = 0.004, p = 0.942$) have a moderating effect on the linkage between inward FDI and entrepreneurship productivity. Several additional tests confirm these findings. These findings demonstrate that the implications of inward FDI differ between developed countries and emerging markets. Such differences verify the value of considering a contingency perspective and the need to exercise caution when interpreting the results of prior studies that do not distinguish developed countries from emerging markets.

Table 3

Results on the quantity of entrepreneurship using Heckman two-stage random-effects models clustered by country.

Variables	First-stage: DV = Inward FDI	Second-stage: DV = Quantity of entrepreneurship				
	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5	Model 1.6
Constant	-4.193*** (0.486)	5.656 (4.540)	5.748 (4.531)	5.436 (4.444)	5.511 (4.336)	5.515 (4.329)
Population	1.688*** (0.298)	2.402 (1.969)	2.542 (2.083)	2.626 (2.100)	2.838 (2.054)	2.837 (2.061)
Population growth	-0.325** (0.107)	1.651* (0.819)	1.631* (0.816)	1.616* (0.815)	1.419+ (0.815)	1.418+ (0.816)
GDP growth	-0.004 (0.061)	-0.023 (0.352)	-0.013 (0.357)	-0.016 (0.359)	0.035 (0.354)	0.035 (0.355)
Inflation	0.022 (0.088)	1.826** (0.570)	1.841** (0.567)	1.836** (0.567)	2.038*** (0.589)	2.039*** (0.589)
Informal economy size	-0.143* (0.056)	-0.096 (0.389)	-0.103 (0.391)	-0.155 (0.376)	-0.148 (0.382)	-0.148 (0.375)
Unemployment rate	-0.123 (0.125)	0.160 (0.735)	0.133 (0.736)	0.146 (0.748)	0.129 (0.686)	0.130 (0.687)
Cost of starting a business	0.189+ (0.108)	-0.632 (0.804)	-0.610 (0.787)	-0.640 (0.782)	-0.591 (0.748)	-0.592 (0.752)
Judicial effectiveness	1.586*** (0.217)	0.476 (1.965)	0.510 (1.967)	0.507 (1.948)	0.771 (1.850)	0.772 (1.858)
Fiscal health	0.092 (0.175)	-0.636 (0.810)	-0.656 (0.809)	-0.690 (0.805)	-0.747 (0.801)	-0.749 (0.805)
Geographical distance	-0.638** (0.225)					
Inverse Mills ratio		2.399 (1.491)	2.365 (1.488)	2.459+ (1.454)	2.583+ (1.448)	2.581+ (1.445)
Financial market efficiency (FME)		-0.552 (0.926)	-0.502 (0.954)	0.123 (1.279)	-0.376 (0.920)	-0.378 (1.127)
Labor freedom (LF)		0.676 (0.814)	0.683 (0.821)	0.684 (0.808)	2.120* (0.975)	2.121* (0.937)
Inward FDI			-0.339 (0.801)	-0.219 (0.855)	-1.111 (0.917)	-1.111 (0.911)
Inward FDI × FME				-0.846 (0.773)		0.003 (0.685)
Inward FDI × LF					-2.117** (0.786)	-2.119** (0.779)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Between R-squared	-	0.367	0.370	0.374	0.360	0.360

Note: $N = 420$.

Standard errors are reported in parentheses.

+ $p < 0.10$.* $p < 0.05$.** $p < 0.01$.*** $p < 0.001$.

5. Discussion

5.1. Contributions

This study makes three contributions to the literature. First, it enriches our knowledge of the antecedents of entrepreneurship productivity. Because entrepreneurship productivity is an engine for economic growth, scholars have called for research that identifies its antecedents (Fredström et al., 2021). We respond to this call by examining the role that inward FDI plays in driving entrepreneurship productivity in emerging markets and considering two important institutional contingencies. We find that inward FDI has a positive impact on entrepreneurship productivity and this effect is enhanced by financial market efficiency and labor market flexibility. These findings indicate that inward FDI is an important antecedent of entrepreneurship productivity in emerging markets and both financial market efficiency and labor market flexibility are key boundaries. Our findings are in line with, and extend, findings reported by previous studies, such as Fredström et al. (2021) and Fuentesaz et al. (2015). Therefore, this study advances our understanding of factors that promote entrepreneurship productivity.

Fuentesaz et al. (2015) and Dheer and Treviño (2022) report that institutional factors significantly influence entrepreneurship productivity, especially in emerging markets. We go beyond their studies by examining the impact of a vital economic factor: inward FDI. We find that, in addition to institutional factors, economic factors also matter, which extends our knowledge of the antecedents of entrepreneurship productivity. Moreover, instead of testing the direct effects of institutional factors, we find that two important institutional factors – financial market efficiency and labor market flexibility – serve as critical boundaries shaping the linkage of inward FDI to entrepreneurship productivity, providing a novel understanding of how institutional factors can matter to

Table 4
Results of Heckman two-stage random-effects models (Developed countries).

Variables	First-stage: DV = Inward FDI		Second-stage: DV = Entrepreneurship productivity			
	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5	Model 1.6
Constant	−20.008*** (2.869)	2.394*** (0.258)	2.452*** (0.254)	2.568*** (0.208)	2.458*** (0.278)	2.548*** (0.233)
Population	3.734* (1.728)	−0.372*** (0.089)	−0.347*** (0.102)	−0.344*** (0.100)	−0.348** (0.108)	−0.339** (0.109)
Population growth	0.088 (0.597)	−0.033 (0.092)	−0.025 (0.091)	−0.017 (0.090)	−0.025 (0.089)	−0.013 (0.086)
GDP growth	−0.307 (0.461)	−0.162*** (0.040)	−0.154*** (0.036)	−0.133** (0.046)	−0.154*** (0.037)	−0.132** (0.045)
Inflation	−0.097 (0.573)	0.278 (0.187)	0.262 (0.201)	0.236 (0.187)	0.265 (0.203)	0.222 (0.187)
Informal economy size	−0.050 (0.415)	−0.153* (0.070)	−0.160* (0.067)	−0.168** (0.063)	−0.160* (0.067)	−0.170** (0.061)
Unemployment rate	0.322 (0.709)	−0.154* (0.071)	−0.149* (0.071)	−0.144* (0.068)	−0.150* (0.072)	−0.142* (0.071)
Cost of starting a business	0.626 (0.985)	0.049 (0.164)	0.049 (0.168)	0.034 (0.172)	0.048 (0.163)	0.037 (0.168)
Judicial effectiveness	12.721*** (1.415)	−0.268* (0.105)	−0.281** (0.108)	−0.292** (0.102)	−0.282* (0.111)	−0.289** (0.106)
Fiscal health	1.775+ (0.969)	−0.026 (0.109)	−0.024 (0.110)	−0.017 (0.112)	−0.023 (0.108)	−0.019 (0.110)
Geographical distance	−3.577*** (0.676)					
Inverse Mills ratio		−0.033 (0.024)	−0.037 (0.024)	−0.044+ (0.023)	−0.037 (0.026)	−0.041+ (0.024)
Financial market efficiency (FME)		0.122 (0.106)	0.128 (0.106)	0.036 (0.079)	0.128 (0.107)	0.028 (0.078)
Labor market flexibility (LMF)		0.025 (0.043)	0.024 (0.042)	0.014 (0.047)	0.019 (0.097)	0.040 (0.097)
Inward FDI			−0.053 (0.096)	−0.129 (0.105)	−0.054 (0.092)	−0.131 (0.105)
Inward FDI × FME				0.077 (0.071)		0.084 (0.076)
Inward FDI × LMF					0.004 (0.052)	−0.019 (0.057)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Between R-squared	–	0.710	0.710	0.712	0.710	0.711

Note: $N = 341$.

Standard errors are reported in parentheses.

+ $p < 0.10$.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

entrepreneurship productivity in emerging markets.

In addition, Fredström et al. (2021) find that informal economy reduces the productivity of entrepreneurship, but this impact is mitigated by good governance. Because inward FDI crowds out informal activities in emerging markets (Zhang et al., 2010), the positive role of inward FDI in entrepreneurship productivity here is consistent with the negative effect of informal economy. Future research could investigate other factors that may discourage informal economic activities and accordingly promote entrepreneurship productivity. This study, thus, lays the foundation for further studies on the mechanisms among informal economy and entrepreneurship productivity. In addition, financial market efficiency and labor market flexibility are two key aspects of good governance. By distinguishing these factors rather than using an overall indicator of governance quality, we identify which kinds of institutions are more important. Future research can build on this study to clarify other specific institutional factors that may perform as important boundaries. For example, other dimensions of governance quality may be examined since there is significant variation in governance quality among emerging markets. Overall, this study contributes to the stream of literature identifying the antecedents of entrepreneurship productivity and therefore advances our understanding of this issue.

Second, this study advances our understanding of the implications of inward FDI from two aspects. This is one of the first studies to examine the impact of inward FDI on the quality of entrepreneurship, which contributes to drawing a more comprehensive picture of the FDI–entrepreneurship linkage. Prior literature has largely examined the effect of inward FDI on the quantity of entrepreneurship. Because the implications of entrepreneurship rely both on its quantity and quality, research should consider both factors to elaborate on the linkage of FDI with entrepreneurship (Chowdhury et al., 2019). This study goes beyond prior literature by examining the effect of inward FDI on entrepreneurship productivity, a good indicator for entrepreneurship quality in emerging markets, particularly under different financial and labor market conditions. We find that inward FDI improves entrepreneurship quality, but its impact depends on

financial and labor market conditions, revealing a more finely nuanced FDI–entrepreneurship linkage. In addition, we find that inward FDI does not significantly affect the quantity of entrepreneurship. Thus, we suggest that although inward FDI matters to entrepreneurship in emerging markets, its impact is more complex than prior studies indicated. Scholars must expand their perspectives to include both the quality and quantity of entrepreneurship and take key contingencies into account. Failure to consider the whole picture or to make a distinction between quality and quantity may miss important insights. Moreover, as entrepreneurship promotes economic growth, our findings contribute to illustrating how inward FDI can facilitate economic growth in emerging markets – through improving the quality of entrepreneurship rather than by increasing its quantity.

Further, this study contextualizes the impact of inward FDI in emerging markets. We find that the effect of inward FDI differs between emerging markets and developed countries, adding evidence in support of a distinction deemed important in the FDI literature (Inkpen et al., 2019). Scholars have argued that the implications of FDI vary between developed countries and emerging markets (Brandl et al., 2019). Previous studies have nevertheless focused on developed countries. By contextualizing the role played by inward FDI in emerging markets, we go some way toward remedying this oversight. Meanwhile, we conducted a test in which we find that inward FDI does not have comparable effects on entrepreneurship productivity in developed countries. Hence, this study offers additional support for the proposition that the value of inward FDI differs between emerging markets and developed countries. Overall, this study advances our understanding of the implications of inward FDI by showing that such implications both depend on country contexts (i.e., emerging markets vs. developed countries) and are contingent on key institutional factors (i.e., financial market efficiency and labor market flexibility).

Third, this study contributes to the comparative international entrepreneurship perspective. This perspective focuses on the wide variations in entrepreneurship across countries and argues that various institutional and economic factors representing the differences among countries are critical sources of the variations (Reuber et al., 2018; Verbeke and Ciravegna, 2018). Insofar as certain emerging markets benefit to a greater extent from entrepreneurship than do others, it has become vital from the comparative international entrepreneurship perspective to clarify factors that cause this variation (Reuber et al., 2018; Terjesen et al., 2016). This study finds that inward FDI and financial and labor market conditions can jointly influence the quality of entrepreneurship in emerging markets. Moreover, the joint effects are salient in emerging economies yet insignificant in developed countries. Since the value of entrepreneurship relies both on its quantity and quality, the latter is at least as important as the former (Stenholm et al., 2013; Ye et al., 2022). Hence, it is reasonable to suggest that some emerging markets generate higher-quality entrepreneurship and enjoy greater benefits. This study, as a result, sheds some light on the comparative international entrepreneurship perspective.

5.2. Managerial implications

This study posits at least two channels through which governments in emerging markets can leverage inward FDI to foster entrepreneurship. First, our finding of a positive impact of inward FDI on entrepreneurship productivity suggests that emerging market governments should devote time and resources to attracting FDI and leveraging it to improve the quality of entrepreneurship. While other institutional and economic factors are critical in improving entrepreneurship quality, such governments should leverage FDI as another enabler, which has been neglected in the previous literature. Second, both financial market efficiency and labor market flexibility are instructive for leveraging inward FDI to improve entrepreneurship productivity. Hence, those governments also need to increase the effectiveness of financial markets and the flexibility of labor markets. This way, the effect of FDI is strengthened resulting in synergy.

5.3. Limitations and future directions

This study is subject to some limitations that also highlight opportunities for future research. First, our data is limited to 67 emerging markets during 2002–2018. Future studies should include other countries and longer time spans to ensure the generalizability of the findings. Second, this study uses entrepreneurship productivity to reflect the quality of entrepreneurship. Other factors, such as the innovativeness of opportunities pursued by entrepreneurs, can be taken as alternative indicators for entrepreneurship quality. Third, additional moderators, especially those indicating other key market conditions (i.e., product market flexibility) and institutional quality (e.g., state fragility), should be tested (Ault and Spicer, 2014). Scholars could also explore the complex but important roles of informal institutions, as these are rarely tested. Fourth, this study takes a macro approach, in a design that is not best suited to identifying underlying mechanisms. There is likely much insight to be gained by exploring the micro-foundations of the relationships demonstrated here. It is vital to explore firm-level attributes that may impact how firms in emerging economies benefit from FDI in fostering high-quality entrepreneurship. Both important processes and the roles of key people are worthy of examination to unlock the black box between FDI and entrepreneurship quality. Fifth, because entrepreneurship productivity contributes to economic growth, it may be a critical channel through which inward FDI promotes growth in emerging markets. Future studies may examine its mediating impact on the linkage between FDI and economic growth. Sixth, this study finds that the implications of inward FDI differ between developed countries and emerging markets. Future studies could pursue this question further to explain in detail why it is the case. In so doing, the exploration of the roles played by country context contributes to the comparative international entrepreneurship perspective. Lastly, we have endeavored to establish causality by controlling for key relevant variables, including a one-year time lag between variables, and using instrumental variable estimation, but we cannot completely rule out endogeneity bias. Further studies may include more potential control variables, add a longer time-lag, adopt other instrumental variables, and leverage different methods, such as matching sample analysis and quasi-experiment, to further address this issue.

6. Conclusion

This study explores the impact of inward FDI on entrepreneurship productivity in emerging markets. Drawing on data covering 67 emerging markets for the 2002–2018 period, we find that inward FDI has a positive effect on entrepreneurship productivity in emerging markets and this effect is strengthened by both financial market efficiency and labor market flexibility. This study enriches our knowledge of the antecedents of entrepreneurship productivity and the implications of inward FDI. In addition, it sheds light on a vital question about the comparative international entrepreneurship perspective, that is, why some emerging markets benefit to a greater extent from entrepreneurship than do others. Moreover, this study informs governments in emerging markets how they can take advantage of inward FDI to enjoy the benefits of entrepreneurship.

CRedit authorship contribution statement

Zhongfeng Su: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Writing – original draft. **Jiatao Li:** Conceptualization, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Shihao Wei:** Data curation, Formal analysis, Methodology, Writing – original draft. **Zhan Wu:** Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing.

Data availability

Data will be made available on request.

Acknowledgments

Zhongfeng Su thanks the support from the Fundamental Research Funds of Xi'an Jiaotong University (SK2022129) and the Social Science Foundation of Shaanxi Province, China (2023R060).

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.intman.2023.101116>.

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