Location Choice of Chinese Outward FDI: An Ethnicity-based Population Ecology Perspective

ABSTRACT

Drawing on population ecology theory (PET) which conceptualizes an individual organization's survival as a result of organizational changes at the population level, we explain why multinational enterprises (MNEs) from emerging markets prefer to enter countries with an existing population of co-national peers. Our study of a sample of Chinese MNEs shows that the size of co-national MNEs population in the host country has a positive effect on new FDI entries by firms from the same home country. Interestingly, the co-province and co-industry-formed organizational population in the host country has an inverted U-shaped effect on the new FDI entries, and that provincial dialect and co-national immigrants flatten this curvilinear effect. We also analyze how the focal relationships vary between host countries with different levels of economic development and between different industries. Our study contributes to the research of FDI location choices by providing a population ecology-based explanation that differs fundamentally from those based on agglomeration economics and institutional theory. The study also advances PET by theorizing how legitimizing and competing forces interact to jointly influence the way the extant population of certain types of organizations influences the entries of the same type of organizations into the population.

Keywords: Outward FDI, location choice; Chinese firms; ethnicity-based population ecology; co-provincial population, co-industry population

1. Introduction

Many emerging-market multinational enterprises (EMNEs) have in recent years expanded into foreign markets by conducting outward foreign direct investment (FDI). However, these firms face daunting challenges in integrating into the host country due to liabilities of foreignness (LOFs) (Hymer, 1960; Johanson and Vahlne, 2009), country-of-origin (Moeller et al., 2013), and newness (Zahra, 2004). For example, the local government may impose strict regulations against EMNEs; consumers may associate low quality with their brands; local workers may be not inclined to work in these firms (Riddle and Brinkerhoff, 2011). These liabilities arise because MNEs originate from emerging countries and bear grave public stigmatization stemming from their poor international image and latecomer status, in addition to their general lack of proprietary technologies and market power (Bartlett and Ghoshal, 2000; Cuevo-Cazurra and Ramamurti, 2014; He and Zhang, 2018; Nuruzzaman, Singh and Gaur, 2020). As these LOFs are intrinsically linked with their lack of legitimacy in the eyes of the host country constituents (Kostova et al, 2020; Meyer and Rowan, 1977), EMNEs must consider not only how to compete with other firms but also how to address legitimacy challenges in the target country when they make location choices.

To gain acceptance of the local constituents, one stream of social network theory research has suggested that MNEs can leverage social networks to embed themselves into the local environment (Guo et al., 2018; Kulchina, 2017). As a type of social network, ethnic ties are weak kinships (Yang et al., 2011) that are defined as social connections among people sharing a common national background or migration experiences identity (Pruthi et al., 2018). It is argued that ethnic ties can create a sense of identity (Aldrich and Waldinger, 1990), secure legitimacy (Zhu et al., 2012), and

accelerate information and resource flows (Li, 2020). However, although Kim et al. (2020) highlight the importance of 'ethno-national ties' for international opportunity exploitation, we know little about how such ties help firms overcome the various liabilities and attainment of legitimacy in the host country.

This study aims to address this gap by examining how the presence of co-national firms in a host country as 'ethno-national ties' influences FDI entries by firms from the same home country. We invoke population ecology theory (PET) from sociology to underpin our theoretical development. Drawing on insights from the domain of ecology (Hannan and Freeman, 1989), the PET postulates that organizational changes occur at the population level through joint legitimizing and competing mechanisms (Carroll and Hannan, 1989b). The PET offers certain advantages over theories such as institutional theory and agglomeration economics that are widely used in the location choice literature. While institutional theory suggests that firms co-locate with others from the same home country to increase legitimacy in the host country (DiMaggio and Powell, 1983; Henisz and Delios, 2001), it offers little explanation about why competition between co-national firms in the host country may deter potential entries by compatriot firms. On the other hand, agglomeration economics can explain the economic rationale of agglomerating into a country with clusters of firms from the same industry (e.g., lower cost, learning, and spillovers) (Chung & Alcácer, 2002; Head et al, 1995; Marshall, 1920) and why increased competition in the agglomerated population may force firms to de-agglomerate, it cannot explain why firms tend to agglomerate, particularly with compatriot firms in the host country. By contrast, the PET considers both legitimizing and competing forces that operate within the population of co-national firms in the host country and how these forces interact to jointly affect FDI entries by compatriot firms.

Specifically, while co-locating with compatriot firms is conducive to gaining legitimacy and acceptance by the societal constituents in the host country, competing forces may also emerge strongly as the population of co-national firms grows, and hence influence the potential entries by compatriot firms.

Our analysis based on a sample of Chinese EMNEs for 1990 and 2014 makes two distinct contributions. First, it extends the location choice literature by proposing a population ecology-based explanation of EMNEs' location choices. Drawing on theories such as agglomeration economics and institutional theory, the extant location choice literature suggests that attributes of a country such as the presence of other FDI firms and institutional development of a country influence whether an MNE chooses the country as its FDI location (Chang and Park, 2005; Wu et al., 2016). Despite such insights, we still know little about why many EMNEs choose FDI locations with a large population of co-national firms. We draw on PET to address this gap in the literature. We show that the existing population of co-national firms in the host country has a positive effect on the FDI entries of firms from the same home country, yet the relationship between the size co-provincial population and the FDI entries by firms from the same home province develops into an inverted U-shaped one. The same is true for the relationship between the co-industrial population size and FDI entries by firms from the same industry. By taking the lens of the PET and paying attention to social factors, we move beyond the conventional explanations of EMNEs' location choices that focus largely on the role of economic and institutional factors (Buckley et al., 2007; Duanmu, 2012; Li et al., 2018; Tang & Buckley, 2022).

Second, we shed light on the contingent nature of the inverted U-shaped relationship between co-provincial or co-industrial populations and the number of new FDI entrants from the same home

province or industry. Specifically, we theorize and show evidence that a higher degree of the dialect of a province flattens the inverted U-shaped relationship between the co-provincial population and FDI entries by firms from the same province and that a higher degree of co-national immigrants flattens the inverted U-shaped effect of co-industrial population size on new home-country FDI entries from the same industry. As prior studies have under-theorized such contingent factors as dialect and immigrants (Buckley et al., 2007; Hernandez, 2014; Shukla and Cantwell, 2016), our study helps understand what factors influence the relationship between the presence of co-national population of firms in the host country and new FDI entries joining the population from the same home country and thus provides a more nuanced understanding of this relationship.

2. Theoretical background

2.1 Population ecology and EMNEs' location choice

Population ecology theory explains how organizational populations change and develop over time through the stages of founding, growth, transformation, decline, and death (Hannan and Freeman, 1977, 1989). Population in this theory is defined as a group of organizations that live in the same environment and share certain commonalities. The theory suggests that organizational change occurs at the population level which influences an individual organization's survival through a process of organizational selection and replacement (Hannan and Freeman, 1977; Hannan et al., 1990). The theory shifts the analytic frame from a single organization to the entire organizational population and therefore is particularly suitable for explaining group behaviors (Hannan and Freeman, 1977). Scholars have applied PET to organizational research, exploring the

process of the birth, growth, and extinction of organizations through “natural selection” (Baum and Shipilov, 2006; Freeman et al., 1983).

At the heart of PET is the density dependence model. The model suggests that the mortality rate of an organizational population depends on the number of organizations in the population (Hannan and Carroll, 1992). It envisages competition and legitimation as two driving forces shaping population density (Carrolland Hannan, 1989b). According to this model, when a population starts to take shape and grow, outside organizations tend to join the population to obtain legitimacy and knowledge spillovers. However, as the number of new entrants and therefore the size of the population increases beyond a threshold, organizations within the population will have to compete for scarce resources. At this stage, the competition effect increases, and the legitimacy effect will start to decrease. As such, the population growth rate tends to follow an inverted U-shaped curve (Gómez et al., 2014; Greve, 2002).

The PET is an appropriate lens to investigate how a population of co-national firms in a foreign country affects new FDI entries of EMNEs of the same nationality into the same host country. As discussed earlier, EMNEs suffer from liabilities of foreignness, country-of-origin and newness. These liabilities create challenges for these firms to attain legitimacy in the host country (Meyer and Rowan, 1977). Accordingly, EMNEs have to take various legitimacy-seeking actions to address these challenges (Salomon and Wu, 2012). One way to do so is to join the existing population of co-national firms in the host country. This enables EMNEs to reduce the reputational hurdle associated with their home country origin and latecomer status (Yamakawa et al., 2008). By agglomerating with co-national firms in the host country, EMNEs can also overcome liabilities of newness. However, according to PET, as the size of the co-national population increases beyond

a certain threshold, competition among firms in the population will intensify and, as a result, fewer compatriot firms will join the population. Thus, given that PET can account for the role of both legitimizing and competing forces that operate in an existing organizational population (Hannan and Carroll, 1992), it is particularly suitable for explaining how the presence of co-national firms in the host country influences the entry of home country EMNEs.

2.2 Country-of-origin agglomeration

MNEs tend to be geographically closer to other MNEs from the same home country when they expand overseas (Tan and Meyer, 2011), creating a country-of-origin agglomeration effect. Country-of-origin-formed population differs from industrial FDI agglomeration. With industrial FDI agglomeration, firms cluster to seek economic benefits (i.e., through sharing industry-specific knowledge and resources) that can compensate for individual firms' weak capabilities (Marshall, 1920; Krugman, 1991). By contrast, with country-of-origin formed population, firms conduct FDI in countries with a large population of their home country peers because this location strategy helps overcome liabilities of foreignness and newness, and consequently facilitates the attainment of legitimacy (Wang et al., 2022). By joining the population of co-national firms, EMNEs can benefit from the 'legitimacy spillover' generated by early compatriot entrants (Kostova and Zaheer, 1999) and learn from these firms about how to attain legitimacy in the host country.

Similar to industrial FDI agglomeration, country-of-origin-formed agglomeration also creates economic benefits by enhancing learning and knowledge acquisition in the host country market. Shared culture, norms, and language help facilitate learning of knowledge about the host country market which is critically important for EMNEs that suffer from liabilities associated with country-of-origin and latecomer status. Co-nationality creates a foundation of trust and sentiment due to a

shared cultural heritage that in turn facilitates knowledge sharing (Chang and Park, 2005; Lin, 2001). The knowledge provided by co-national firm clusters is often tacit and is predominantly about how to adapt to local culture and institutions, which can hardly be obtained or learned from local firms. Empirical evidence shows that the agglomeration of MNEs based on ethnic affiliation is an important channel for new entrants to acquire societal knowledge in the host country and increase their chances of survival (Miller et al., 2008).

3. Hypotheses

The importance for MNEs to attain legitimacy in the host country has long been highlighted in the FDI literature (Dunning, 1993). Yet the attainment of legitimacy for a new entrant is challenging because it involves a complex process of interactions between social, cognitive, and bounded rationality factors. We argue that joining co-national organizational population in the host country can help address some of the legitimacy challenges. According to institutional theory, organizational legitimacy is intrinsically associated with culture and cognition (DiMaggio & Powell, 1983) and/or actors' identifications within a community (March and Olsen, 1976). The existing population of co-national firms can be considered a community that embeds certain social ties, values and shared identities among community members. When an MNE establishes its subsidiary in a foreign country, local stakeholders usually use heuristics to simplify judgments about it from easy-to-observe attributes (such as its country-of-origin). The perceived value or utility of organizations emanating from the home country leads to the country-of-origin effects that significantly influence the attainment of the legitimacy of co-national firms (Balabanis and Diamantopoulos, 2011). The legitimacy of the co-national population is conducive to creating a

general social environment for its members, and hence encourages the emergence of new organizations into the population (Hannan & Carroll, 1992; Hannan & Caroll, 1989; Morin, 2020). Furthermore, potential entrants tend to use the feedback of other firms in the same category as a reference for their decision about whether to enter the population in the host country. MNEs that make location choices for a new FDI project likely follow suit of their co-national pioneers. As the members of the co-national population have already been operating in the host country and attained some level of legitimacy, new entrants will benefit from legitimacy spillovers from the existing co-national firms (Lieberman and Asaba, 2006).

In addition, knowledge plays a central role in the foreign expansion process (Meyer et al., 2009; Tan and Meyer, 2011) because foreign firms, as outsiders, need it to overcome all kinds of LOF associated with institutional and cultural distances, which are sensitive and tacit (Daude and Fratzsche, 2008; Zaheer, 1995). According to the concept of communities of practice (Brown & Duguid, 2001), joining the communities of compatriot firms can facilitate the acquisition and assimilation of tacit knowledge about local culture and market. Interactions among co-national firms in foreign localities can help newcomers settle down and accelerate their process of integration into the local business environment. Co-nationality can help overcome the difficulties in knowledge diffusion between firms in the host country market because knowledge owners are more willing to pass on local tacit knowledge to firms originating from the same home country. In terms of the effectiveness of assimilation, common knowledge can facilitate the transfer of tacit knowledge because firms can communicate smoothly through a "common code" (Arrow, 1974; Kogut and Zander, 1992). Thus, knowledge is more likely to be assimilated within a close-knit group that shares a common set of values and languages (Katz and Kahn, 1966; Nahapiet and

Ghoshal, 1998).

According to the discussion above, we propose:

Hypothesis 1. The size of the co-national firm population in the host country has a positive effect on the new FDI entries by firms from the same home country.

Firms originating from the same geographic area are sentimentally closer and more prone to be connected due to shared culture and growth experiences. “Hometown” is a unique and important nostalgic concept in Chinese society. It is rooted in rural areas where the majority of Chinese ancestors lived and has been passed on from generation to generation. The differences in cultural customs between different areas within vast areas of China make people attach significant sentiments to their hometowns (e.g., a province or a city) and each hometown operates as a society. The Confucian tradition based on "Guanxi" leads individuals from the same town to feel more ethically obligated to take care of each other (Liang, 1949). These feelings become particularly strong in places such as foreign countries. Therefore, similar to a co-national organizational community, a co-provincial organizational community can be regarded as an organizational ecology. Besides the benefits of legitimacy spillover, knowledge diffusion, and altruistic behaviors stemming from homophily, as elaborated in H1, a co-provincial organizational community in the host country may attract firms from the same province in the home country for several additional reasons below:

First, the inherent trust between co-provincial firms can help newcomers become “insiders” in the host country. Newcomers, who are regarded as “outsiders” find it difficult to develop local business partners due to a lack of credit in the local market. Influenced by Confucian ethics,

Chinese people attach great value to relationships formed based on blood and geography; the latter is even deemed as an expansion of kinship or socialized geography. Ethnic associations constitute the specific corporate advantage of Chinese MNEs (Braeutigam, 2003; Erdener and Shapiro, 2005), because they not only generate legitimacy legacies, but also help disseminate tacit knowledge, lower transaction costs, and share local networks in the host country. Moreover, since extant co-provincial firms can easily check credit records of new entrants from the same home province, the transaction costs associated with doing business with provincially homogeneous newcomers will be lower. More importantly, these new entrants are more likely to be accepted as insiders into the population that facilitates their entry and settlement in the host country.

Second, the established co-provincial firms in the host country can also act as a "referral" to third parties. The trust and solidarity arising from a shared subculture, or even clan, can help newcomers from the same home province gain access to local market resources and key stakeholders, such as venture capital, local government, or union leaders and employees (Prashantham et al., 2015), and endorse guarantees for contract enforcement or dispute resolution (Huang et al., 2013). These associations with local players enhance newcomers' legitimacy in the eyes of home country partners (Brown and Bell, 2001).

Third, provincial-level connections, guidance and support for FDI may lead to convergent locational choices of co-provincial FDI projects. Due to regional heterogeneity of economic development and policy, the ways to promote OFDI may differ significantly among Chinese provinces. For example, some provincial chambers of commerce provide services for firms to expand into foreign markets, while other provincial chambers focus on services for firms' domestic businesses only. Although provinces are theoretically subservient to the central government,

provincial governments have considerable discretion regarding OFDI policy and the allocation of resources (Gao and Hafsi, 2015; Wang and Liu, 2020) that may influence firms' internationalization strategy. Moreover, each province has officially endorsed outward FDI guidance agencies, which provide potential investors with professional instructions through training and conferences (Li et al., 2018). Accordingly, we suggest that firms from the same province within China likely make similar location choices for OFDI.

However, despite the above reasoning, we suggest that the relationship between co-provincial population size and the number of new entrants from the same province is likely to be curvilinear. The social relationships fostered within the co-provincial population likely become less important after the size of the population reaches a threshold level (Carroll and Hannan, 1989a; Peng, 2003). Ethnic ties, as a type of social network, may gradually become less efficient in facilitating businesses as competition between home-country firms within the population intensifies (Huang et al., 2013). In other words, with the increasing reliance on the same pool of resources exceeding the available resources, the competitive pressure will surpass the legitimacy and cooperative benefits in a high-density environment (Miller and Eden, 2006; Miller et al., 2008). Moreover, as time goes by, the innovative capability of members may fade because of organizational inertia and convergence, such that imitative behavior reduce the advantages that a new entrant enjoyed initially when joining the population. Hence, when the density of the co-provincial population is low to medium, the benefits of legitimacy are likely to be greater than the drawbacks of competitive pressures on members of the population. However, such benefits will reduce as the size of the population further increases, disincentivizing firms to enter this population. Accordingly, we propose:

Hypothesis 2a. The relationship between the size of the co-provincial population in the host country and the new FDI entries from the same home province will develop into an inverted U-shaped relationship.

Language serves as a bridge between people and affects the psychological distance between them. Marschak (1965) found that language can reduce the uncertainty of activities that require interpersonal interactions. Intuitively, people who use the same language will feel closer to each other due to the similarity they feel to each other. They either share common topics or have mutually acceptable ways of communication, which can help eliminate trust barriers.

Dialects are a communication tool for people in a specific geographic area. Dialects with important local characteristics are a manifestation of regional heterogeneity, and thus represent a key feature of different ethnic groups and identifications (Pendakur and Pendakur, 2002). People who use the same dialect tend to share similar knowledge and experience of each other's history, culture and life background. The shared background allows members of the population to communicate more effectively and facilitate~~s~~ experiential learning and knowledge transfer.

Although Chinese is a unified written language and has an official Mandarin pronunciation, many subnational regions within China have their own dialects, due to the sheer size of the population and geographical area of the country. To a large extent, dialect is an intrinsic requirement for entering an existing population and is a unique and exclusive resource for a member to communicate with others within the population. Hence, we suggest that firms from the province with the same dialect are more likely to make similar location choices with their peers

when they conduct OFDI in foreign markets. In such cases, although the new entrants-pulling effect of the co-national population may start to decline once the size of the population is beyond a threshold level, this effect will become less significant for host countries with a large co-provincial population that is characterized by a high degree of dialect; in other words, these countries can still attract firms from the same home province, even though the competition effect increases as a result of the co-provincial population growth. This is because a higher degree of the dialect of a province can ameliorate the competition effect and, thus, new entrants can still benefit from legitimacy spillovers and knowledge exchanges, given the decelerating effect of the competition.

Hypothesis 2b. The competition mechanism underlying the inverted U-shaped relationship between the size of the co-provincial population in the host country and new FDI entries from the same home province (asserted in H2a) will be weakened by the degree of the dialect of the focal province.

To reduce uncertainty and cost, firms in the same industry tend to exhibit imitative behavior (Henisz and Delios, 2001) when they expand into foreign markets. These imitative behaviors can be interpreted from economic and legitimacy perspectives. From the agglomeration economics perspective, the geographical concentration of firms from the same industry has a positive external effect on other firms (Porter, 1990). The co-location of firms sends an investment signal for other firms; that is, this location is a suitable investment place for similar firms in terms of attributes such as a large pool of suppliers, customers, or employees (Glaeser et al., 1992; Marshall, 1920).

Moreover, MNEs tend to co-locate because interactions among specialized firms, workers, and suppliers lead to a proliferation of ideas that give rise to knowledge spillovers (Chung and Alcácer, 2002) that help new MNEs to learn and integrate into the host country.

From the legitimacy perspective, EMNE decision-makers tend to recognize the behavior and feedback of other organizations in the same category as a point of reference for decision-making regarding entry into the population. Moreover, the international expansion of peer firms in the local market will increase the cognitive legitimacy of such actions, thereby reducing business uncertainty. The FDI activities of companies in the same industry can stimulate other companies to mimic investment strategies (e.g., entry time, country, region selection, and entry mode selection), helping overcome operational impediments caused by the incompatibility of local institutions.

However, although industry agglomeration can indeed attract other firms to the location, this effect may start to decline when the level of the agglomeration is beyond a threshold. This is because similar organizations may have similar structures and strategies and rely on similar resources. This in turn will reduce the benefits of imitation (Hannan et al., 1990, 1991; Haveman, 1993) and agglomerative clustering. Instead, as the number of firms in the same industry and location increases, competition among these firms will increase. In such cases, the benefits of legitimacy spillovers are likely to be less important compared to the competitive pressures that the large population causes for new entrants. Therefore, we propose:

Hypothesis 3a. The relationship between the size of the co-industrial population in the host country and new FDI entries from the same industry of the home country will develop into an

inverted U-shaped relationship.

Overseas Chinese are considered to have made important contributions to Chinese firms' integration into the world economy (Ng and Tuan, 2002). The social relationship between overseas Chinese people and Chinese MNEs in the same host country can directly or indirectly link firms and individuals in the network (Buckley et al., 2007). This in turn facilitates Chinese MNEs' entry into the host country and lowers their transactional and operational costs in the host country market (Chung and Tung, 2013; Dunning and John, 2002). This kind of "relationship asset" not only compensates for the liabilities of foreignness faced by Chinese MNEs' entering the international market (Buckley et al., 2008) but also alleviates the competition within the inter-organizational population. Therefore, we suggest that the presence of co-national immigrants in the host country can help neutralize the competition effect underlying the inverted U-shaped relationship between the co-industrial population and new entrants.

First, co-national immigrants form an information exchange network that facilitates new entrants' understanding of the host country market. Although LOFs create barriers for MNEs to learn uncodified knowledge from the host country market (Granovetter, 1985), co-national immigrants, as an informal but important potential source of tacit knowledge, can help overcome such LOFs and facilitate knowledge sharing (Hernandez, 2014). For example, the transfer of location-specific knowledge by immigrants can help MNEs solve asymmetric information problems that hinder cross-cultural investments (Levitt and Jaworsky, 2007). Hence, the presence of co-national immigrants reduces the new entrants' need to seek knowledge spillovers from the co-industrial population in the host country. The competition effect arising from the increased co-

industrial population will be neutralized.

Second, co-national immigrants are likely to be more familiar with the co-national firms based on their knowledge of these firms' reputation in their home country and can therefore become their important customers (Hernandez, 2014). Moreover, co-national products may still bear a particular functionality to capture the preferences of co-national customers, thus becoming an additional market for these firms. Rangan and Sengul (2009) found that MNEs have higher sales if their home and host countries share strong historic immigration ties. Therefore, the larger the ratio of the immigrant population, the more potential market co-national firms can utilize. This in turn reduces the need to resort to resource pools via co-national or co-industry connections, thereby postponing the unfolding of the stage where the competition effect starts to overweigh the legitimacy effect within the organizational population.

Finally, co-national immigrants can also be employees of co-national firms due to their shared culture and traditions. As common culture and tradition act as typical homophily, co-national employees can understand culture-related business practices of the host country from the same perspective as co-national firms, thus helping these firms reduce transaction and operational costs in the host country market. For example, it is normal for Chinese supervisors or colleagues to contact colleagues via real-time (informal) personal social media (i.e., WeChat) instead of (formal) emails to obtain instant feedback. However, local employees, especially those in Western cultural settings, may prefer formal ways of communication (e.g., via emails), using company-based tools. In such cases, co-national immigrants in the workplace can be a desirable pool of labor resources compared with indigenous employees, helping mitigate operational risks. Thus, as co-national immigrants will help them settle down and integrate into the local networks, MNEs are likely to

choose FDI locations with a large presence of co-national immigrants (Hernandez, 2014; Rangan and Sengul, 2009). Therefore, we suggest that a higher ratio of Chinese immigrants in the host country facilitates new entrants' embedment into the host country, resulting in less reliance on the existing co-industrial organizational population and lower competition among members within the population. Accordingly, we propose:

Hypothesis 3b. The competition mechanism underlying the inverted U-shaped relationship between the size of the co-industrial population in the host country and new FDI entries from the same industry of the home country (asserted in H3a) will be weakened by the degree of the co-national immigrants.

4. Method

4.1 Data source

The main sources of data for this study are *the China Outward Investment Enterprise Directory (COIED), Statistical Bulletin of China's Outward Foreign Direct Investment*, and other major international NGO databases. *COIED* is compiled by the Minister of Commerce of China and it provides information such as firm names, dates of conducting FDI, and destination of the FDI for 1990 and 2014. However, this database does not provide detailed information about transactions of their FDI and the sizes of firms, which limits our ability to examine our research questions at the firm level. The data on the frequency of investment was extracted from the 27,156 records of the COIED, which were further screened using two benchmarks. We eliminated the "customer-following" type of projects—MNEs conduct FDI to follow their customers which invested in the

same host country earlier. These projects were likely to be the "derivatives" of the firm's core businesses, the decision of which was not made due to the presence of other co-national firms' operating in the same host country but were solely based on the business needs of the investing firms. Therefore, we deleted the projects with motivations, including "after-sale service" and "consultant service" in the directory.

We collected industry and geographic information of the firms recorded in the *COIED*, since COIED does not contain firm-level information. To maximize the size of the sample, we merged the *COIED with the Wind* and *the Resset* databases, with the former providing information on companies listed in the Shanghai and Shenzhen stock market, and the latter reporting information for firms in the over-the-counter (OTC) market. The combination of the three databases creates a sample of 3,979 FDI projects. From an industry perspective, the Chinese classification of industry differs from the Standard Industrial Classification (SIC). According to the Chinese industry classification, these projects are categorized into 19 industries.[1] Geographically, these projects are from 25 provinces (out of 31 provinces)[2]of China and flow to 59 destinations worldwide.

To test our hypotheses, we built three samples: (1) a nationality-based population sample containing 705 valid destination-year observations, (2) a province-based population sample containing 17,325 valid destination-province-year observations, and (3) an industry-based population sample containing 13,167 valid destination-industry-year observations.

[1] Extractive industry, Food processing, Textile, Wood furniture, Chemistry, Medicine, Metal, Mechanical, Electronic, Papermaking, Manufacturing (other), Electric gas water utility, Construction, Wholesale and retail, Transportation, storage and postal service, Information transmission, Software and information technology service, Financial, Real estate, Leasing, and Business services.
[2] Shanghai, Yunnan Province, Inner Mongolia Autonomous Region, Beijing, Jilin Province, Sichuan Province, Tianjin, Anhui Province, Shandong Province, Shanxi Province, Guangdong Province, Guangxi Zhuang Autonomous Region, Xinjiang Uygur Autonomous Region, Jiangsu Province, Jiangxi Province, Hebei Province, Henan Province, Zhejiang Province, Hubei Province, Hunan Province, Gansu province, Fujian Province, Liaoning Province, Chongqing, Shaanxi Province, Heilongjiang Province.

4.2 Dependent variables

To test our hypotheses, we use three different dependent variables. The first dependent variable is new FDI entries from the same home country *(Odi1)*. It is measured by the aggregate frequency of annual Chinese OFDI projects to each host country *i* in year *t*. The frequency is counted project by project from the records of *COIED.*

The second dependent variable is new FDI entries from the same home province *(Odi2)* It is measured by the aggregate frequency of annual Chinese OFDI projects undertaken by firms with headquarters located in the same home province *k* in year *t*. The third dependent variable is new FDI entries from the same home industry *(Odi3)*. It is measured by the aggregate frequency of annual Chinese OFDI projects coming from the same home industry *k* in year *t.*

4.3 Independent variables

Corresponding to the three dependent variables, three different independent variables are constructed. The first is the *existing co-national population size* in the host country. It is measured by the aggregate number of Chinese projects in the host country *i* before year *t*. It reflects the size of the population of firms coming from the same home country. The second independent variable is the *existing co-provincial population size* in the host country. It is defined by aggregating FDI projects of firms from province *k* to host country *i* before year *t.* It reflects the number of firms whose headquarters are located in the same home province. The third independent variable is the *co-industrial population size* in the host country. The variable is measured by adding all investment projects of firms from industry *k* to host country *i* before year *t.* It reflects the size of the population of firms that come from the same home country and operate in the same industry. The data for this

variable is obtained by matching the *COIED* and *Resset* databases. For convenience, the three independent variables – *existing co-national populations size*, *existing co-provincial population size*, and *existing co-industrial population size* are expressed by *Size1*, *Size2* and *Size3* correspond to *Odi1*, *Odi2* and *Odi3*, respectively. We lagged all independent variables by one year to account for the fact that some of these effects take some time to materialize. This exercise also helps to reduce the concern for endogeneity concerns and simultaneity bias (Aitken and Harrison, 1999).

4.4 Moderators

The variable *dialect* depicts the degree of dialect distribution of the province where the headquarters of the subsidiaries are located. We collect the data from China Dialect Map by Chinese Research Data Services, covering the distribution of dialect down to the city level. Hence, three types of provinces are classified at the province level: (1) a province is coded as 0 if it does not have any dialect (named as the *mandarin province*); (2) a province is coded as 1 if it has a mixed distribution of both mandarin and dialect (named as an *in-between province*), i.e. some cities have dialect (no more than 90%) and others do not; (3) a province is coded as 2 if the majority (more than 90%) of its cities are dialect-speaking areas(named as *dialect province*), is denoted as 2. In total, we have 10 *mandarin provinces*, 11 *in-between provinces*, and 4 *dialect provinces*. We also further observe the 11 in-between provinces to make sure there are no extreme cases (such as extremely low or high degree of dialect).

The variable *Immigrant (Immigrant)* represents the ratio of Chinese immigrants to the host country's population. Both immigration and population data were collected from *the Population Division of the United Nations*. We used the ratio between Chinese immigrants and the total population of the host country *i* as a proxy for the degree of the importance of local Chinese

immigrants. As the data are reported on a 5-year basis, we filled in the missing data by computing the annual compound growth rate. The ratio of home-country immigrants to the total local population does not only represent the quantity but also the social importance of immigrants in the host country. We used a three-year lagged ratio of immigrants to reduce the aforementioned endogeneity concerns (Foad and Hisham, 2012) and also account for the fact that it takes time for immigrants to integrate into the local environment and establish their socio-economic status before they can become mature enough to provide valuable knowledge to potential entrants from their home countries.

4.5 Control variables

Institution distance (Ins_dis) was collected from the political risk index provided by the *International Country Risk Guide* of the *Political Risk Services* (*PRS Group*), which is a series of indices that cover six political and institution-related facets: (1) voice and accountability, (2) political stability and absence of violence, (3) government effectiveness, (4) regulatory quality, (5) rule of law, and (6) control of corruption. The variable is constructed first by taking the average of all indices of country *i* for each year, and then we used China's index of the same year to deduct the index of country *i* to calculate the absolute value of the institutional distance between the home and host countries.

Culture distance (Cul_dis) was measured using the five dimensions of culture (Hofstede, 1980), and the calculation of cultural distance is consistent with a previous study by Kogut and Singh (1988). Data on the cultural level of each country were extracted from the Hofstede cultural website (http://www.geerthofstede.com/).

Host-country openness (IFDI) was measured by the ratio of inward FDI to GDP. This variable reflects a host country's attractiveness and openness to foreign capital. The data were from the UNCTAD database.

The asset-seeking FDI *(patent)* intends to tap into countries with abundant knowledge and expertise to create, sustain, or maintain their competitive position (Dunning, 1993). We gauged the propriety assets of host countries by using the logarithm of the annual patent granted (residents plus non-residents) of an economy by the World Intellectual Property Organization.

Natural resources (Resource) can attract investments that exploit immobile natural factor endowments. To capture the resource-seeking motives of MNEs, we included a variable that is defined as the ratio of fuel export to merchandise exports in a country. Ores and metals (i.e. mineral fuels, lubricants, and related materials) comprise the resources in SITC Section 3. The data were extracted from the World Development Indicators by the World Bank.

Bilateral investment treaties (BIT) are agreements concluded between two countries to protect and promote bilateral investment flows. The BIT information was extracted from the Ministry of Commerce of the People's Republic of China website. In the case where a country has already reached the BIT agreement with China before the specific year under observation, the BIT variable is treated as 1; otherwise, it is 0.

Geographical distance (Distance) has always been an important factor influencing FDI (Tinbergen, 1962). The variable was captured by the GeoDist database published by CEPII, which provides bilateral distances between the capitals of home-host countries.

The quality of *home country FDI institutions (Ins_home)* reflects the degree of government support for trade and investment, which is an important factor influencing outward FDI in

emerging countries (Buckley et al., 2011). The data were extracted from the sub-index of "Trade Freedom", under the branch of "controls of the movement of capital and people," measuring home country institutional attitudes toward liberalization on OFDI. The higher the index, the higher level of freedom in international capital movement will be. The data are obtained from the *Fraser Institute's Annual Economic Freedom of the World Report*.

4.6 Estimation method

As the dependent variables are count variables, which are both discrete and nonnegative, the ordinary least squares (OLS) method may lead to biased results. Thus, an econometric model based either on the Poisson probability distribution or negative binomial distribution should be used to address this. However, as the variance is greater than the mean, the negative binomial regression (NBR) is more appropriate for over-dispersed data. In our case, the variance of the dependent variables is greater than the mean because the observations are unexpectedly large or small. To correct this, NBR is arguably the prime estimation approach.

To further confirm this, the econometric model implements *the likelihood ratio test* of alpha. If alpha equals zero, the model is reduced to a simpler Poisson model. If alpha is significantly not equal to zero, the negative binomial model is a better choice. In our estimation, alpha is significantly different from zero in all models. Therefore, the negative binomial regression is applied.

Given that the independent variables of both the province and industry population are strictly defined in three dimensions, many zero observations exist.[3] Theoretically, if there are many zeros

[3] Specifically, the percentage of 0 observations of independent variables on the co-nationality level, co-province level, and co-industry level is 5%,75% and 70% respectively.

in the outcome variable data, a zero-inflated negative binomial regression (ZINB) model should be considered. The ZINB model assumes two groups of observations. First, the *always-zero group* consists of observations that do not have the opportunity to have a non-zero count; the probability of the outcome being 0 is 1. Second, the *not-always-zero* group consists of observations that can have a non-zero count (can be any count). The first stage of the model is a binary logit model that predicts whether Chinese MNEs, Chinese MNEs with co-located headquarters, or whether Chinese MNEs in the same industry will invest in these destinations at all—in other words, it predicts the probability of observing a destination with no Chinese investment. The second regression model predicts the number of expected event counts of non-zero observations.

5. Results

5.1 Descriptive statistics

Table 1A presents the correlation matrix of the first model set (national-level), and Table 1B is the correlation matrix of the second and third model sets (provincial and industrial-level, respectively). As the control variables are the same in each set, we do not report them in Table 1B. Table 2 reports the descriptive statistics of the variables used in the three model sets. We calculated the variance inflation factors (VIF) to investigate the existence of multicollinearity. The maximum VIF obtained is less than 3, indicating that multicollinearity is not a serious concern in our models.

Insert Tables 1 and 2 about here.

5.2 ***Hypothesis test results***

As explained above, we use a two-stage model to test our hypotheses. In the first stage, the ZINB model estimates the probability that there is no previous FDI in the destination country; in other words, it predicts the count when the population size was 0. In the second stage, the standard negative binomial model based on non-zero population size will be estimated.

Table 3 presents the results. While Model 1 includes control variables only, Model 2 adds the co-national organizational population size to it. The coefficient of *Size1* is significantly positive at p<.01 level, indicating the existence of country-of-origin effect. Hence, H1 is supported.

Insert Table 3 about here.

Two samples are constructed to test the effects of different types of organizational populations in the host country on the number of new entrants from the same home country. Hypotheses 2a and 3a predict the inverted U-shaped impact of co-provincial and co-industrial firms' concentration on new entrants into the host country. The results of which are shown in Tables 4 and 5 respectively. The LL values of all models are significant at $p<.01$, indicating that the fitness of the models is good. Moreover, the 2LL values from Models 1–2 also changed significantly, showing that the entry of the linear and quadratic terms can improve the model performance. In every Model 2 of Tables 4 and 5, the coefficient of the linear term of the population size is significantly positive ($p<.01$), while its quadratic term is significantly negative ($p<.01$), displaying an inverted U-shaped

effect of population size, as predicted in H2a and H3a.

Model 3 of Table 4 shows the result of the moderating effect of dialect on the relationship between the co-provincial population and new FDI entries by firms from the same home province. The interaction between dialect and size square indicates how dialect moderates the net effects of the population size due to the joint forces of legitimacy and competition operating within the population. The coefficient of the *Dialect*B* is significantly positive (b=.026; p<.01), indicating that the degree of dialect can reduce the negative effect aroused by competition. Hence, H2b is supported. The two-way interaction item (Dialect*A) is a technical necessity to serve as the control for the effect of Dialect*B in the model. The coefficient of this interaction is significantly negative and there may be two reasons for this result. First, the convenience of communication can improve information symmetry on the knowledge of the host country, such that blind mimic FDI may be reduced. Second, the closer relationships between members can substitute for the extensity of relationships, and hence the population size plays a weaker role.

Hypothesis 3b predicts the moderating effects of overseas Chinese immigrants on the relationship between the industrial agglomeration in the host country and the number of new entrants. Model 3 in Table 5 shows that the coefficients of the interaction terms of immigrants and the quadratic terms of *Size* are significantly positive (b=.003; p<.05), while the two-way interaction term is slightly significant at $p<0.1$ level. The results suggest that Chinese immigrants can reduce the intensity of competition within the co-national population and increase the net effect of legitimacy within the population. Hence, H3b is supported.

Insert Tables 4 and 5 here.

We plotted the moderating effects of dialect and Chinese immigrants on the population density，shown in Figures 1–2, respectively. Figure 1 indicates that dialect can postpone the turning points of the co-provincial population and that the competition effect has not prevailed over the legitimacy effects in the population with dialect compared to the inverted U-shaped curve of the population without dialect. Figure 2 reveals that the downside of the inverted U-shaped curve is flatter for the group with higher immigrant levels, indicating fewer competition effects within the population compared with the lower immigrant group. The turning point was also postponed.

Insert Figures 1 and 2 here.

5.3 Robustness checks and further analysis

5.3.1 Robustness checks

We checked the robustness of our key results in three ways. First, as the dependent variables are expected counts of OFDI projects, we applied negative binomial regression (NBR) to our data. Second, we dropped the projects undertaken by firms from all service industries, which were more likely to follow the locations of their customers. Third, we ran our models using data from 2009–2014 only, when Chinese OFDI surged after the financial crisis. In all these cases, the results obtained are highly consistent with our main results. We also experimented to introduce a cubic term of the *Size* variable (*Size2 and Size3 respectively*) into the model. The coefficient of the cubic term is not significant, ruling out the possibility of an S-shaped relationship between population

size and the count of new entrants.

5.3.2 Further analysis

As our data cover various host countries and industries, there may be significant heterogeneity concerning our hypothesized relationships. Therefore, we further checked how our main effects on H1a, H2a, and H3a vary with different contexts. To do so, we divided the host country into three types, namely developed countries, emerging countries, and other developing countries according to the categorization by IMF. Our sample includes 16 developed countries, 16 emerging countries, and 27 other developing countries. The results of *Size1* in Table 6 report the results of country-of-origin effect in different destinations. The result is significant in developed (b=.002, p<.01) and emerging countries (b=.001, p<.05), while it is not significant in the other developing countries. This implies that the legitimacy spillover is an important consideration for EMNEs that strategize the entry into the developed and emerging countries, because legitimacy may be a serious concern in those countries as compared to the other developing countries. Thus, H1a is supported in developed and emerging countries, but not in the context of other developing countries.

Insert Table 6 about here.

Table 7 reports the results on the role of the province-based organizational population for different groups of countries. The results indicate that the joint effects of legitimacy and competition *(Size2 square)* within the population are not significant in developed countries

(b=-.004, p>0.1), but significant in emerging and other developing countries. The reason underlying the results may be attributed to the vast market and complementarity with local producers in developed countries which is conducive to providing more opportunities to enlarge the resource reservoir of the co-provincial population; whereas this population may suffer more fierce competition in emerging countries (b=-.226, p<.05) due to being homogenous with the local producers. In other words, the restraints of the external market affect the degree of competition within the population. Thus, H2a is supported in emerging and other developing countries, but the curvilinear effect is not shown in developed countries.

Insert Table 7 about here.

As Chinese MNEs may be more competitive in certain industries than in others, it is essential to look deeper into the industrial segments to observe whether the hypothesized relationships change between different industries. We divided our sample of co-industry population based on industrial factor intensity, namely, technology-, labor- and capital-intensive groups, according to the industry classification of the *National Bureau of Statistics of China*. Our sub-samples include 7 technology-intensive industries, 6 labor-intensive industries, and 6 capital-intensive industries. We re-estimate the models for three subsamples and display the results in Table 8. The results of the joint effects of legitimacy and competition *(Size3 square)* show that all types of industrial populations are significant and that the labor (b=-.089, p<.01) and capital (b=-.094, p<.01) intensive organizational population suffers more internal competition than that of the technology-

intensive industry. The reason underlying this may be the lower competitiveness of Chinese firms in the high-tech field.

Insert Table 8 about here.

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6. Discussion

6.1 Theoretical implications

First, we extend the location choice literature by proposing an ethnicity-based population ecology view of EMNEs' location choices. Although prior theorizing on FDI location choices uses industry agglomeration theory, institutional theory, and personal social network perspective, among others (Buckley et al., 2007; Duanmu, 2012; Guo et al., 2018; Li et al., 2018; Tang & Buckley, 2022), the influence of national-level social ties on EMNEs' location choices has been under-theorized. This study addresses this research gap by proposing and showing evidence that EMNEs tend to locate FDI in countries with a large existing population of co-national firms. By emphasizing how 'ethno-national ties' (Kim et al., 2020) may help EMNEs cope with legitimacy challenges in the host country and thus attract new FDI entries from the same home country, our study enriches prior work on MNEs' location choice.

Our study also explores the contingent nature of the role of ethnicity-based co-national population of firms. The role of dialects and immigrants has not been considered adequately in the FDI entry studies (Buckley et al., 2007; Hernandez, 2014; Shukla and Cantwell, 2016). Our study finds that while the co-province and co-industry-formed organizational population in the host

country has an inverted U-shaped effect on new FDI entries, provincial dialect and co-national immigrants flatten this curvilinear effect. This finding suggests that the co-provincial population with a higher degree of dialect tends to have less competition effect among its member firm and that co-national immigrants reduce the competition within the co-industrial population. By shedding light on the contingent nature of the inverted U-shaped relationship between co-provincial/ industrial populations and the FD entries from the same province/industry from the home country, our study provides a more nuanced understanding of the role of existing co-national firms in attracting FDI entries from the same home country.

Second, our study extends the fruitfulness of PET by applying it to EMNEs' entry decisions. While prior work on PET posits that organizations tend to imitate the actions taken by their peers in the same industry to facilitate legitimacy in uncertain environments (DiMaggio and Powell, 1983; Guillén, 2002; Li and Yao, 2010), and find inconclusive findings, ranging from positive, negative, to curvilinear relationships between the size of an existing organizational population in industry and the number of new entrants in the same industry (Ruef, 2006; Sørensen and Sorenson, 2003). However, scholars have not considered whether the PET can explain the MNEs' entry decisions. In this study, we find that nationality-bonded EMNE communities in a host country increase the entry of FDI from the same home country to the host country and dig deeper into the role of the existing sub-national and industrial population of firms under the umbrella of the co-national organizational population. We advance the PET by theorizing and showing evidence that the interaction between competing and legitimizing forces leads to the relationship between co-provincial/industrial population size and the new FDI entries by firms from the same home province/industry to develop into an inverted U-shaped one.

Third, our focus on the role of nationality-based organizational ecology also enriches studies on country-of-origin agglomeration effect of FDI entries. Prior research on the role of country-of-origin agglomeration in MNEs' location choices largely assumes a linear effect, i.e., the larger the population of firms from the same home country in the host country, the more firms from the same home country will be attracted to the same host country (Chang and Park, 2005; Chung and Song, 2004; Tan and Meyer, 2011). We extend the research on the country-of-origin agglomeration effect by exploring the sub-national level and provide evidence that the size of the co-provincial population influences the number of new entrants from the same province in a curvilinear manner.

6.2 Managerial implications

First, our study shows that EMNEs tend to enter countries with a large agglomeration of co-national firms. Thus, in addition to conventional factors such as market demand, labor cost, and endowment of strategic assets, EMNE managers should also consider the presence of co-national firms in the host country when making location choices. This will help EMNEs overcome legitimacy challenges in the host country, thus helping them compete with local firms and succeed in the foreign market.

Second, our findings show that the role of co-provincial/co-industrial population size in attracting firms from the same home country starts to decrease once the size reaches a certain level. This finding implies that EMNE managers should not over-estimate the role of co-provincial/co-industrial firms' presence in the host country in addressing legitimacy challenges as it may be offset by the competition effect over time. Instead, they should assess the dynamic interplay between the legitimacy and potential inter-organizational competition within the co-national FDI

community before making investment decisions.

Finally, our findings show that even though co-provincial/co-industrial agglomeration influences the entry of home country firms in an inverted U-shaped manner, the degree of provincial dialect and co-national immigrants can increase the net effect of population size underpinned by the opposite forces of legitimacy and competition. Accordingly, when assessing the role of co-provincial and co-industrial agglomeration in determining location choices, EMNE managers should take into account the role of 'third variables' such as the degree of provincial dialect and co-national immigrants as these variables may weaken the competition among co-provincial/co-industrial organizational population.

6.3 Limitations

First, we use a sample of Chinese firms to test our hypotheses. Because of unique institutional idiosyncrasies in China and the stage of Chinese firms' development, the nature, types, motives, and location choices of Chinese firms' FDI may differ from those of their counterparts from other emerging countries. Hence, the findings of this study may apply to FDI location choices made by firms from other emerging countries to a degree. Second, FDI location choices may vary depending on the motives of investment which can be market seeking, resource seeking, and strategic assets seeking, among others. However, data constraints prevent us from controlling for the effect of such FDI motives completely. Finally, while we considered the moderation effect of co-national immigrants, data constraints do not allow us to differentiate the role of different generations of Chinese immigrants in the host countries. In our case, it is likely that second and third generations of immigrants will have a weaker moderating effect than first immigrant

generations because they are born in the host countries and are less affiliated with the country-of-origin of their parents or grandparents. Future research can focus on the differential role of earlier generations vs. newer generations or permanent residents vs. local citizens to enable a more nuanced understanding of how immigrants influence MNEs' location choices.

Acknowledgments

This study was funded by the National Natural Science Foundation of China (Project No. 71702026). We are also thankful to the anonymous reviewers of this journal as well as reviewers from the 2019 AIB conference for their valuable and insightful suggestions.

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Table 1A Correlation Matrix of Country-level Model

	1	2	3	4	5	6	7	8	9	10
1.Odi										
2.Size1	0.919*									
3.Ins_dis	0.153*	0.141*								
4.Cul_dis	0.044	0.023	0.045*							
5.IFDI	-0.025	-0.024	0.147*	0.036						
6.Patent	0.279*	0.281*	0.374*	0.040	-0.028					
7.Resource	-0.041	-0.023	-0.008	0.101*	0.009	-0.062				
8.Bit	-0.028	0.043	-0.044	-0.070	0.036	0.037	0.015			
9.Distance	-0.086*	-0.134*	0.175*	-0.096*	0.005	-0.113*	0.205*	-0.280*		
10.Ins_home	-0.092*	-0.068	0.010	0.000	-0.022	-0.040	-0.030	-0.091*	0.000	

Table 1B Correlation Matrix of Provincial and Industrial-level Model

	Ins_dis	Cul_dis	IFDI	Patent	Resource	Bit	Distance	Ins_home	Odi2	Size2	dialect
Odi2	0.007	0.061*	-0.005	0.131*	-0.030*	-0.024*	-0.016*	0.022*			
Size2	0.021*	0.053*	-0.011	0.144*	-0.027*	0.002	-0.030*	0.037*	0.387*		
dialect	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.147*	0.087*	0.144*	
	Ins_dis	Cul_dis	IFDI	Patent	Resource	Bit	Distance	Ins_home	Odi3	Size3	Immigrant
Odi3	0.007	0.050*	-0.005	0.276*	-0.031*	-0.025*	-0.016	-0.001			
Size3	0.022*	0.052*	-0.012	0.305*	-0.029*	0.002	-0.032*	-0.008	0.415*		
Immigrant	-0.001	0.080*	-0.028*	0.506*	0.161*	0.064*	-0.157*	0.001	0.152*	0.191*	

* $P<0.01$.

Note: Size 1, Size 2 & Size 3 represent co-national population size, co-province population size, and co-industry population size respectively. Odi1, Odi2 and Odi3 are new entries of FDI projects at co-national, co-provincial and co-industry levels respectively. Because control variables are all from the country-level throughout all the models, Table 1B just reports the correlations between the dependent, independent and moderating variables with other variables.

Table 2 Descriptive statistics

VarName	Mean	SD	Min	Max
Odi1	24.071	55.461	0	964
Size1	79.496	169.24	0	2404
Odi 2	0.215	1.129	0	58
Size 2	0.839	3.985	0	211
Odi 3	0.288	1.445	0	75
Size 3	1.121	4.798	0	242
Ins_dis	0.036	0.225	0	2.412
Cul_dis	2.789	1.073	0.64	5.257
IFDI	0.025	0.273	-1.484	6.296
Patent	5.394	3.677	0	12.613
Resource	9.001	16.166	0	84.887
Bit	0.722	0.448	0	1
Distance	8.791	0.625	6.997	9.868
Ins_home	2.405	0.548	1.6	3.46
Dialect	0.760	0.708	0	2
Immigrant	2.324	8.795	0	66.153

Table 3 Zero-inflated negative binomial regression results on country-of-origin effect

	(1)	(2)
Size 1		0.003***
		(11.77)
Ins_dis	-0.679*	-0.260
	(-1.76)	(-0.77)
Cul_dis	0.732**	0.644**
	(2.51)	(2.55)
IFDI	0.057	0.073
	(0.47)	(0.65)
Patent	0.035	0.004
	(1.53)	(0.22)
Resource	0.008*	0.004
	(1.67)	(0.83)
Bit	1.139***	0.666***
	(7.52)	(4.93)
Distance	-0.625	-0.724
	(-0.60)	(-0.80)
Ins_home	-0.420***	-0.537***
	(-5.03)	(-7.86)
_cons	-0.669***	-1.000***
	(-10.19)	(-14.04)
Country fixed effects	Yes	Yes
Ln alpha	-1.473***	-1.498***
Log likelihood	-2479.466	-2392.963

N=705

*p<0.1; **p<0.05; ***p<0.01

Table 4 Zero-inflated negative binomial regression results on province-based organizational population

	(1)	(2)	(3)
Size 2 (A)		0.019***	0.055***
		(5.10)	(5.14)
Size 2 square/100 (B)		-0.008***	-0.058***
		(-3.69)	(-3.60)
Dialect			0.904***
			(3.66)
Dialect*A			-0.020***
			(-3.64)
Dialect*B			0.026***
			(3.24)
Ins_dis	1.007***	0.868***	0.884***
	(3.71)	(3.23)	(3.27)
Cul_dis	0.180	0.183	0.231
	(0.62)	(0.67)	(0.82)
IFDI	0.166	0.402***	0.408***
	(1.55)	(3.11)	(3.17)
Patent	-0.065***	-0.063***	-0.071***
	(-3.46)	(-3.35)	(-3.70)
Resource	-0.010**	-0.009*	-0.004
	(-2.14)	(-1.66)	(-0.79)
Bit	-0.165	-0.273**	-0.310**
	(-1.50)	(-2.16)	(-2.44)
Distance	-0.669*	-0.611*	-0.623*
	(-1.86)	(-1.73)	(-1.76)
Ins_home	-0.709***	-0.609***	-0.646***
	(-4.04)	(-3.55)	(-3.74)
_cons	1.895	2.016	1.235
	(0.63)	(0.67)	(0.42)
Country fixed effects	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Ln alpha	-0.943***	-1.330***	-1.321***
Log likelihood	-6204.879	-6147.628	-6140.864

N=17,325

*p<0.1;**p<0.05;***p<0.01

Table 5 Zero-inflated negative binomial regression results on industry-based organizational population

	(1)	(2)	(3)
Size 3 (A)		0.022***	0.031***
		(6.06)	(5.52)
Size 3 square/100 (B)		-0.008***	-0.028***
		(-4.56)	(-3.09)
Immigrant			0.054**
			(2.10)
Immigrant*A			-0.001*
			(-1.68)
Immigrant*B			0.003**
			(2.27)
Ins_dis	-0.105	-0.074	-0.065
	(-0.31)	(-0.22)	(-0.20)
Cul_dis	-4.630**	-3.324	-3.420
	(-2.06)	(-1.43)	(-1.47)
IFDI	0.235**	0.216*	0.217*
	(2.21)	(1.84)	(1.85)
Patent	-0.051***	-0.068***	-0.068***
	(-2.98)	(-3.63)	(-3.63)
Resource	-0.009**	-0.010**	-0.011**
	(-2.34)	(-2.30)	(-2.52)
Bit	-0.200*	-0.260**	-0.275**
	(-1.80)	(-2.16)	(-2.28)
Distance	2.524	1.657	1.780
	(1.34)	(0.85)	(0.91)
Ins_home	0.021	0.063	0.025
	(0.09)	(0.27)	(0.11)
_cons	-18.920	-12.750	-13.482
	(-1.47)	(-0.96)	(-1.01)
Country fixed effects	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Ln alpha	-1.011***	-1.322***	-1.325***
Log likelihood	-5574.448	-5517.648	-5512.917

N=13,167

*p<0.1;**p<0.05;***p<0.01

Table 6 Country breakdown results on country-of-origin effect

	(1) Developed	(2) Other Developing	(3) Emerging
Size 1	0.002***	0.001	0.001**
	(6.92)	(1.42)	(2.00)
Ins_dis	1.452*	-1.518***	1.013*
	(1.70)	(-3.59)	(1.76)
Cul_dis	-0.441**	0.122	0.375
	(-2.11)	(0.44)	(1.12)
IFDI	0.037	1.685	4.587***
	(0.34)	(0.91)	(2.73)
Patent	-0.088	0.007	0.011
	(-1.61)	(0.30)	(0.27)
Resource	0.084***	0.000	-0.005
	(3.39)	(0.07)	(-0.21)
Bit	0.903***	0.125	0.248
	(4.96)	(0.54)	(0.88)
Distance	-2.920***	2.736**	-1.414***
	(-2.90)	(2.43)	(-4.11)
Ins_home	-0.520***	-0.485***	-0.690***
	(-4.43)	(-5.47)	(-5.22)
_cons	27.836***	-22.042**	14.428***
	(3.45)	(-2.23)	(4.61)
Country fixed effects	Yes	Yes	Yes
Ln alpha	-1.139***	-1.368***	-0.984***
N	192	321	192
Log likelihood	-675.743	-954.837	-573.520

*p<0.1; **p<0.05; ***p<0.01

Table 7 Country breakdown results on province-based organizational population

	(1) Developed	(2) Other Developing	(3) Emerging
Size 2	0.008*	0.065***	0.036
	(1.93)	(4.57)	(1.36)
Size 2 square/100	-0.004	-0.074***	-0.226**
	(-1.58)	(-3.94)	(-2.35)
Ins_dis	0.581	1.548***	-0.005
	(1.55)	(2.97)	(-0.01)
Cul_dis	-0.155	0.146	0.087
	(-0.74)	(0.43)	(0.22)
IFDI	0.419***	-0.830	318.573
	(3.21)	(-0.44)	(1.46)
Patent	-0.111**	-0.093***	0.008
	(-2.53)	(-3.11)	(0.16)
Resource	-0.001	-0.012**	-0.008
	(-0.05)	(-2.53)	(-0.27)
Bit	-0.553***	-0.030	-0.130
	(-2.68)	(-0.11)	(-0.56)
Distance	0.407	0.162	-1.292***
	(0.55)	(0.27)	(-2.79)
Ins_home	-0.780***	-0.207	-0.633*
	(-3.38)	(-0.63)	(-1.83)
_cons	-4.007	-7.882	8.873**
	(-0.59)	(-1.45)	(2.34)
Country fixed effects	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Ln alpha	-1.830***	-0.913***	-1.337***
N	4800	8025	4500
Log likelihood	-2299.113	-2110.126	-1582.624

*p<0.1; **p<0.05; ***p<0.01

Table 8 Factor intensity breakdown results on industry-based organizational population

	(1) High tech	(2) Labor	(3) Capital
Size 3	0.067***	0.083***	0.107***
	(13.10)	(6.86)	(8.79)
Size 3 square/100	-0.023***	-0.089***	-0.094***
	(-10.15)	(-4.84)	(-6.03)
Ins_dis	-0.008	-0.548	0.469
	(-0.01)	(-0.92)	(0.65)
Cul_dis	-0.892	-4.234	-4.940
	(-0.22)	(-1.09)	(-0.99)
IFDI	0.269*	2.520	-0.061
	(1.89)	(1.49)	(-0.27)
Patent	-0.020	-0.122***	-0.043
	(-0.72)	(-3.83)	(-0.97)
Resource	-0.012*	0.001	-0.018**
	(-1.82)	(0.14)	(-2.24)
Bit	0.057	-0.470**	0.027
	(0.31)	(-2.21)	(0.09)
Distance	-0.067	2.213	4.340
	(-0.02)	(0.67)	(1.07)
Ins_home	0.751***	0.414***	-0.380**
	(6.23)	(5.68)	(-2.05)
_cons	-2.123	-15.885	-32.647
	(-0.09)	(-0.71)	(-1.19)
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Ln alpha	-0.986***	-0.809***	-2.686**
N	4851	4139	4177
Log likelihood	-2567.624	-1906.763	-1301.174

*p<0.1;**p<0.05;***p<0.01

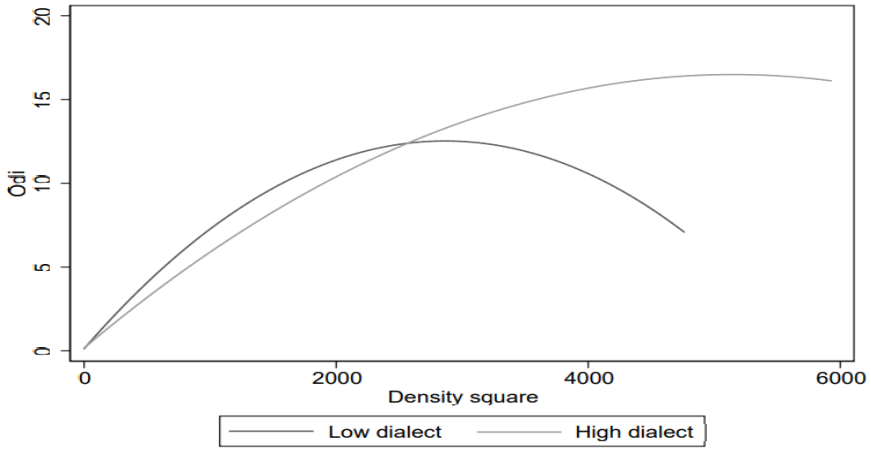

Figure 1 The moderating effect of the degree of dialect on province-based organizational population

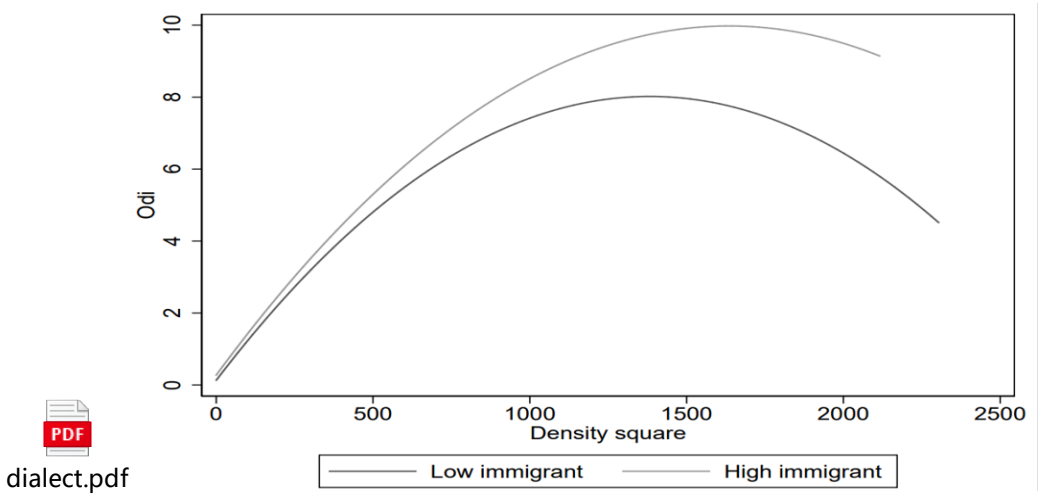

Figure 2 The moderating effect of co-national immigrants on industry-based organization population