Global and non-global city locations: the effect of clusters on the performance of foreign firms

Sharif Rasel & Paul Kalfadellis

Published online: 24 Mar 2021.

Submit your article to this journal ⊡

Article views: 437

View related articles ⊡

View Crossmark data ⊡

Routledge
Taylor & Francis Group

RSA Regional Studies Association

Global and non-global city locations: the effect of clusters on the performance of foreign firms

Sharif Rasel [a] and Paul Kalfadellis [b]

ABSTRACT
This study examines the effects of subnational regional heterogeneity on the performance of foreign firms. Based on the global city concept, it identified regions with and without global connectivity and then compared the effects of within-country location advantages on foreign firm performance between the regions within a country. Given that present studies offer conflicting findings on how industrial concentration, that is, clusters, affect the performance of business firms, this study argues that they fail to address the global connectivity of subnational regions. Findings from Australia suggest that industrial concentration in regions with global connectivity as highlighted by global cities have a positive effect on the performance of foreign firms located there; however, that is not the case in other non-global city locations. This study thus offers an insight into better understanding this unresolved issue by arguing that the effect of industrial concentration upon a foreign firm's performance is contingent upon the subnational regions' global connectivity.

INTRODUCTION

Understanding the performance variation of foreign firms has been an important area of research in the field of international business (Hult et al., 2008). A number of studies have identified a range of diverse determinants, in the main location-specific advantages that explain the performance variation of foreign firms across countries (e.g., Makino et al., 2004). However, studies that investigate the variation of such advantages between countries and their impact on the performance of firms focus predominantly on the national domain with inadequate attention given to within-country heterogeneity (Buckley, 2016). As Porter (2003, p. 550) notes, 'there are substantial differences in economic performance across regions in virtually every nation'. An Organisation for Economic Co-operation and Development (OECD) study examining the regional concentration of economic activities within a country found that there was significant heterogeneity among subnational regions in terms of how much they contributed to

CONTACT
(Corresponding author) ✉ sharif.rasel@flinders.edu.au
[a] College of Business, Government and Law, Flinders University, Bedford Park, SA, Australia.
✉ paul.kalfadellis@monash.edu
[b] Monash Business School, Monash University, Caulfield East, VIC, Australia.

national gross domestic product of their country (OECD, 2016). Investigating the within-country regional attractiveness of Australia as a location for foreign firms, Kalfadellis (2015) found heterogeneity between the subnational regions in terms of the factors that predicted foreign direct investment (FDI). It is evident that the heterogeneity and concentration of economic activity within a country warrants greater analytical rigour and investigation if we are to better understand the performance variation of foreign firms across space in a host country.

Locational factors within a region, based on a dichotomy between 'place' and 'space', have not been adequately distinguished (Beugelsdijk et al., 2010). According to Dai et al. (2013, p. 556), 'place' refers to the 'inherent attributes of the physical locations', that is, traditional location-specific advantages both natural and created, whereas 'space' incorporates the 'conceptions of distance and connectedness between economic and social actors' that encapsulate the pecuniary and technological externalities of a location such as connectivity, knowledge spillovers and the agglomerative effects brought about by the clustering of specialized activities (Dau, 2013, p. 237). Despite a perception that traditional 'place' factors such as resources, labour costs, size of the market, human capital, etc. act as a source of competitive advantage for a location, it is argued that 'space' factors, specifically clusters, which are concentrations of interconnected companies and institutions that arise as a result of inter-firm proximal interactions, are just as important as a source of competitive advantage for locations (Porter, 1998). Clusters, which is a focus of this study, and their effect on the performance of firms situated in different locations have been debated (Nachum, 2000; Porter, 1998), highlighting a need for further investigation.

The global dispersion of business activities has increased the importance and complexity of networks of business operations including specialized service functions, such as financial, legal, accounting and consultancy services, that are increasingly being outsourced to reduce the burden of management complexity (Sassen, 1991, 2007). Firms providing such specialized services of a fairly uniform nature to globally dispersed multinational enterprise (MNE) subsidiaries enable the formation of globally decentralized partnerships between the service providers and the recipient firms (Sassen, 1991, 2007), thus creating a transnational servicing network of city-to-city transactions (Sassen, 2007). By utilizing a network of business practices among firms, global cities are able to achieve better economic performance due to the collocation of service providers and recipient firms and their connectivity with other major cities (Pain et al., 2016). Scott (2001b, p. 820) explains that these global city locations have thus become:

> superclusters whose massive recent expansion stems from the circumstance that many of the leading sectors of capitalism today are organized as dense and intensely localized networks of producers with powerful endogenous growth mechanisms and with an increasingly global market reach.

These locations help foreign firms to traverse cross-border and within-country connectedness (Rosen-Zvi et al., 2018). However, the distinction of within-country locations based on the strategic advantages of this global connectedness has not been adequately addressed (Martinus & Sigler, 2018; Sassen, 1991, 2007; Scott, 2001b). Economic geography has addressed within-country locations as an important area of research in terms of the heterogeneity of concentration of economic activity across space, and the rise of global cities. The global city concept has received little attention in international business, and in particular investigating the performance benefits that accrue to MNEs that locate in global cities (Goerzen et al., 2013). MNEs may enhance performance by locating in global cities as they look to alleviate transaction costs attributable to a lack information and connectivity in non-city-regions (Goerzen et al., 2013). At the same time their performance may be negatively affected in city locations, as they accrue costs related to increased competition for the finite local resources (Stuart & Sorenson, 2003) or as a result of missing out on ideas and knowledge arising in locations outside

the global city network (Pouder & St. John, 1996). It is in this light that we are addressing the call by Goerzen et al. (2013) for future studies to relate this choice between global and non-global city locations to corporate and subsidiary performance. Specifically, in investigating the relationship between within-country locations and performance variation and the agglomerative effects of clusters across regions, this study looks to address the inadequate attention given to our understanding of industrial concentration deriving from the concept of 'space' and its relationship to global and non-global cities within a country (Nielsen et al., 2017).

This paper presents findings from a study that investigates the influence of location advantages in Australia's two global cities: Sydney and Melbourne (GaWC, 2020), and non-global cities on the performance of foreign firms operating there. Australia provides the perfect landscape to better understand this differentiation. Significant structural shifts in the Australian economy have resulted in spatial consequences for the country's cities and regions (Tonts & Taylor, 2013). Regional cities and towns once reliant on manufacturing industries have over time been sidelined (Beer et al., 2003) as specialized service firms concentrate in Sydney and Melbourne, enabling these cities to act as nodes of connectivity (Agnes, 2000) beyond their domestic shores.

Rated as Australia's first-tier cities (Tonts & Taylor, 2013), as global 'Alpha' cities (GaWC, 2020), and as global world cities (A.T. Kearney, 2019), both cities combined make up over 40% of Australia's 25 million population (Australian Bureau of Statistics (ABS), 2020b) and contribute over 43% (Sydney 24%, Melbourne 19%) (SGS Economics and Planning, 2019) to Australia's A\$1.88 trillion economy (ABS, 2020a). Over the past 20 years, both highly urbanized cities have transformed their economies through infrastructure investments that have improved their connectivity. Relying less on manufacturing, both cities have attracted more knowledge-intensive advanced service industries that have provided high value-add in areas such as finance, superannuation and funds management, insurance, accountancy, consultancy, information technology (IT), healthcare, and education (SGS Economics and Planning, 2019).

Driven by the concepts of economic geography, this study has decomposed location-specific advantages of subnational regions into the 'inherent attributes' and the clustering effects based on the place and space framework (Beugelsdijk et al., 2010). In contrast to prior studies that conceptualize subnational regions without considering global connectivity, it has adopted the 'global city' concept to differentiate locations in order to investigate the 'inherent attributes' and cluster effects on foreign firm performance in both types of within-country regions, that is, global and non-global city locations.

The paper continues with a brief review of the literature surrounding within-country heterogeneity, global cities and the Australian context of the study. We subsequently develop the hypotheses and explain our research design, followed by a presentation of our findings. These findings indicate that the location factors that impact on foreign firm performance vary as a result of subnational regional effects, that is, differences between global and non-global city locations. Differences were strongly driven by clusters/industry concentration, which had a positive influence on foreign firm performance in global cities and a 'statistically non-significant' effect on foreign firm performance in non-global city locations. We close with a discussion of the findings, the limitations of the study and future research avenues.

LOCATIONAL FACTORS OF WITHIN-COUNTRY HETEROGENEITY

Alfred Marshall's 'localisation economies' pioneered the concept of why location plays an important role in shaping businesses. The concept highlights the different linkages of market forces in industrial agglomeration (Beenstock & Felsenstein, 2010) that are underpinned by localized concentration of production incorporating a specialized and skilled labour market, the availability of specialized inputs, and knowledge spillover effects (Fingleton, 2003).

While knowledge spillovers are seen as technological externalities, the other two Marshallian externalities (specialized labour market and specialized inputs) are categorized as pecuniary externalities (Fingleton, 2003; Fujita & Thisse, 1996).

Technological externalities are produced at little or no cost (Antonelli et al., 2011) and are localized as a public good (Breschi & Lissoni, 2001) and diminish over distance (Fujita & Thisse, 1996). Where technological externalities do not require market mechanisms, pecuniary externalities are the benefits that firms enjoy as a result of market transactions with other agents in the location (Fujita & Thisse, 1996) leading to increasing returns to scale (Redding, 2010). Proximity is necessary to ensure an effective interaction in order to gain access to pecuniary externalities (Antonelli et al., 2011), thus the concentration of upstream and downstream activities leads to increasing returns to scale (Fujita & Mori, 2005). Economies of scale are therefore an agglomeration force (Krugman, 1993), and are present where business activity is concentrated, impacting firm performance by reducing costs and helping build networks between buyers and suppliers.

When specifically looking at industrial concentration on firm performance across subnational regions, studies suggest both positive (Ma et al., 2013) and negative (Hsu et al., 2017) effects, resulting in contradictory findings. More generally, although the performance of foreign firms has been investigated in a large range of studies, inconclusive (Gomes & Ramaswamy, 1999) and contradictory (Kotabe et al., 2002) results suggest an inadequate identification of factors may have led to conflicting findings in studies on foreign firm performance (Hult et al., 2008). A variation of resources across locations is the difference in the inherent characteristics of a location. Heterogeneity within a country has induced international business researchers to adopt the economic geography concept of place and space to address subnational variation in a location (e.g., Rasel et al., 2020). By decomposing location into 'inherent attributes' and clusters based on the concepts of place and space, this study addresses the call for 'location' to be investigated with greater rigour as one of the neglected factors in international business (Dunning, 2009).

GLOBAL CITIES AND SUBNATIONAL HETEROGENEITY

Firms' spatial and organizational activities have changed due to increased global competition and the interdependence of economic actors (Cantwell & Narula, 2003, p. 4). Increased competition in the international market has made the survival of the firm conditional upon its ability to optimally distribute and integrate business activities across geographical space (Sanders & Carpenter, 1998), resulting in increasing complexities faced by firms as they increasingly look to source advance specialized services to be able to compete (Sassen, 1995). Castells (1996) argued that specialized services such as IT, finance and consultancy were giving rise to a global network of information flows across space that were fundamentally undermining and usurping the role of place that had traditionally been associated with the state in favour of cities across the world that could offer these advanced specialized services.

Enquiry into global/world cities has focused on the demographic and consequential effects on urban landscapes and environments (Beaverstock et al., 1999), and the functional as 'centres' of diverse economic activity and nodes of connectivity (Friedmann, 1986; Sassen, 2012). Major cities are not only engines of economic development of their home country, but have played a pivotal role in the development of the global economy (Roy, 2009), encapsulating the notion and status of world or global cities.

As early as the start of the 20th century, Patrick Geddes (1915) in his *Cities of Evolution* suggested world cities were a product of competition in the global economy and foresaw quite presciently that they themselves would end up competing against each other to attract global capital (Pain, 2017). For Roderick McKenzie in 1927, as world 'centres of gravity' of urban

organization they were built on the relational power of dominance and subordination (Pain, 2017). More recently, 'world cities' have been described as centres of power, human capital and culture, places in the world in which an inordinate amount of business takes place (Hall, 1966). For Friedmann (1986), world cities are nodes that allow the accumulation of global capital through the provision of financial and 'high-level' business services. Sassen (1994) saw world cities as centres of command and control of the world economy hosting the headquarters of MNEs and international organizations. Castells (1996) introduced the idea of a 'city network' underpinned by new economy of specialized producer services such as information and communication technologies (ICTs) acting as key contributors to a growing international network of relationships among cities. Goerzen et al. (2013) argued that global cities are spaces characterized by a cosmopolitan environment, the provision of high value-added specialized services and which provide for high levels of connectivity with other locations; cities without these attributes are not deemed global. Governments have over time encouraged the growth of these cosmopolitan cities through a range of policy initiatives (Hall, 1966) making them magnets for foreign firms looking to locate within their urban space (Belderbos et al., 2020), bringing in diverse human capital, knowledge and know-how (Sassen, 2012).

Global cities are also characterized by the provision of high value-added specialized services such as banking and finance, professional services such as legal, marketing, accounting, communications, IT and corporate consultancies that underpin the performance of a multinational firm's operations. As Sassen (2016) points out, the concentration of a distinct and diverse range of specialized knowledge in global cities delivers them a unique capability to produce and supply 'extraordinary combinations of knowledge components' (p. 100) to dispersed activities of foreign firms. These cities are of fundamental importance to the global operations of multinational firms and organizations, and act as command-and-control nodes in the organization of the global economy. Their leading role in the development of the global capitalist economy means that as centripetal hubs in global economy they have helped augment global linkages and extensive interconnectedness (Friedmann, 1986; Sassen, 1994, 2012). As Sassen (2012) points out, global linkages and a high degree of interconnectivity between them enhanced through the advent of advanced infrastructure development allows the global system of markets and production to function and reinforce the pre-eminent status of these global city locations.

According to Friedmann (1986), a range of global and sub-global roles in the spatial configuration of markets and production results in a hierarchy of world cities, all part of an interconnected network. A hierarchy of primary and secondary cities (Friedmann, 1986) is based on criteria such as the proliferation of multinational firms, agglomerative economies, the provision of advanced specialized services, communication nodes, governance structures and the influence they exert on the global economy, which according to Roy (2009, p. 821) is 'unidimensionally driven by finance capital'. The ethos of global capitalism sees cities 'compete' in order to advance up the hierarchy. A range of indices, such as the Global Cities Index (A.T. Kearney, 2019) and the Globalization and World Cities Research Network (GaWC, 2020) that categorizes global cities into 'Alpha', 'Beta' and 'Gamma' tiers, all look to capture the global connectedness of these cities through their interlocking networks, the advanced specialized services they offer as global hubs supporting advanced human capital and corporate investment.

For over a century the discourse surrounding global cities has resulted in an ongoing discussion of modern global capitalism and its effect on competitive *spatial* relations (Pain, 2017). Global cities as the building blocks of economic globalism (Jonas & Ward, 2007) emphasize a new stage in the capitalist development of territory and space (Scott, 2001a) and highlight a new form of geographical centrality which localizes many global elements (Sassen, 2000). The global city can be argued to represent a simultaneous force of dispersion and concentration: a dispersion of business activities globally by foreign firms and a concentration of service activities by specialized professional service providers (Sassen, 2005a). As Doel and Hubbard (2002)

point out, the unique characteristics exhibited by global cities suggest a club of cities that have similarities and more in common with each other as global strategic locations and 'transnational geographies' (Sassen, 2005b) than with the non-city locations and regions within their own home countries. Based on their global connectivity, there is a concentration of service activities in global cities which is likely to be highly knowledge intensive. It can therefore be argued that locational factors in highly ranked 'Alpha' global cities (such as Sydney and Melbourne) should have different influences on firm-level performance compared with other cities and regions within the same country.

HYPOTHESIS DEVELOPMENT

Within-country locational factors and firm performance

'Inherent attributes' in a location such as local resources and inputs that firms need to access in order to carry out their operations may require firms to situate close by if they are to achieve increasing returns to scale. As Ciccone and Hall (1996) point out, rather than suffering the cost of transporting inputs, a firm can enjoy increasing returns to scale by collocating close to the source of their inputs and in the process improve operational performance. Further, a key factor of regional competitiveness is innovation intensity that facilitates an access to localized knowledge and improves a firm's performance (Porter, 2003). Resources, inputs and innovation intensity of a region are a few examples of 'inherent attributes' of a location which firms often consider as essential for their performance (Ansar, 2013).

Clusters are created by proximity and connectedness of economic and social agents (Dau, 2013) that arise from a 'geographical concentration' and connectivity in a region through the sharing of common markets, suppliers, trade, educational institutions, knowledge and information (Zhao et al., 2009). Positive externalities in cluster concentrations not only increase the productivity and profit of a firm (Chen, 2009) but also play an important role in enhancing the firm-level competitive advantage (Nachum, 2000; Porter, 1998). Firms can access complementary resources from interconnected business activities, save time and resources in searching for, developing and monitoring inter-firm activities through collocation. Collocation affords firms economies of scale advantages (Casson, 2014) through better 'connectedness' in the concentration of value chain activities.

Proximity also helps firms gain access to localized knowledge and acquire benefits from knowledge spillover (Eriksson, 2011). Knowledge spillovers have been found to be stronger among firms within a region than those from different regions (Singh, 2005). The physical proximity of knowledge spillover makes knowledge locally bound and does not allow it to flow easily over distance (Baptista & Swann, 1998). The synergy gains of agglomeration economies increase the competitiveness of locations through the positive externalities they offer, such as better relational linkages for business, and the use of technologies for connectivity and specialized inputs such as labour, all of which increase the benefits for firms situated in those locations (Dai et al., 2013). In light of the above discussion, we hypothesize the following:

Hypothesis 1: The 'inherent attributes' (e.g., labour availability and innovation intensity) found in a location positively influence the performance of foreign firms within that location.
Hypothesis 2: Clusters found in a location positively influence the performance of foreign firms within that location.

Cluster effect on firm performance in global and non-global city locations

The concentration of activities that create agglomeration benefits is not equally distributed across the space of a country. Heterogeneity of concentration of related business activities within

a country creates a disparity of opportunities for foreign firms looking to gain benefits from 'connectedness' within the location. The greater the presence of positive externalities from a cluster in a country between city and non-city-regions, the greater the likelihood of different levels of benefits accruing to firms in those respective locations. The environment and the high levels of advanced producer services of global cities suggest differences in the likely benefits that they accrue when compared with other within-country locational units of analysis (Goerzen et al., 2013). The geographical centrality of central business districts in global cities forms a transnational urban system that allows an intensity of intrafirm connectivity to both within- and between-country locations. This intensity of intrafirm connectivity is very high compared with surrounding regional locations, rendering non-global city locations less integrated into global intra-firm networks (Lüthi et al., 2010). Hence, within-country locations distant from global cities are less attractive for foreign investors because of a lack of global connectivity (McDonald et al., 2018) and functional centrality, making these regional locations increasingly disconnected from adjacent global cities (Lüthi et al., 2010). This results in a greater interconnectedness among global cities (Nachum & Wymbs, 2005), but also a lessening of the mediating role of the host country (Sassen, 2016) adding a new dimension to our understanding of the heterogeneity of subnational regions (Sassen, 2005a) and in particular global and non-global city locations within a country.

Global cities provide firms with the opportunity to locate in concentrated information industry hubs (Sassen, 1991) that support the 'global supply of business services' (Goerzen et al., 2013, p. 430). They help overcome the liability of foreignness (Zaheer, 1995) by lessening the difficulty of doing business in a foreign market environment (Goerzen et al., 2013) through higher accessibility and less uncertainty (Blevins et al., 2016). Admittedly, agglomeration disadvantages can exist in global cities (Mariotti et al., 2010; Narula & Santangelo Grazia, 2012) as, for example, anticipated knowledge outflows can make global cities unattractive to research-intensive firms (Holl & Rama, 2016); however, the evidence suggests that there is no negative impact from knowledge outflows on firm-level performance (Erden et al., 2014; Eriksson, 2011).

In contrast to global cities, in non-global city locations a specialization of cluster concentrated economic activity is created based on available resources. Static externalities in a regionally specialized concentration help to produce further specialization (Glaeser et al., 1992). Agglomeration externalities gained from different but complementary concentration of activities are useful in helping increase performance, whereas agglomeration externalities from the same industry are found not to be as useful (Eriksson, 2011). Due to specialization, non-global city locations have a limited absorptive capacity of growing concentration. An excess concentration of firms creates negative externalities (Tabuchi, 1998). This is especially the case when a growing number of firms compete for the same or similar resources, creating diseconomies of agglomeration (Xiao-Ping, 1998) and reducing location-bound spillover benefits (Diez-Vial, 2011). As concentration grows, and clusters grow in size, competition for land, workers and utility also grows, driving up costs and reducing the marginal benefits of clusters due to diseconomies of agglomeration (Folta et al., 2006). Furthermore, agglomeration economies gradually decrease as concentration exceeds the infrastructural ability of a location (Pouder & St. John, 1996).

Agglomeration externalities from different but complementary concentrations of specialized advanced activities are important in increasing performance (Eriksson, 2011). As Sassen (2011, p. 126) states, the 'difference for global cities is that they are able to handle the more complex needs of firms and exchanges operating globally'. A lack of diversity in non-global city locations within a country can result in agglomeration negatively affecting firm performance. In light of the above discussion, we hypothesize the following:

Hypothesis 3: Clusters within a global city location positively influence the performance of foreign firms.

Hypothesis 4: Clusters within non-global city location negatively influence the performance of foreign firms.

SAMPLE, VARIABLES AND ESTIMATION

This study investigates the heterogeneity of subnational Australian regions in terms of the 'inherent attributes' and cluster influence on foreign firm performance. For this purpose, subnational regional data for the year 2011 (during the data analysis, only this year's data were available to the public) were collected from the ABS using the Data by Region tool of the ABS database. It contained subnational location data at the Statistical Area Level 4 (SA4) regions from Australia. In addition, a cross-sectional dataset is drawn from the Orbis database of Bureau van Dijk. This database contains comprehensive information on business firms worldwide. To focus on business performance variation for subnational heterogeneity, a sample of foreign firms operating in Australia was chosen. Foreign firms in a single host country enjoy similar macro-economic environments and therefore no bias is likely of the between-country differences in the dataset. Foreign firms with performance results for the period 2012–17 were only included in the sample. Other search strategies applied to the database to identify the sample of this study included firms' addresses to identify their location, the categorization of industry to identify applicable industrial concentration and information about firms' return on assets (ROA). Therefore, the search strategy yielded 4776 foreign firms operating in Australia with the required information on industry, location and profitability. Foreign firms in this sample are located in 80 out of 107 SA4 regions and, hence, the sample covers 74.7% of substate regions in Australia. The study includes the following variables.

Dependent variable
Return on assets (ROA) is the dependent variable of the study indicating the performance of the firm. Although firm performance is a broad concept, financial performance is the centre of overall effectiveness of a firm (Venkatraman & Ramanujam, 1986). There are numerous measures of financial performance, yet ROA is a commonly used measure of financial performance (Hult et al., 2008) and firm-level profitability (Graves & Waddock, 1994). ROA is a ratio of operating profit to the assets of a firm and thus it is a stable measure across industries (Goldeng et al., 2008). To examine the robustness of the results, a second performance measure is used to test the hypotheses: 'profit margin' of the foreign firms.

Independent variables
'Inherent attributes' and clusters are the two locational factors that define heterogeneity within a country. We identify patent application and availability of labour to proxy 'inherent attributes' of Australian regions. The cluster of an industry in a region was measured using the location quotient (LQ). We also used the Getis–Ord statistic (G_i^*) to measure clusters to ensure the robustness of the findings.

Inherent attributes
The number of patent applications from an SA4-level region represents the innovation intensity of the location (Criscuolo et al., 2005). Innovation is a key factor in defining the competitiveness of a subnational region (Porter, 2003) allowing a business to improve its performance (Rasel et al., 2020), and is thus included as an independent variable to proxy for the 'inherent attributes' of a subnational location.

The total number of people in the labour market represents the availability of labour as a factor of production in an SA4-level region. The population in Australia is clustered in a number of big cities. Hence, labour supply is an important determinant for locational attractiveness in regional Australia (Hodgkinson et al., 2001). Considering the Australian context, the labour supply in an SA4-level subnational region was also chosen to represent the 'inherent attributes' of a location that affects the competitiveness of a firm.

Cluster

Consistent with prior studies (Rasel et al., 2020), the industry-specific LQ of a region is used as a measure to capture the level of industrial concentration and clusters in the host location. Industries in this study are defined based on the Australian and New Zealand Standard Industrial Classification (ANZSIC). It is a ratio between the subnational and national percentages of employment of a specific industry (O'Donoghue & Gleave, 2004). A ratio > 1 for LQ indicates that a subnational region hosts a cluster of a particular industry and firms benefit from this localization (Hervas-Oliver et al., 2018). If LQ = 1, this indicates that the region has an average concentration; if < 1, it shows that the industry is 'under-represented' in the region (O'Donoghue & Gleave, 2004). In this study, LQ is derived using industrial employment data at a subnational SA4 regional level collected from the ABS. A higher ratio of the LQ represents a higher industrial concentration in an SA4-level region in Australia, suggesting a cluster effect and the development of connectedness in the location.

Control variables

The effects of total assets, revenue and number of employees of a subsidiary are controlled in this study as they represent firm size (Arregle et al., 2013) and help firms to generate competitive advantages in a foreign market (Erramilli et al., 1997). The total number of firms in the corporate group is included in this study as a control variable to regulate the effect of the multinational experience of the parent firm. The number of firms in the corporate group enables the parent company to learn from multiple locations and this multinationality helps to reduce its liability of foreignness in the host location (Zaheer & Mosakowski, 1997). Thus, this parent company-specific advantage is controlled for in this study. State-level real income is an important dimension of regional heterogeneity within a country, and thus its effect on performance of a business is also controlled for in this study (Breau & Saillant, 2016). As firm-level data in the study span the period 2012–17, there is a year variable in the regression models to control for the unobserved time effects on performance (Rasel et al., 2020).

RESULTS

Table 1 summarizes descriptive statistics and correlation between variables.

In this sample, foreign firms from SA4 substate regions are nested within states and territories. Therefore, firms from the same region or state are less likely to be independent. We applied a multilevel mixed effect regression model in which the model has a random intercept at both the SA4 substate regions (level 2) and at state/territory level (level 3). By including shared random intercepts, this three-level mixed-effect model thus allows the within-region and within-state correlation between firms. Before the regression analysis, variables in this study have been standardized because their units are different and data are collected from two different sources. The standardized score is a commonly used technique to remove the regional effect of variables (Andrews & Martin, 2010); this then allows the pooling of firm- and location-level variables. Tables 2 and 3 present the findings from the regression analysis.

For the first hypothesis, we expected the 'inherent attributes' of a location to positively affect the performance of foreign firms. This hypothesis was partly supported when the variable is the

Table 1. Descriptive statistics.

	Mean	SD	Minimum	Maximum	1	2	3	4	5	6	7	8	9	10	11
1 ROA (firm-level variable)	1.595	21.68	−99.858	99.824	1										
2 Profit margin (firm-level variable)	5.875	26.047	−98.654	100	0.58	1									
3 Operating revenue (firm-level variable)	1.96E+05	7.50E+05	−176	2.16E+07	0.04	0	1								
4 Assets (firm-level variable)	4.14E+05	2.06E+06	0.001	7.03E+07	0	0.06	0.42	1							
5 Number of employees (firm-level variable)	566.026	1904.043	1	50,500	0.02	0.04	0.56	0.25	1						
6 State-level real income (location-level variable)	3.83E+05	1.10E+05	18,764	4.80E+05	0.07	0.06	0	0	0.03	1					
7 Number of companies in the parent company (firm-level variable)	376.918	1235.257	0	13,479	−0.01	0.02	0.03	0.06	0.03	0	1				
8 Year (firm-level variable)	2015.39	0.778	2013	2017	0.05	0.11	0.07	0.07	0.07	−0.03	0.02	1			
9 Labour force (location-level variable)	1.77E+05	69,833.903	37,809	3.21E+05	0.03	0.01	0.04	0.01	0.03	−0.06	0.02	0.03	1		
10 Patent applicants (location-level variable)	375.485	210.011	5	696	0.02	0.07	0.06	0.05	0.08	0.37	0.08	0.01	0.5	1	
11 LQ (location-level variable)	1.436	0.795	0.04	10.944	0.01	0.09	−0.05	0.05	−0.04	0.11	0.05	−0.01	−0.1	0.1	1

Note: Each variable numbered from 1 to 11 in column 1 and described in column 2 corresponds to the numbers on the top row of the correlation matrix.

Table 2. Multilevel mixed effect regression results.

Variables	(1) Australia ROA	(2) Australia ROA	(3) Australia ROA	(4) Australia Profit margin	(5) Australia Profit margin	(6) Australia Profit margin
Operating revenue (firm-level variable)	0.036** (0.014)					0.021 (0.015)
Assets (firm-level variable)		−0.006 (0.014)			0.045*** (0.014)	
Number of employees (firm-level variable)			0.012 (0.018)	−0.008 (0.014)		
State-level real income (location-level variable)	0.043 (0.028)	0.045 (0.028)	0.058** (0.024)	0.032* (0.017)	0.034** (0.017)	0.035* (0.018)
Number of companies in the parent company (firm-level variable)	−0.018 (0.015)	−0.017 (0.015)	−0.031 (0.021)	0.007 (0.017)	0.004 (0.017)	−0.015 (0.021)
Year (firm-level variable)	0.074*** (0.019)	0.077*** (0.019)	0.066*** (0.025)	0.141*** (0.020)	0.136*** (0.020)	0.082*** (0.022)
Labour force (Hypothesis 1) (location-level variable)	0.023 (0.027)	0.021 (0.027)	0.014 (0.027)	−0.011 (0.018)	−0.010 (0.018)	0.011 (0.018)
Patent applicants (Hypothesis 1) (location-level variable)	−0.038 (0.028)	−0.034 (0.029)	0.022 (0.032)	0.050*** (0.019)	0.046** (0.019)	0.035* (0.020)
Location Quotient (Hypothesis 2) (location-level variable)	0.042*** (0.015)	0.040*** (0.015)	−0.003 (0.019)	0.084*** (0.016)	0.081*** (0.016)	0.045*** (0.017)
Constant	−148.675*** (38.351)	−155.892*** (38.394)	−133.808*** (49.655)	−284.318*** (40.599)	−273.878*** (40.558)	−164.802*** (44.395)
Observations	4776	4776	2413	4270	4270	2224
Wald Chi^2	33.40***	27.48***	19.29***	104.33***	114.26***	37.53***
Group variables (number of groups)						
State	8	8	8	8	8	8
SA4 region	80	80	75	80	80	74

Notes: Numbers 1–6 in the top row signify each of the six regression models. In the first three models (1–3), ROA is the dependent variable. Profit margin is the dependent variable for the next three models (4–6).

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

Table 3. Multilevel mixed effect regression results comparing global cities with non-global city locations.

Variables	(1) Non-global city ROA	(2) Non-global city ROA	(3) Non-global city ROA	(4) Non-global city Profit margin	(5) Non-global city Profit margin	(6) Non-global city Profit margin	(7) Global city ROA	(8) Global city ROA	(9) Global city ROA	(10) Global city Profit margin	(11) Global city Profit margin	(12) Global city Profit margin
Operating revenue (firm-level variable)	0.042 (0.026)			−0.004 (0.026)			0.040** (0.018)			−0.001 (0.018)		
Assets (firm-level variable)		−0.001 (0.020)			0.020 (0.020)			−0.006 (0.019)			0.069*** (0.020)	
Number of employees (firm-level variable)			0.008 (0.023)			0.036* (0.020)			0.007 (0.028)			0.004 (0.024)
State-level real income (location-level variable)	0.056** (0.023)	0.056** (0.023)	0.056** (0.024)	0.034* (0.018)	0.035* (0.018)	0.042** (0.019)	0.062 (0.095)	0.065 (0.095)	0.087 (0.117)	−0.011 (0.100)	−0.013 (0.099)	0.011 (0.101)
Number of companies in the parent company (firm-level variable)	−0.013 (0.022)	−0.011 (0.022)	−0.041 (0.030)	−0.007 (0.024)	−0.008 (0.024)	−0.021 (0.028)	−0.021 (0.021)	−0.020 (0.021)	−0.030 (0.034)	0.015 (0.025)	0.009 (0.025)	−0.017 (0.031)
Year (firm-level variable)	0.052** (0.025)	0.056** (0.025)	0.038 (0.030)	0.073*** (0.026)	0.071*** (0.025)	0.039 (0.027)	0.095*** (0.029)	0.098*** (0.029)	0.094** (0.041)	0.215*** (0.032)	0.206*** (0.032)	0.134*** (0.037)

(Continued)

Table 3. Continued.

Variables	(1) Non-global city ROA	(2) Non-global city ROA	(3) Non-global city ROA	(4) Non-global city Profit margin	(5) Non-global city Profit margin	(6) Non-global city Profit margin	(7) Global city ROA	(8) Global city ROA	(9) Global city ROA	(10) Global city Profit margin	(11) Global city Profit margin	(12) Global city Profit margin
Labour force (location-level variable)	-0.004 (0.030)	-0.005 (0.030)	-0.013 (0.029)	-0.026 (0.020)	-0.025 (0.020)	-0.005 (0.020)	0.104 (0.075)	0.109 (0.075)	0.081 (0.089)	0.013 (0.079)	0.012 (0.078)	0.040 (0.077)
Patent applicants (location-level variable)	-0.024 (0.057)	-0.019 (0.057)	0.085 (0.056)	0.069* (0.039)	0.066* (0.038)	0.039 (0.039)	-0.096** (0.046)	-0.095** (0.046)	0.004 (0.053)	-0.016 (0.049)	-0.019 (0.048)	0.008 (0.046)
Location Quotient (Hypotheses 3 and 4) (location-level variable)	-0.027 (0.020)	-0.026 (0.020)	-0.020 (0.023)	0.002 (0.021)	-0.001 (0.021)	0.007 (0.020)	0.119*** (0.023)	0.114*** (0.023)	0.032 (0.032)	0.175*** (0.025)	0.175*** (0.025)	0.102*** (0.028)
Constant	-103.947** (50.677)	-113.610** (50.422)	-76.343 (62.128)	-147.674*** (51.659)	-143.267*** (51.295)	-79.542 (54.574)	-191.906*** (58.315)	-197.176*** (58.553)	-189.095** (82.522)	-432.916*** (63.933)	-414.825*** (63.933)	-270.948*** (73.574)
Observations	2580	2580	1358	2330	2330	1300	2196	2196	964	1940	1940	924
Wald Chi^2	15.52**	12.96*	14.02*	18.35**	19.43***	15.91**	44.81***	39.71***	8.44	99.07***	111.13***	27.97***
Group variables (number of groups):												
State	8	8	8	8	8	8	2	2	2	2	2	2
SA4 region	74	74	69	74	74	68	6	6	6	6	6	6

Notes: Numbers 1–12 in the top row signify each of the 12 regression models. The 1–6 regression models show findings from non-global city locations (ROA is the dependent variable in models 1–3 and profit margin is the dependent variable in models 4–6); and the 7–12 regression models show findings from global city locations (ROA is the dependent variable in models 7–9 and profit margin is the dependent variable in models 10–12). Standard errors are shown in parentheses.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

number of patent applicants from a location and the performance measure is profit margin (models 4–6 in Table 2). In the second hypothesis, we expected a positive effect of clusters on firm performance. The regression analysis (regression models in Table 2) shows statistically significant ($p < 0.01$) positive coefficients for LQ. The second hypothesis was thus supported.

A comparison was made between firms located in global cities and other locations of Australia through the third and fourth hypotheses (Table 3). Two Australian cities, Sydney and Melbourne, deemed as 'Alpha' ranked cities (GaWC 2020), are classified as global cities (Goerzen et al., 2013). The total number of firms in the sample located in these two cities is 2196. The total number of firms located in other Australian locations is 2580. The third hypothesis, in which we predicted clusters to positively affect foreign firm performance in global cities, was also supported. The findings (Table 3) show that the coefficients for LQ are positive and statistically significant ($p < 0.01$). However, the fourth hypothesis, in which we expected a negative effect of clusters on foreign firm performance in non-global city locations, was not supported by the regression analysis (Table 3). Although the regression findings show negative coefficients for LQ in non-global city locations, they are not statistically significant ($p > 0.1$).

Robustness, sensitivity and collinearity test

The dataset contains firms from 80 SA4 regions in Australia; firms are therefore grouped into 80 clusters. Regression errors could be correlated within each region, but should remain independent across regions; therefore, ignoring within-region correlation could affect the accuracy of the findings (Cameron & Miller, 2011, 2015). In the dataset there is a possibility of unobserved industry effect; and there should be unobserved year effects on performance. This aside, firms' performance could be changed due to some omitted factors if they are located in a specific state in Australia (e.g., Victoria's economic performance is better than other states in many respects). To control these likely error correlations, a highly dimensional fixed effects (HDFE) regression method has been implemented to check the robustness of the findings. Using HDFE, we implemented a regional-level clustered robust standard errors estimation technique, where state, time and industry sector effects were fixed. Using HDFE, we did not find any statistically significant results for 'inherent attributes' of a location. However, we found a statistically significant ($p < 0.05$) positive coefficient ($\beta = 0.0465$) for clusters. This confirms the robust effect of clusters on the performance of foreign firms.

In addition to LQ we have used Getis–Ord statistic (G_i^*) to measure the cluster in the location. The statistic is a ratio of the weighted average of employment of the relevant industry in the region and other neighbouring regions to the sum of employment of the industry. After standardization of the statistic, any positive value indicates a cluster of the industry, whereas a negative statistic means the opposite. Using the statistic as a measure of a cluster, we found the coefficients were statistically significant ($p < 0.01$) and positive in both the mixed effect and HDFE regression models. Further, we computed the variance inflation factor (VIF) to check for any collinearity in our models and found that the VIF was < 3 in every instance, suggesting no evidence of multicollinearity.

DISCUSSION AND CONCLUSIONS

This study provides empirical evidence for addressing the unresolved issue of the relationship between industrial concentration/clusters and a foreign firm's performance (Hsu et al., 2017; Ma et al., 2013). We differentiated subnational regions based on their global city status and found that the relationship is contingent upon their global connectivity.

In addition to taking into account the subnational regions' global connectivity, we decomposed location factors as 'inherent attributes' and clusters in order to explain the effect of within-country heterogeneity on the performance of foreign firms in Australia. This study has not only

sought to fill a gap in the literature but also endeavoured to initiate a discussion about the potential causes of the conflicting findings in the literature and how subnational clusters affect the performance of foreign firms. Through this comparison, this study found that clusters in subnational regions with global connectivity, that is, global cities, affect the performance of foreign firms positively, while this impact is statistically non-significant in other within-country regions. We argue that previous studies, by having omitted this global connectivity factor in their studies, allowed it to remain an unobserved variable and ultimately affected their conflicted findings.

The findings of this study have revealed that clusters in global cities have a positive impact on the performance of foreign firms located there. Clusters in global cities provide firms with the proximity to a concentration of activities that produces the infrastructure and capability of global control (Sassen, 1995). Thus, foreign firms perform better in global cities with this location-bound advantage, enabling them to better manage their global networks of business activities. Conversely, the impact of clusters in other subnational regions was found to be statistically not significant. This study has found support for the argument that the formation of locational factors is different in global cities compared with non-global city locations, and thus will likely result in different effects for foreign firm performance. The findings support a theoretical argument for a dichotomy between global and non-global cities, which suggests that, in the absence of global city functions, the cluster pattern in non-global city locations is likely to be very different compared with global cities (Sassen, 1995). The concentration of strategic resources and connectivity intensified in global city locations has seen over time a disconnect between them and other non-global city locations within the same country (Sassen, 2005b). Hence, global connectivity of subnational regions or the lack thereof adds another dimension to within-country heterogeneity.

After the decomposition of subnational location advantages into inherent attributes and clusters, we found that the impact of within-country heterogeneity on the performance of foreign firms is mainly driven by the industrial concentrations brought about by clusters. The impact of 'inherent attributes' was found to be of limited substance in this study. The study's findings highlight and suggest the importance of clusters in helping alleviate foreign firms' unfamiliarity and a 'lack of information networks' in the host country (Zaheer & Mosakowski, 1997, pp. 439–440). The presence of clusters may motivate foreign firms to collocate in close proximity, embedding them in the local structure (Mezias, 2002), providing for engagement and relationships with local actors. This helps reduce the liability of foreignness (Zaheer, 1995) and the competitive disadvantage that foreign firms face in host markets, thus helping them improve their performance in the host country.

In international business, the global city as a dominant investment destination with localized advantages has received adequate attention in the analyses of the location choices of foreign firms (e.g., Belderbos et al., 2020). Our findings in this study have further contributed to this discourse by showing that agglomeration effects resulting from cluster formation in global cities positively affect the performance of foreign firms. It strengthens the overall argument as to why foreign firms are more likely to locate their businesses in global cities.

This study has also helped overcome the problem of methodological nationalism in the international business literature (Dai et al., 2013) by comparing location advantage effects, specifically those of clusters, between global and non-global city locations *within a country*. Cluster effects on the performance of foreign firms was found to vary depending on the subnational regions' global connectivity. This suggests that subnational regions are heterogeneous not only in terms of their localized cluster concentrations but also as a result of their global connectivity. In other words, global connectivity adds another dimension in the discussion of location advantages to be found in regions within a country.

While business activities tend to be spatially clustered, Gordon and McCann (2000) state that different activities concentrate in different locations with a certain level of industrial

specialization which provides localized increasing returns to scale. This study has shown that clusters in a global city environment where diversified activities are concentrated are beneficial for foreign firms. Conversely, the effect of such specialized clusters in non-global city locations, meaning in less diversified clusters, remains inconclusive. As a location's attractiveness is assessed based on its ability to improve firm competitiveness (Porter, 1994), policymakers need to diversify the offerings of regional economies to attract foreign investment through initiatives that exploit the location advantages that these regions have to offer (Kalfadellis, 2015).

This study has demonstrated the importance of global connectivity and concentration of diversified activities in defining regional competitiveness. A number of limitations evident in this study provide avenues for future research. The lack of data availability could only support a cross-sectional analysis. Future studies can take a more longitudinal perspective and examine the role of global connectivity over a longer time period. This study defined subnational locations based on administrative boundaries in Australia. It would be interesting to replicate a similar study that looked at global and non-global city-regions in other countries. For example, do non-global city locations, such as special economic zones, result in similar findings? We compared the impact of global and non-global city locational factors on the financial performance of a firm. Due to data unavailability, we could not investigate the impact on this relationship on a broader notion of firm performance (Venkatraman & Ramanujam, 1986). Future studies can also look to include a variety of performance measures to see how wide is the effect of clusters on firm-level performance in global cities. Finally, we could not include knowledge flow in a region in this study. Future studies may consider including a measure of knowledge flow or spillover and examine its impact on firm-level performance in global and non-global city locations. This study has contributed to our knowledge of economic space by providing an explanation as to why foreign firm performance as a result of cluster effects is likely to vary between global and non-global city locations within a country.

ACKNOWLEDGEMENTS

DISCLOSURE STATEMENT

FUNDING

ORCID

Sharif Rasel http://orcid.org/0000-0001-8896-4442
Paul Kalfadellis http://orcid.org/0000-0001-6245-4073

REFERENCES

Agnes, P. (2000). The "end of geography" in financial services? Local embeddedness and territorialization in the interest rate swaps industry. *Economic Geography*, *76*(4), 347–366. https://doi.org/10.2307/144391

Andrews, R., & Martin, S. (2010). Regional variations in public service outcomes: The impact of policy divergence in England, Scotland and Wales. *Regional Studies*, *44*(8), 919–934. https://doi.org/10.1080/00343400903401592

Ansar, A. (2013). Location decisions of large firms: Analyzing the procurement of infrastructure services. *Journal of Economic Geography*, *13*(5), 823–844. https://doi.org/10.1093/jeg/lbs042

Antonelli, C., Patrucco, P. P., & Quatraro, F. (2011). Productivity growth and pecuniary knowledge externalities: An empirical analysis of agglomeration economies in European regions. *Economic Geography*, *87*(1), 23–50. https://doi.org/10.1111/j.1944-8287.2010.01104.x

Arregle, J.-L., Miller, T. L., Hitt, M. A., & Beamish, P. W. (2013). Do regions matter? An integrated institutional and semiglobalization perspective on the internationalization of MNEs. *Strategic Management Journal*, *34*(8), 910–934. https://doi.org/10.1002/smj.2051

A.T. Kearney. (2019). *A question of talent: how human capital will determine the next global leaders: 2019 global cities report*. https://www.kearney.com/documents/20152/4977718/A+Question+of+Talent%E2%80%942019+Global+Cities+Report.pdf/106f30b1-83db-25b3-2802-fa04343a36e4?t=1578677670798

Australian Bureau of Statistics (ABS). (2020a). *1345.0 – Key economic indicators, summary*. https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1345.0?opendocument?opendocument

Australian Bureau of Statistics (ABS). (2020b). *3218.0 – Regional population growth, Australia, 2018–19*. https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3218.0

Baptista, R., & Swann, P. (1998). Do firms in clusters innovate more? *Research Policy*, *27*(5), 525–540. https://doi.org/10.1016/S0048-7333(98)00065-1

Beaverstock, J. V., Smith, R. G., & Taylor, P. J. (1999). A roster of world cities. *Cities*, *16*(6), 445–458. https://doi.org/10.1016/S0264-2751(99)00042-6

Beenstock, M., & Felsenstein, D. (2010). Marshallian theory of regional agglomeration. *Papers in Regional Science*, *89*(1), 155–172. https://doi.org/10.1111/j.1435-5957.2009.00253.x

Beer, A., Maude, A., & Pritchard, B. (2003). *Developing Australia's regions: Theory and practice*. UNSW Press.

Belderbos, R., Du, H. S., & Slangen, A. (2020). When do firms choose global cities as foreign investment locations within countries? The roles of contextual distance, knowledge intensity, and target-country experience. *Journal of World Business*, *55*(1), 101022. https://doi.org/10.1016/j.jwb.2019.101022

Beugelsdijk, S., McCann, P., & Mudambi, R. (2010). Introduction: Place, space and organization– economic geography and the multinational enterprise. *Journal of Economic Geography*, *10*(4), 485–493. https://doi.org/10.1093/jeg/lbq018

Blevins, D. P., Moschieri, C., Pinkham, B. C., & Ragozzino, R. (2016). Institutional changes within the European Union: How global cities and regional integration affect MNE entry decisions. *Journal of World Business*, *51*(2), 319–330. https://doi.org/10.1016/j.jwb.2015.11.007

Breau, S., & Saillant, R. (2016). Regional income disparities in Canada: Exploring the geographical dimensions of an old debate. *Regional Studies, Regional Science*, *3*(1), 463–481. https://doi.org/10.1080/21681376.2016.1244774

Breschi, S., & Lissoni, F. (2001). Localised knowledge spillovers vs. innovative milieux: Knowledge "tacitness" reconsidered. *Papers in Regional Science*, *80*(3), 255–273. https://doi.org/10.1007/PL00013627

Buckley, P. J. (2016). The contribution of internalisation theory to international business: New realities and unanswered questions. *Journal of World Business*, *51*(1), 74–82. https://doi.org/10.1016/j.jwb.2015.08.012

Cameron, A. C., & Miller, D. L. (2011). Robust inference with clustered data. In A. Ullah & D. E. A. Giles (Eds.), *Handbook of empirical economics and finance* (pp. 1–28). CRC Press LLC.

Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources*, *50*(2), 317–372. https://doi.org/10.3368/jhr.50.2.317

Cantwell, J., & Narula, R. (2003). Revisiting the eclectic paradigm: New developments and current issues. In J. Cantwell & R. Narula (Eds.), *International business and the eclectic paradigm: Developing the OLI framework* (pp. 1–24). Routledge.

Casson, M. (2014). The economic theory of the firm as a foundation for international business theory. *Multinational Business Review*, *22*(3), 205–226. https://doi.org/10.1108/MBR-06-2014-0024

Castells, M. (1996). *The information age: Economy, society and culture. Vol. I. The rise of the network society*. Blackwell Publishers.

Chen, Y. (2009). Agglomeration and location of foreign direct investment: The case of China. *China Economic Review*, *20*(3), 549–557. https://doi.org/10.1016/j.chieco.2009.03.005

Ciccone, A., & Hall, R. E. (1996). Productivity and the density of economic activity. *The American Economic Review*, *86*(1), 54–70. http://www.jstor.org/stable/2118255

Criscuolo, P., Narula, R., & Verspagen, B. (2005). Role of home and host country innovation systems in R&D internationalisation: A patent citation analysis. *Economics of Innovation and New Technology*, *14*(5), 417–433. https://doi.org/10.1080/1043859042000315285

Dai, L., Eden, L., & Beamish, P. W. (2013). Place, space, and geographical exposure: Foreign subsidiary survival in conflict zones. *Journal of International Business Studies*, *44*(6), 554–578. https://doi.org/10.1057/jibs.2013.12

Dau, L. A. (2013). Learning across geographic space: Pro-market reforms, multinationalization strategy, and profitability. *Journal of International Business Studies*, *44*(3), 235–262. https://doi.org/10.1057/jibs.2013.5

Diez-Vial, I. (2011). Geographical cluster and performance: The case of Iberian ham. *Food Policy*, *36*(4), 517–525. https://doi.org/10.1016/j.foodpol.2011.04.002

Doel, M., & Hubbard, P. (2002). Taking world cities literally: Marketing the city in a global space of flows. *City*, *6*(3), 351–368. https://doi.org/10.1080/1360481022000037779

Dunning, J. H. (2009). Location and the multinational enterprise: A neglected factor? *Journal of International Business Studies*, *40*(1), 5–19. https://doi.org/10.1057/jibs.2008.74

Erden, Z., Klang, D., Sydler, R., & von Krogh, G. (2014). Knowledge-flows and firm performance. *Journal of Business Research*, *67*(1), 2777–2785. https://doi.org/10.1016/j.jbusres.2012.09.001

Eriksson, R. H. (2011). Localized spillovers and knowledge flows: How does proximity influence the performance of plants? *Economic Geography*, *87*(2), 127–152. https://doi.org/10.1111/j.1944-8287.2011.01112.x

Erramilli, M. K., Agarwal, S., & Seong-Soo, K. (1997). Are firm-specific advantages location-specific too? *Journal of International Business Studies*, *28*(4), 735–757. https://doi.org/10.1057/palgrave.jibs.8490117

Fingleton, B. (2003). Externalities, economic geography, and spatial econometrics: Conceptual and modeling developments. *International Regional Science Review*, *26*(2), 197–207. https://doi.org/10.1177/0160017602250976

Folta, T. B., Cooper, A. C., & Baik, Y.-S. (2006). Geographic cluster size and firm performance. *Journal of Business Venturing*, *21*(2), 217–242. https://doi.org/10.1016/j.jbusvent.2005.04.005

Friedmann, J. (1986). The world city hypothesis. *Development and Change*, *17*(1), 69–83. https://doi.org/10.1111/j.1467-7660.1986.tb00231.x

Fujita, M., & Mori, T. (2005). Frontiers of the new economic geography. *Papers in Regional Science*, *84*(3), 377–405. https://doi.org/10.1111/j.1435-5957.2005.00021.x

Fujita, M., & Thisse, J.-F. (1996). Economics of agglomeration. *Journal of the Japanese and International Economies*, *10*(4), 339–378. https://doi.org/10.1006/jjie.1996.0021

GaWC. (2020). *The world according to GaWC 2020*. https://www.lboro.ac.uk/gawc/world2020.html

Geddes, P. (1915). Cities in evolution, an introduction to the town planning movement and to the study of civics. London: Williams and Norgate.

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., & Shleifer, A. (1992). Growth in cities. *Journal of Political Economy*, *100*(6), 1126–1152. https://doi.org/10.1086/261856

Goerzen, A., Asmussen, C. G., & Nielsen, B. B. (2013). Global cities and multinational enterprise location strategy. *Journal of International Business Studies*, *44*(5), 427–450. https://doi.org/10.1057/jibs.2013.11

Goldeng, E., Grünfeld, L. A., & Benito, G. R. G. (2008). The performance differential between private and state owned enterprises: The roles of ownership, management and market structure. *Journal of Management Studies*, *45*(7), 1244–1273. https://doi.org/10.1111/j.1467-6486.2008.00790.x

Gomes, L., & Ramaswamy, K. (1999). An empirical examination of the form of the relationship between multi-nationality and performance. *Journal of International Business Studies*, *30*(1), 173–187. https://doi.org/10.1057/palgrave.jibs.8490065

Gordon, I. R., & McCann, P. (2000). Industrial clusters: Complexes, agglomeration and/or social networks? *Urban Studies*, *37*(3), 513–532. https://doi.org/10.1080/0042098002096

Graves, S. B., & Waddock, S. A. (1994). Institutional owners and corporate social performance. *The Academy of Management Journal*, *37*(4), 1034–1046. https://doi.org/10.5465/256611

Hall, P. (1966). *The world cities*. Weidenfeld and Nicolson.

Hervas-Oliver, J.-L., Sempere-Ripoll, F., Rojas Alvarado, R., & Estelles-Miguel, S. (2018). Agglomerations and firm performance: Who benefits and how much? *Regional Studies*, *52*(3), 338–349. https://doi.org/10.1080/00343404.2017.1297895

Hodgkinson, A., Nyland, C., & Pomfret, S. (2001). The determination of location in New South Wales. *Regional Studies*, *35*(1), 39–55. https://doi.org/10.1080/00343400120025664

Holl, A., & Rama, R. (2016). The spatial distribution of foreign direct investment in R&D within host countries. An empirical examination of foreign subsidiaries in Spain. *International Journal of Multinational Corporation Strategy*, *1*(1), 65–86. https://doi.org/10.1504/IJMCS.2016.076663

Hsu, C.-W., Chen, H., & Caskey, D. A. (2017). Local conditions, entry timing, and foreign subsidiary performance. *International Business Review*, *26*(3), 544–554. https://doi.org/10.1016/j.ibusrev.2016.11.005

Hult, G. T. M., Ketchen, D. J., Jr., Griffith, D. A., Chabowski, B. R., Hamman, M. K., Dykes, B. J., Pollitte, W., & Cavusgil, S. T. (2008). An assessment of the measurement of performance in international business research. *Journal of International Business Studies*, *39*(6), 1064–1080. https://doi.org/10.1057/palgrave.jibs.8400398

Jonas, A. E. G., & Ward, K. (2007). There's more than one way to be 'serious' about city-regions. *International Journal of Urban and Regional Research*, *31*(3), 647–656. https://doi.org/10.1111/j.1468-2427.2007.00744.x

Kalfadellis, P. (2015). Location advantages and repeat investment in Australia: A two-state comparison. *Regional Studies*, *49*(7), 1140–1159. https://doi.org/10.1080/00343404.2013.808321

Kotabe, M., Srinivasan, S. S., & Aulakh, P. S. (2002). Multinationality and firm performance: The moderating role of R&D and marketing capabilities. *Journal of International Business Studies*, *33*(1), 79–97. https://doi.org/10.1057/palgrave.jibs.8491006

Krugman, P. (1993). First nature, second nature, and metropolitan location. *Journal of Regional Science*, *33*(2), 129–144. https://doi.org/10.1111/j.1467-9787.1993.tb00217.x

Lüthi, S., Thierstein, A., & Goebel, V. (2010). Intra-firm and extra-firm linkages in the knowledge economy: The case of the emerging mega-city region of Munich. *Global Networks*, *10*(1), 114–137. https://doi.org/10.1111/j.1471-0374.2010.00277.x

Ma, X., Tong, T. W., & Fitza, M. (2013). How much does subnational region matter to foreign subsidiary performance? Evidence from fortune global 500 corporations' investment in China. *Journal of International Business Studies*, *44*(1), 66–87. https://doi.org/10.1057/jibs.2012.32

Makino, S., Isobe, T., & Chan, C. M. (2004). Does country matter? *Strategic Management Journal*, *25*(10), 1027–1043. https://doi.org/10.1002/smj.412

Mariotti, S., Piscitello, L., & Elia, S. (2010). Spatial agglomeration of multinational enterprises: The role of information externalities and knowledge spillovers. *Journal of Economic Geography*, *10*(4), 519–538. https://doi.org/10.1093/jeg/lbq011

Martinus, K., & Sigler, T. J. (2018). Global city clusters: Theorizing spatial and non-spatial proximity in inter-urban firm networks. *Regional Studies*, *52*(8), 1041–1052. https://doi.org/10.1080/00343404.2017.1314457

McDonald, C., Buckley, P. J., Voss, H., Cross, A. R., & Chen, L. (2018). Place, space, and foreign direct investment into peripheral cities. *International Business Review*, *27*(4), 803–813. https://doi.org/10.1016/j.ibusrev.2018.01.004

Mckenzie, R. (1927). The concept of dominance and world-organisation. American Journal of Sociology, *33*, 28–42. https://doi.org/10.1086/214331

Mezias, J. M. (2002). Identifying liabilities of foreignness and strategies to minimize their effects: The case of labor lawsuit judgments in the United States. *Strategic Management Journal*, *23*(3), 229–244. https://doi.org/10.1002/smj.220

Nachum, L. (2000). Economic geography and the location of TNCs: Financial and professional service FDI to the USA. *Journal of International Business Studies*, *31*(3), 367–385. https://doi.org/10.1057/palgrave.jibs.8490912

Nachum, L., & Wymbs, C. (2005). Product differentiation, external economies and MNE location choices: M&As in global cities. *Journal of International Business Studies*, *36*(4), 415–434. https://doi.org/10.1057/palgrave.jibs.8400151

Narula, R., & Santangelo Grazia, D. (2012). Location and collocation advantages in international innovation. *Multinational Business Review*, *20*(1), 6–25. https://doi.org/10.1108/15253831211217161

Nielsen, B. B., Asmussen, C. G., & Weatherall, C. D. (2017). The location choice of foreign direct investments: Empirical evidence and methodological challenges. *Journal of World Business*, *52*(1), 62–82. https://doi.org/10.1016/j.jwb.2016.10.006

O'Donoghue, D., & Gleave, B. (2004). A note on methods for measuring industrial agglomeration. *Regional Studies*, *38*(4), 419–427. https://doi.org/10.1080/03434002000213932

Organisation for Economic Co-operation and Development (OECD). (2016). *OECD regions at a glance 2016*. OECD Publ.

Pain, K. (2017). World cities. In D. Richardson, N. Castree, M. F. Goodchild, A. L. Kobayashi, W. Liu, & R. Marston (Eds.), *International encyclopedia of geography: People, the earth, environment, and technology* (pp. 1–9). Wiley-Blackwell.

Pain, K., Van Hamme, G., Vinciguerra, S., & David, Q. (2016). Global networks, cities and economic performance: Observations from an analysis of cities in Europe and the USA. *Urban Studies*, *53*(6), 1137–1161. https://doi.org/10.1177/0042098015577303

Porter, M. E. (1994). The role of location in competition. *International Journal of the Economics of Business*, *1*(1), 35–40. https://doi.org/10.1080/758540496

Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, *76*(6), 77–90. http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=1246493&site=ehost-live

Porter, M. E. (2003). The economic performance of regions. *Regional Studies*, *37*(6–7), 549–578. https://doi.org/10.1080/0034340032000108688

Pouder, R., & St. John, C. H. (1996). Hot spots and blind spots: Geographical clusters of firms and innovation. *Academy of Management Review*, *21*(4), 1192–1225. https://doi.org/10.5465/amr.1996.9704071867

Rasel, S., Abdulhak, I., Kalfadellis, P., & Heyden, M. L. M. (2020). Coming home and (not) moving in? Examining reshoring firms' subnational location choices in the United States. *Regional Studies*, *54*(5), 704–718. https://doi.org/10.1080/00343404.2019.1669784

Redding, S. J. (2010). The empirics of new economic geography. *Journal of Regional Science*, *50*(1), 297–311. https://doi.org/10.1111/j.1467-9787.2009.00646.x

Rosen-Zvi, I., Birnhack, M., Toch, E., & Zur, H. (2018). The political premises of contemporary urban concepts: The global city, the sustainable city, the resilient city, the creative city, and the smart city AU – Hatuka, Tali. *Planning Theory & Practice*, *19*(2), 160–179. https://doi.org/10.1080/14649357.2018.1455216

Roy, A. (2009). The 21st-century metropolis: New geographies of theory. *Regional Studies*, *43*(6), 819–830. https://doi.org/10.1080/00343400701809665

Sanders, W. M. G., & Carpenter, M. A. (1998). Internationalization and firm governance: The roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal*, *41*(2), 158–178. https://doi.org/10.5465/257100

Sassen, S. (1991). *The global city: New York, London, Tokyo, Princeton*. Princeton University Press.

Sassen, S. (1994). *Cities in a world economy*. Sage.

Sassen, S. (1995). On concentration and centrality in the global city. In P. L. Knox & P. J. Taylor (Eds.), *World cities in a world-system*. Cambridge University Press.

Sassen, S. (2000). The global city: Strategic site/new frontier. *American Studies*, *41*(2/3), 79–95. https://www.jstor.org/stable/40643231

Sassen, S. (2005a). The global city: Introducing a concept. *Brown Journal of World Affairs*, *11*(2), 27–44. https://www.jstor.org/stable/24590544

Sassen, S. (2005b). The global city: Strategic site, new frontier. In M. Keiner, M. Koll-Schretzenmayr, & W. A. Schmind (Eds.), *Managing urban futures: Sustainability and urban growth in developing countries* (pp. 73–88). Ashgate.

Sassen, S. (2007). Whither global cities: The analytics and the debates. In J. R. Bryson & P. W. Daniels (Eds.), *The handbook of service industries* (pp. 186–208). Edward Elgar.

Sassen, S. (2011). When cities become strategic. *Architectural Design*, *81*(3), 124–127. https://doi.org/10.1002/ad.1250

Sassen, S. (2012). *Cities in a world economy*. Sage.

Sassen, S. (2016). The global city: Enabling economic intermediation and bearing its costs. *City & Community*, *15*(2), 97–108. https://doi.org/10.1111/cico.12175

Scott, A. (2001a). *Global city-regions: Trends, theory, policy*. Oxford University Press.

Scott, A. (2001b). Globalization and the rise of city-regions. *European Planning Studies*, *9*(7), 813–826. https://doi.org/10.1080/09654310120079788

SGS Economics and Planning. (2019). *Economic performance of Australia's cities and regions*. https://www.sgsep.com.au/assets/main/Publications/SGS-Economics-and-Planning_Economic-Performance-of-Australian-Cities-and-Regions.pdf

Singh, J. (2005). Collaborative networks as determinants of knowledge diffusion patterns. *Management Science*, *51*(5), 756–770. https://doi.org/10.1287/mnsc.1040.0349

Stuart, T., & Sorenson, O. (2003). The geography of opportunity: Spatial heterogeneity in founding rates and the performance of biotechnology firms. *Research Policy*, *32*(2), 229–253. https://doi.org/10.1016/S0048-7333(02)00098-7

Tabuchi, T. (1998). Urban agglomeration and dispersion: A synthesis of Alonso and Krugman. *Journal of Urban Economics*, *44*(3), 333–351. https://doi.org/10.1006/juec.1997.2074

Tonts, M., & Taylor, M. (2013). The shifting geography of corporate headquarters in Australia: A longitudinal analysis. *Regional Studies*, *47*(9), 1507–1522. https://doi.org/10.1080/00343404.2011.624511

Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *Academy of Management Review*, *11*(4), 801–814. https://doi.org/10.5465/amr.1986.4283976

Xiao-Ping, Z. (1998). Measuring optimal population distribution by agglomeration economies and diseconomies: A case study of Tokyo. *Urban Studies*, *35*(1), 95–112. https://doi.org/10.1080/0042098985096

Zaheer, S. (1995). Overcoming the liability of foreignness. *Academy of Management Journal*, *38*(2), 341–363. https://doi.org/10.5465/256683

Zaheer, S., & Mosakowski, E. (1997). The dynamics of the liability of foreignness: A global study of survival in financial services. *Strategic Management Journal*, *18*(6), 439–463. https://doi.org/10.1002/(SICI)1097-0266(199706)18:6<439::AID-SMJ884>3.0.CO;2-Y

Zhao, W., Watanabe, C., & Griffy-Brown, C. (2009). Competitive advantage in an industry cluster: The case of Dalian Software Park in China. *Technology in Society*, *31*(2), 139–149. https://doi.org/10.1016/j.techsoc.2009.03.008