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Airbnb and micro-entrepreneurship in regional economies: Lessons from Australia

Sirat Mahmuda[1] | **Thomas Sigler**[1] | **Jonathan Corcoran**[1] | **Eric Knight**[2]

[1]School of Earth and Environmental Sciences, The University of Queensland, Brisbane, Queensland, Australia

[2]Macquarie Business School, Macquarie University, Sydney, New South Wales, Australia

Correspondence
Sirat Mahmuda, School of Earth and Environmental Sciences, The University of Queensland, Brisbane, Queensland, Australia.
Email: s.mahmuda@uq.edu.au

Funding information
School of Earth and Environmental Sciences, The University of QueenslandUniversity of Sydney Business School

Abstract

Having begun as a short-term rental platform in major cities, Airbnb has now extended to many remote and regional areas of Australia. One effect of this spread has been disruption to the conventional rental industry, which stimulates micro-entrepreneurship in local communities directly through short-term accommodation and indirectly through related industries. Given Australia's core–periphery settlement structure, resulting from the country's historical development, disruption through entrepreneurship has relatively more potential in remote and regional areas. This article uses the Porter diamond model to explain how Airbnb-led micro-entrepreneurship interacts with territorially embedded socioeconomic characteristics across regional and remote Australia. Drawing on Airbnb data for Australia between 2014 and 2018 at the scale of regional labour markets, we use a quantile regression model to explain the association between Airbnb-led micro-entrepreneurship and four distinct structural dimensions between metropolitan and non-metropolitan regions. The analysis provides evidence that non-metropolitan regions have certain stronger competitive advantages for attracting Airbnb-led micro-entrepreneurship compared with metropolitan regions, particularly across regional cities and in areas associated with mining, agriculture, and tourism. We conclude that policymakers should weigh concerns relating to peer-to-peer accommodation in major metropolitan regions against the purported benefits to peripheral regions.

KEYWORDS

Airbnb, competitive advantages, micro-entrepreneurship, sharing economy, short-term accommodation rentals, visitor economy

1 | INTRODUCTION

Metropolitan primacy has been a key characteristic of Australian settlement, with large cities such as Sydney, Melbourne, Brisbane, and Perth containing the majority share of both population and economic activity (Ellem, 2015; Forster, 2004; Sigler & Martinus, 2017). Outside these major centres, there are relatively fewer jobs and opportunities for entrepreneurship and investment are sparser, particularly as manufacturing has eroded in favour of the largely urbanised advanced services economy (Barth et al., 2015; Bec et al., 2018; Cheer, 2018; Martinus, 2018).

Expressed as the ability of a system to cope with change and innovate (Bec et al., 2018; Cheer, 2018), regional resilience is often reinforced by the presence of a visitor economy. Within the visitor economy, a comparatively newer enabler of change is a set of web-based short-

term rental platforms, and Airbnb is a particular example of that. Such platforms work as vehicles for innovation by creating micro-entrepreneurship opportunities that empower individuals (Botsman & Rogers, 2010; Sigala & Dolnicar, 2017; Sundararajan, 2014) and small businesses otherwise limited by geographical circumstances to make idle assets and spaces available to consumers, particularly in areas with few mainstream commercial outlets. In the case of short-term rental platforms such as Airbnb, micro-entrepreneurs offer unused or underutilised residential spaces to those in a wider market to boost their livelihoods. Such strategies in turn can activate multiplier effects in the local economy and enhance other related industries (Balding et al., 2012; Nazariadli et al., 2019; Sigala & Dolnicar, 2017).

Against a backdrop of the contrasting relationship between Australian cities and regions in terms of innovative capacity, in this article we investigate the competitive advantages underlying Airbnb-led micro-entrepreneurship at the labour market scale (Statistical Area Level 3, or SA3) in regional and remote (peripheral) Australia. Drawing on Airbnb listing data for Australia from 2014 to 2018, we have employed both ordinary least squares (OLS) and quantile regression analysis to model the factors that drive this transformative change towards commercialisation of residential space and its adoption in the peripheries. Analysing both the conditional mean and conditional quantiles has captured a much richer and focused view of this relationship (Bianchi et al., 2018; Koenker et al., 2018). In the process, we have investigated the group difference between Australia's metropolitan centres and remote and regional areas to explain the growth of Airbnb listings per thousand dwellings. Although several papers have investigated the relationship between various supply-side and demand-side factors and the emergence of sharing economy activities (Adamiak, 2018; Hu, 2019; D. Wang et al., 2016), considerably less attention has been given to how this relationship plays out in regions, particularly where such economic peripheries are contrasted against metropolitan centres.

Key insights

The study presents three key findings. First, there is evidence of a core–periphery relationship in the distributions of Airbnb-led micro-entrepreneurship particularly in distinguishing the resources-oriented capital cities of Brisbane, Perth, Darwin, and other hubs. Second, non-metropolitan regions exhibit higher competitiveness for Airbnb-led micro-entrepreneurship compared with the metropolitan regions at the mean function and at the highest quantile. Third, there is greater potential for Airbnb-led micro-entrepreneurship in non-metropolitan tourist regions with relatively stronger local economies.

2 | AIRBNB AND THE SHARING ECONOMY

Since its inception in 2008, Airbnb has become a global phenomenon. By January 2019, Airbnb had hosted 500 million guest arrivals to become the world's leading short-term accommodation sharing platform (Airbnb, 2019; Gallagher, 2017). In terms of number of unique properties listed in the platform, Airbnb grew from 2,500 properties in 2009 to over seven million in October 2019 in more than 100,000 cities worldwide (Airbnb, 2019; Caulfield, 2010).

Although Airbnb initially grew as a small-scale user-led phenomenon, the platform has transitioned to commercial entities, including serviced apartments (Farnsworth, 2018; Shuttleworth, 2017). The transition indicates that traditional short-term accommodation industry businesses use the platform to reach a wider customer base. As it orients towards increasingly commercial uses, the platform has the potential to catalyse innovation in remote and regional areas by allowing micro-entrepreneurs greater engagements with the local visitor economy. Sundararajan (2014) and others have noted that such platforms provide people with relatively low-risk micro-entrepreneurial opportunities to acquire early career experiences in such ventures and generate supplemental income, extend expertise, and create a broader professional network. In addition, these "micro-hoteliers" give rise to entrepreneurial opportunities for ancillary service providers such as cleaners, housekeepers, gardeners, and couriers and enable profit maximisation assistance with interior decoration, search engine optimisation, and so on (Sigala & Dolnicar, 2017).

In Australia, Airbnb guests contribute AU$1.6 billion to the nation's gross domestic product (GDP) (Farnsworth, 2018). Between July 2016 and February 2019, there were 346,581 unique Airbnb listings in Australia (Sigler & Panczak, 2020). Gurran et al. (2020) have studied the externalities associated with increasing presence of Airbnb at the community level in 12 communities in coastal Australia. They have found that despite having exacerbated negative neighbourhood and gentrification effects in dense residential communities, communities benefit from latent holiday homes supplies on Airbnb platforms during tourist seasons. Grimmer

et al. (2019) have reviewed the policy response of the Tasmanian government in the face of rising Airbnb penetration in the state, arguing that current permit system from local councils for Airbnb listings is an exemplary policy approach promoting tourism. Alizadeh et al. (2018) have investigated the socioeconomic patterns of Airbnb hosts in Sydney and Melbourne and found that hosting is a phenomenon associated with affluence, higher education, and managerial jobs. Volgger et al. (2019) have used a logistic regression model to study how consumer characteristics of Airbnb guests change over time and observed both that regional stays are on the rise and that, rather than moving towards a competitive market, Airbnb is on the way to become the single player in the web-based short-term rental arena.

3 | CONCEPTUAL FRAMEWORK

Various terminologies have been applied to economic peripheries, which, in Australia, often correspond with non-metropolitan regions (Cheer, 2018; Wilson et al., 2015). For this study, we have used the term *region* to denote Australian peripheries that are non-metropolitan, indicating a combination of smaller cities, and rural and remote areas. This stands in contrast to large state capital cities such as Sydney, Melbourne, Brisbane, and Perth, which contain the bulk of the population and economic activity.

Distance from state capitals is often viewed as a limiting factor for those in regional areas, impeding their competitiveness, level of service provision, and lifestyle opportunities (Barth et al., 2015; Cheer, 2018). The Australian remoteness classification—a statistical geographic classification—is based on access to services, which decline steadily with distance from a state capital city or regional centre (Australian Bureau of Statistics [ABS], 2016). Over time, this peripherality has framed the nature of socioeconomic advantages available to non-metropolitan regions and shaped their adaptive capacities (Barth et al., 2015; Blainey, 1966; Cheer, 2018).

Distance plays a twofold role in the process of adoption of Airbnb platform by the host. On one hand, proximity to the customer and accessibility to infrastructure are crucial when we view adoption of the platform from its demand side—in this case Airbnb guest. Accessibility to a resource —to the property from the demand side—is represented by distance from major transport hubs. Batty (2009, p. 192) has defined accessibility as "how proximate or 'near' an individual is to opportunities"—in this case visitors. On the other hand, from the supply side—in this case the Airbnb host as the micro-entrepreneur—proximity to opportunities depends on the adopter's capabilities, which are embedded in the social system in which a host resides. Being able to access the internet is not enough for a host (Lee et al., 2018; Warf, 2012); digital literacy—skills, knowledge, and familiarity with digital technology—is an important criterion and so is the ability to operate the platform successfully (Park, 2017; Thakuriah et al., 2016; World Economic Forum, 2017). Nijkamp (2017) and Park (2017) have both argued that access to, and levels of, use of internet-based technologies vary from region to region and between locations in the same region and depend on socio-demographic characteristics. Hence, accessibility (to opportunities), as Batty (2009) terms it, is embedded in the social systems.

Airbnb-led micro-entrepreneurship may also play a key role in increasing the innovation capacity in regions, yielding broader benefits for regional economies (Mao, 2014). Micro-entrepreneurs engage in more efficient production generating greater levels of output created from the same amount of physical assets and labour (Sundararajan, 2014). Beginning with such relatively low-risk micro-entrepreneurship may lead to broader initiatives, including inter-sectoral endeavours such as agrotourism (Cheer, 2018; Mao, 2014; Sundararajan, 2014).

4 | PORTER DIAMOND MODEL OF COMPETITIVE ADVANTAGES

Scholars have tended to frame and examine competitiveness of countries and regions in the visitor economy in terms of the Porter diamond model. The diamond model has been an important basis from which to build our analysis because of its ongoing relevance in anchoring literature about regional competitiveness that brings together firm- and industry-level analyses (Kharub & Sharma, 2017). Porter's diamond model focuses on regions' exogenous and endogenous "competitive advantages." It identifies those attributes—factor conditions, demand conditions, related and supporting industries, and firm strategies—that shape the contexts in which an industry grows and competes for business (Kolosinska et al., 2018; Porter, 1990, 1998; Stimson et al., 2006). Although the model is subject to criticisms (Vlados, 2019), it is relevant to our study because of our interest in the sharing economy and the model's capacity to bring dynamic exogenous conditions alongside firm-level dynamics.

The model has particularly useful for our focus on the tourism industry, which consists of a fragmented structure comprising small to medium enterprises (SMEs). In Australia, small business is defined as business employing less than 20 people and characterised by independent ownership and operations and operating capital mostly contributed by the owners/managers.

Contrastingly, medium businesses employ more than 20 but less than 200 people (ABS, 2001) and network of related participants (Esen & Uyar, 2012; Fundeanu, 2015; Mao, 2014). Several scholars have applied Porter's diamond model to look at the competitiveness of the tourism industry in diverse locations (Abrahao et al., 2017; Cheer, 2018; Fundeanu, 2015; Kolosinska et al., 2018; Mao, 2014). Hence, the Porter model has been used to study the competitive advantages of both countries and regions.

Porter (1990) has devised four broad forces that shape the competitive advantages of regions for particular industries (Kolosinska et al., 2018; Porter, 1990, 1998; Stimson et al., 2006):

> Factor conditions—the necessary infrastructure, resources, and skills to create competition in the visitor economy. In other words, spatial characteristics that contribute to a region's tourism attraction are considered as factor conditions.
>
> Demand conditions—the demand for the product or services in the global and internal market. As we focus on a web-based platform related to the visitor economy, conditions that elevate demand for Airbnb listings in the global market are more important.
>
> Related and supporting industries—the industries that support a particular industry in terms of logistics or complimentary services and thus influence its competitiveness.
>
> Firm strategy, structure, and rivalry—the conditions in a nation/region governing how companies are created, organised, and managed, and the nature of domestic rivalry.

Figure 1 shows different components of the Porter diamond model. These four determinants in the diamond and interactions among them create the forces that shape the likelihood, direction, and speed by which entrepreneurs (that is, Airbnb-led micro-entrepreneurs) adopt an innovation (in this case the Airbnb), participate in the platform, and later create competition in regions.

Porter has also recognised two other factors that significantly affect competitive advantages—the role of governments and the role of chance. The chance component denotes conditions that affect the competitive advantages of regions but are beyond the control of the region and nation in concern. Governments can influence the development of related and supporting industries—such as support to sustain the hospitality industry during the COVID-19 pandemic—that, in the long run, would sustain the industry complementing Airbnb prevalence. Governments can also control the firm strategy, structure, and rivalry components of the diamond using tax holidays and investment assistance to promote entrepreneurship outside metropolitan regions so that enabling environments are created for the industry as a whole (Jin & Moon, 2006; Ribes et al., 2011; Stimson et al., 2006). We have employed this framework to investigate how the competitive advantages for Airbnb prevalence of non-metropolitan regions differ from that of the metropolitan regions in Australia.

5 | METHODOLOGY

We have adopted a systemic approach to analyse the relationship between Airbnb-led micro-entrepreneurship and territorially embedded competitive advantages at the SA3 level. With populations ranging from 30,000 to 130,000 people, SA3s are standardised spatial units that are aggregated from SA2s (smaller statistical area units). In

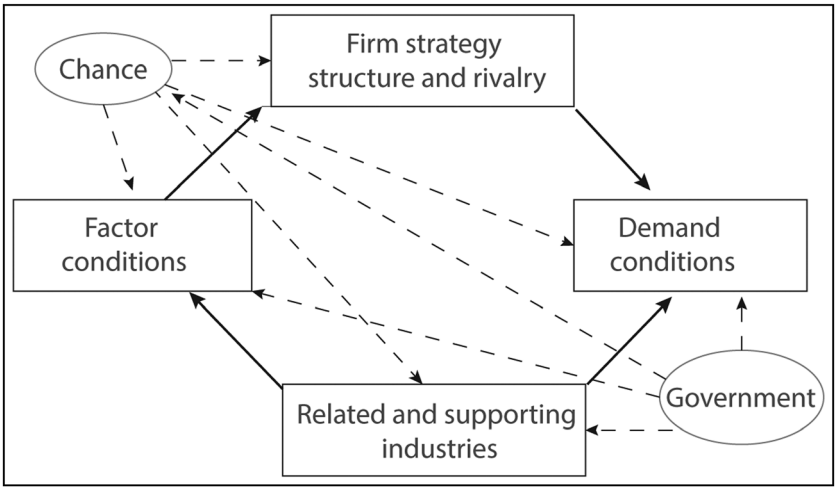

FIGURE 1 The Porter diamond model of competitive advantages. Source: Redrawn from Porter (1990, p. 197)

regional areas, SA3s represent the area serviced by regional cities (population over 20,000 people) and, in the major cities, they represent the area serviced by a major transport and commercial hub (ABS, 2016). Conversely, Greater Capital City Statistical Areas (GCCSAs) are geographical areas designed to represent the functional extent of the state and territory capital cities and reflect labour markets in state capitals (ABS, 2016). In this study, we have used GCCSA categories to group data at metropolitan and non-metropolitan levels to portray core–periphery relationships. In each case, we have used location quotients (LQ) (Feser et al., 2008) to determine levels of specialisation or relative concentrations of various industries (Kamman & Nijkamp, 1991; Sweeney & Gómez-Antonio, 2016; C. C. Wang et al., 2010) for individual SA3s—in other words, for the composition of industries at the SA3 level.

Related and supporting industries are the reinforcing effect of ancillary industries on the visitor economy (Fundeanu, 2015; Kolosinska et al., 2018). The United States Travel Association considers seven industry groups that are directly or indirectly associated with the visitor economy including accommodation, transportation, entertainment, recreation, food, retail trade, and travel arrangements (Mao, 2014; US Travel Association, 2019). These industries cater for the travel, food, accommodation, and entertainment needs of visitors and are considered as related and supporting industries for the visitor economy and Airbnb-led micro-entrepreneurship, in turn. Factor conditions are natural and cultural endowments and other location-based characteristics that create demand for visitors for business or leisure purposes. For example, amenities such as climate, scenic locations, and agriculture can be important determinants of regional concentrations of tourism micro-entrepreneurship (Mao, 2014). In such cases, higher employment in the agriculture, mining, and services industries are indicative of factor conditions for the visitor economy. Human resources are another element of the factor conditions in relation to potential micro-entrepreneurs' educational and digital capabilities (Jin & Moon, 2006; Kolosinska et al., 2018).

Demand conditions include proximity to a large market and perceived potential future demand (Mao, 2014; Ribes et al., 2011). Creating ample demand for the listed properties, Airbnb works as a gateway to greater critical mass and visibility (Lorenzini, 2014; Nijkamp, 2017). This demand is important for micro-entrepreneurship ventures to become economically viable. Critical mass also includes the supply side—Airbnb hosts and the supply of other services catering to the needs of those who are the visitors in the visitor economy. Presence of an established visitor market evident through higher employment in Hospitality[LQ] Services and population density can be indicative of the supply side when we do not know the share of the visitors using the home sharing platforms. Bringing back the demand side discussed earlier, accessibility to the locations by region is considered as another element of the demand factor.

Firm strategy and rivalry focus on the policy framework within which businesses operate and highlight the characteristics of domestic competition (Jin & Moon, 2006; Mao, 2014). As we are considering Airbnb-led micro-entrepreneurs rather than the firm—that is, Airbnb itself—firm strategy and rivalry factors are beyond our scope.

In light of the foregoing, we aimed to test which embedded competitive advantages explain the growth of Airbnb-led micro-entrepreneurship and to ask the extent to which those advantages apply in the context of Australian peripheries. We wanted to establish whether there is statistically significant group difference between the core (major cities) and the peripheries (regions) in the Airbnb-led micro-entrepreneurship. To address these overarching research questions, we have tested four hypotheses that growth of Airbnb-led micro-entrepreneurship:

> **Hypothesis 1.** is significantly different in metropolitan regions compared with that of the non-metropolitan regions;
>
> **Hypothesis 2.** depends on factor conditions embedded in the location;
>
> **Hypothesis 3.** depends on demand conditions embedded in the location; and
>
> **Hypothesis 4.** depends on related and supporting industries embedded in the location.

6 | AIRBNB-LED MICRO-ENTREPRENEURSHIP IN AUSTRALIAN REGIONS

In this study, independent variables used for modelling come from 2016 General Community Profile data provided by the ABS, the descriptions for which deal with embedded competitive advantages of SA3s (Table 1). The number of listed properties serves as a proxy for micro-entrepreneurship. This form of Airbnb-led micro-entrepreneurship is measured by the number of unique property listings per thousand dwellings at each SA3. Absolute numbers of Airbnb listings data

TABLE 1 List of independent variables with description and categories

Categories	Variable name	Description
Factor conditions	Internet access[%]	Percentage of dwellings with internet access from dwellings.
	Education[%]	Percentage of population years 15 and over completing year 12 level education.
	Agriculture[LQ]	LQ of employment in agriculture, forestry, and fishing.
	Mining[LQ]	LQ of employment in mining and quarrying.
	Services[LQ]	LQ of employment in financial and insurance activities, real-estate activities and professional, scientific, and technical activities, and ICT services.
	Manufacturing[LQ]	LQ of employment in manufacturing industry.
	Utilities[LQ]	LQ of employment in electricity, gas, steam, and air conditioning supply and water supply (sewerage, waste management, and remediation activities).
	Construction[LQ]	LQ of employment in construction industry.
	Health and education[LQ]	LQ of employment in education and human health and social work activities.
Demand conditions	Population density[log]	Population density of SA3s per square km[log transformed].
	Distance international airport[km]	Euclidian distance in km from nearest international airport.
	Distance domestic airport[km]	Euclidian distance in km from nearest domestic airport.
Related and supporting industries	Trade[LQ]	LQ of employment in wholesale and retail trade.
	Transport[LQ]	LQ of employment in transportation and storage.
	Hospitality[LQ]	LQ of employment in accommodation and food service activities.
	Other[LQ]	Arts, entertainment, and recreation, and other service activities.
Core–periphery factor	Location	Binary variable indicating whether the SA3 is within metropolitan region or not.

Abbreviations: LQ, location quotient; SA3, Statistical Area Level 3.

are drawn from geocoded and deidentified data about Airbnb listings in Australia procured from AirDNA, which generates custom raw data reports from publicly available information on the Airbnb website (AirDNA, 2018). In the AirDNA data, each property is recorded on the first day of a month if it is active in the prior month. Each record includes data on geographic location, type of listing (entire house/room sharing, and so on), number of bedrooms, average daily rates, annual revenue, and other related information. In terms of absolute numbers, between August 2014 and December 2018, considering the first entry of each property, there were 299,996 unique listings in Australia in total. However, counts overwhelmingly concentrated on listings in the state capitals, indicating a population distribution effect. We have countered this effect by taking as our response variable Airbnb listings per thousand dwellings (ratio of the housing stack). Because the unit of analysis is the SA3, we have excluded from the study overseas territorial dependencies, namely, Christmas Island, Cocos Island, and Norfolk Island, and instead focused on the eight states and territories.

We have considered as factor conditions all major industries other than those considered as related and supporting industries. The LQ of employment in other services includes the fraction of employment in arts, entertainment, and recreational facilities and so considered here as elements of related and supporting industries. As a measure of location-based industry

specialisation, we have used LQ of employment in 11 broad industry categories.

The LQ of employment is measured following the equation below:

$$LQ_{ij} = \frac{\left(E_{ij}/E_j\right)}{\left(E_i/E\right)},$$

where $E_{ij} = employment\ in\ industry\ i\ in\ region\ j$; $E_j = total\ employment\ in\ region\ j$; $E_i = total\ employment\ in\ industry\ i\ of\ the\ nation$; and $E = total\ employment\ of\ the\ nation$.

Distances from nearest international and domestic airports are considered as variables representing demand conditions; this is calculated as the Euclidean distance from the airports to the geometric centroid of the SA3s.

First, we have grouped the data by metropolitan/non-metropolitan location and considered the group summaries. Figure 2 provides descriptive statistics for the variables in metropolitan and non-metropolitan regions, listing the features of metropolitan and non-metropolitan regions. For example, metropolitan regions are characterised by higher accessibility indicators both as elements of factor conditions and demand conditions including the percentage of population years 15 or over completing high school, internet accessibility, and distance from international and domestic airports.

Interestingly, the average number of Airbnb listings per thousand dwellings (Airbnb-led micro-entrepreneurship) is more than 64% higher in non-metropolitan regions compared with metropolitan counterparts, suggesting that potential for micro-entrepreneurship is higher where service deficits exist. Thus, taking Airbnb listings per thousand dwellings as the dependent variable dismisses the population effect and brings out tourist regions where Airbnb-led micro-entrepreneurship is high compared with total housing stock. However, they are log-transformed for modelling because of the skewed nature of the variables, population density, and Airbnb-led micro-entrepreneurship.

6.1 | Interaction terms

When in a model, an explanatory variable has a differential effect on the response variable across the distribution of another explanatory variable, an interaction term is introduced to represent this relationship between the explanatory variables (Gupta et al., 2014; Hardy, 1993). To capture the full effect of related and supporting industries on the growth of Airbnb-led micro-entrepreneurship in Australian peripheries in the visitor economy, we have

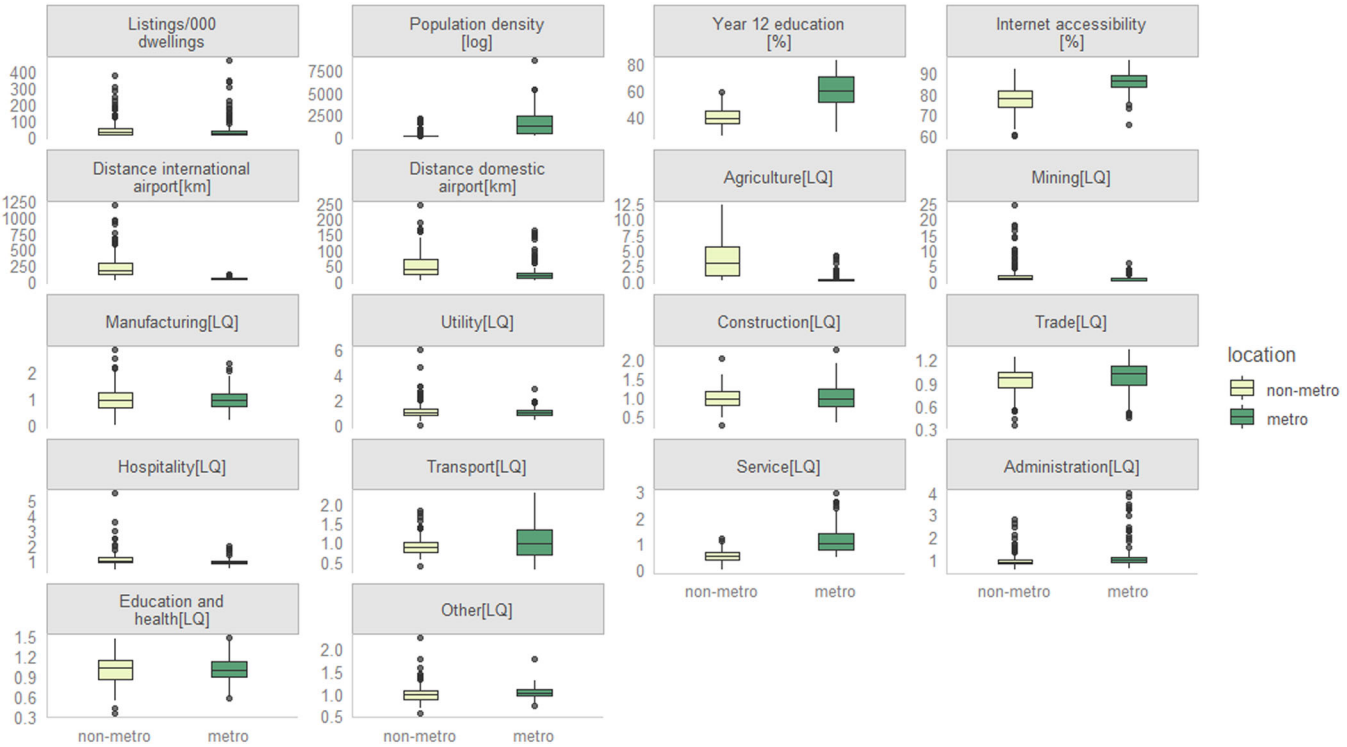

FIGURE 2 Boxplots showing the group summaries of the variables (range, mean, and standard deviation) in metropolitan and non-metropolitan regions. LQ, location quotient. Source: Australian Bureau of Statistics census 2016 and AirDNA data

introduced an interaction term between specialisation in Hospitality[LQ] and Trade[LQ] industries within the related and supporting industries category. The rationale is that we assume that the formal tourism industry (specialisation in Hospitality[LQ]) might have a differential effect on Airbnb-led micro-entrepreneurship across different levels of Trade[LQ] specialisation. In other words, an existing tourist destination may boost Airbnb-led micro-entrepreneurship if located in an economic hub; this is especially pertinent in the context of the peripheries. Adding this interaction to the model allows us to examine if tourism in regions affects the growth of Airbnb.

Again, in terms of factor conditions, it is assumed that locations specialised in agriculture have higher tourism potential and its impact on Airbnb-led micro-entrepreneurship might vary with specialisation in supporting industries, specifically the transport industry. To bring out this relationship, an interaction effect between specialisation in Agriculture[LQ] and Transport[LQ] industries has been introduced. This interaction term examines the influence of well-connected agricultural hubs on the growth of Airbnb-led micro-entrepreneurship. In terms of the Porter model, we emphasise on how related and supporting industries moderate the impact of locational factor conditions on the Airbnb-led micro-entrepreneurship in Australian peripheries.

Finally, in Australian peripheries, the mining-related influx of fly-in/fly-out (FIFO) workers and their impact on local economies remains a contentious issue (Balding et al., 2012; Perry & Rowe, 2015; Storey, 2001; Torkington et al., 2011) in the context of the core–periphery relationship (Martinus, 2018). To this end, we test whether locations within metropolitan regions that have higher concentrations of mining employment adds to the competitive advantages of those SA3s for Airbnb-led micro-entrepreneurship in the visitor economy. Another interaction term, Mining:Location-metro, is used to test this relationship. This interaction term tests if the FIFO character of the Australian peripheries is present in the web-based short-term rental market.

7 | RESULTS AND DISCUSSION—MEAN AND QUANTILE REGRESSION MODELS

We have employed the OLS mean regression to explain the effect of factor conditions, demand conditions, and related and supporting industries on the average competitive advantages of Airbnb-led micro-entrepreneurship. But given the highly clustered nature of such entrepreneurship in Australia, an analysis solely focusing on the mean may lead to biases by the outliers (Faggian et al., 2016; Koenker, 2005). In this situation, the quantile regression complements the findings of the mean model. By using median Airbnb-led micro-entrepreneurship and then focusing on the lower (25th quantile) and upper (90th quantile) segments of the distribution, we have produced estimates that are unaffected by extreme values at the tails. Discussing both mean and median values provides particularly useful information in relation to the distribution of the overall Airbnb-led micro-entrepreneurship profile (Faggian et al., 2016).

We first discuss the OLS model emphasising on the interaction terms in the model. For the OLS model discussed, we use unstandardised predictors where the non-metropolitan region is the reference category. Thus, we examine if there is a statistically significant group difference between metro and non-metropolitan regions in terms of Airbnb-led micro-entrepreneurship.

7.1 | The mean model: The location factor and interaction effects

Although Airbnb listings are overwhelmingly clustered in metropolitan locations in Australia, when expressed as ratio of listings to dwelling stock, non-metropolitan regions come out with higher values. The OLS model shows that at the mean function, the core–periphery factor has a statistically significant negative group difference with the reference group of non-metropolitan regions (Table 2). That is to say that metropolitan regions would have 44% fewer listings per thousand dwellings compared with that of the non-metropolitan regions ($\beta = -0.44$; $p < 0.05$). Thus, findings of the OLS model supports Hypothesis 1. Among the factor conditions, although internet accessibility[%] and year 12 level education[%] do not have a statistically significant relationship with Airbnb-led micro-entrepreneurship, specialisation in the services industry and education and health industries exert considerable positive effect on it in non-metropolitan regions. Specialisation in education and health indicates concentration of higher education institutes and health care facilities. Because universities increase amenities in the neighbourhood, authors often find close association between high-density Airbnb clusters and proximity to universities (Ioannides et al., 2018; Ki & Lee, 2019; Xu et al., 2020). On a similar note, health care facilities such as hospitals are often collocated with other amenities such as restaurants, transport hubs (including bus and railway terminals), and supermarkets. Therefore, we infer that presence of universities andhealth care facilities boosts higher amenities in adjacent neighbourhoods, which, in turn, is more likely

TABLE 2 Summary of ordinary least squares model, Australia

Category	Independent variables	Coefficients (standard error)
	Intercept	−8.12* (3.80)
Factor conditions	Internet accessibility[%]	0.02 (0.01)
	Year 12 education[%]	−0.01 (0.01)
	Agriculture[LQ]	0.24* (0.12)
	Mining[LQ]	0.14* (0.07)
	Manufacturing[LQ]	0.94** (0.29)
	Utilities[LQ]	−0.04 (0.07)
	Construction[LQ]	1.49*** (0.43)
	Services[LQ]	3.20*** (0.62)
	Education and health[LQ]	2.56** (0.82)
Demand conditions	Population density[log]	−0.07* (0.03)
	Distance international airport[km]	−0.001** (0.0003)
	Distance domestic airport[km]	0.003** (0.001)
Related and supporting industries	Trade[LQ]	−3.16*** (0.78)
	Hospitality[LQ]	0.11 (0.40)
	Transport[LQ]	0.26 (0.25)
	Administration[LQ]	0.89* (0.41)
	Other[LQ]	1.25*** (0.33)
Location factor	Location-metro	−0.44*** (0.13)
Interaction terms	Agriculture:Transport[LQ]	0.13* (0.06)
	Trade:Hospitality	2.92*** (0.32)
	Mining:Location-metro	0.16*** (0.05)
	Observations	334
	Adjusted R^2	0.76
	Residual std. error	0.53 ($df = 312$)
	F statistic	51.7*** ($df = 21; 312$)

Abbreviation: LQ, location quotient.

*Coefficients significantly different from zero at 10% significance level.

**Coefficients significantly different from zero at 5% significance level.

***Coefficients significantly different from zero at 1% significance level.

to increase the competitive advantages of SA3s in non-metropolitan regions for Airbnb-led micro-entrepreneurship.

The service[LQ] industry represents the IT-enabled professional services (Brinkley, 2006; Rutten & Boekma, 2005; Weterings, 2005), which are particularly concentrated in inner-city locations. Researchers have established the correlation between the inner-city suburbs with higher densities of Airbnb listings (Clancy, 2020; Grisdale, 2019; Ioannides et al., 2018). Strong positive association between the services[LQ] industry and Airbnb-led micro-entrepreneurship suggests a similar notion that even beyond the metropolitan regions in Australia, Airbnb tends to intensify in the inner-city locations of secondary cities such as Newcastle, Gold Coast, and Wollongong.

Furthermore, Agriculture[LQ] and Mining[LQ] have a positive association with Airbnb growth as well. The contribution of agriculture (mainly gastronomy and winery-related agriculture) to the local tourism industry in Australia and other countries is well explored (Cheer, 2018; Gurran et al., 2020; L. Wang et al., 2018), as are services associated with mining activities (Balding et al., 2012; Bec et al., 2018; Gurran et al., 2020).

Higher specialisation in the Construction[LQ] industry indicates local economic growth (Ofori, 1988; Wells, 1984). The mean model shows that growth in the local economy augments the competitive advantages of the SA3s in the regional context as Construction[LQ] has a positive association with Airbnb-led micro-entrepreneurship. Moreover, thus, the positive association between specialisation in the

Manufacturing[LQ] industry with Airbnb supports that presence of manufacturing agglomeration in the non-metropolitan region increases its competitive advantages for Airbnb-led micro-entrepreneurship. Overall, the mean model substantiates Hypothesis 2, meaning geographically embedded factor conditions influence Airbnb growth.

In relation to the demand conditions, all three variables (population density[log]; distance from nearest international and national airports) are statistically significant determinants of Airbnb-led micro-entrepreneurship in non-metropolitan areas. Whereas distance from nearest domestic airport has a positive impact, the other two variables representing demand conditions extend a negative influence. Hence, the model confirms Hypothesis 3. Again, in the related and supporting industries category, specialisation in Trade[LQ] and other industries have statistically significant influence on Airbnb-led micro-entrepreneurship. Although specialisation in the Trade[LQ] industry has a negative effect, specialisation in other industries shows a positive relationship with Airbnb-led micro-entrepreneurship. The Hospitality[LQ] also has a weak positive influence on Airbnb-led micro-entrepreneurship. In a way, this proves that Airbnb genuinely benefits the less urbanised economy where there may not be the traditional accommodation services such as hotels. Thus, the model supports Hypothesis 4.

At the mean function, all three interaction effects are statistically significant (Table 2). The marginal effects of the interaction terms are plotted in Figure 3. Figure 3a shows that the competitive advantage of SA3s in metropolitan areas increases exponentially for Airbnb-led micro-entrepreneurship with increased specialisation in the mining industry whereas this relationship is quite flat in the non-metropolitan regions. Balding et al. (2012) have found that short-term accommodation businesses catering to the business-travel industry experienced strong growth benefitting from the mining boom between 2005 and 2011 in the mining-oriented capital cities of Perth, Brisbane, and Darwin in particular, reflecting stronger business demand for paid accommodation in these cities. Conversely, rental accommodation in leisure-focused regions experienced low growth or even decline at the same time. Meanwhile, domestic flights and air-passenger traffic between these mining boom capital cities to key mining regions (Martinus, 2018).

Figure 3b shows how the impact of formal visitor economy (specialisation in the Hospitality[LQ]) on Airbnb-led micro-entrepreneurship changes across different levels of trading activities in Australian peripheries. In the non-metropolitan tourist regions with a strong local economy, trading hubs show higher competitiveness for Airbnb-led micro-entrepreneurship as this combination yields higher number of listings per thousand dwellings. This finding is in line with those made by Mao (2014) and Gutiérrez et al. (2017) that tourism micro-entrepreneurship clusters coincide with formal tourism industry.

Figure 3c shows how connectivity (expressed as concentration of employment in transport industry) moderates the impact of factor endowments, particularly agriculture on Airbnb-led micro-entrepreneurship in the visitor economy in Australian peripheries. The plot

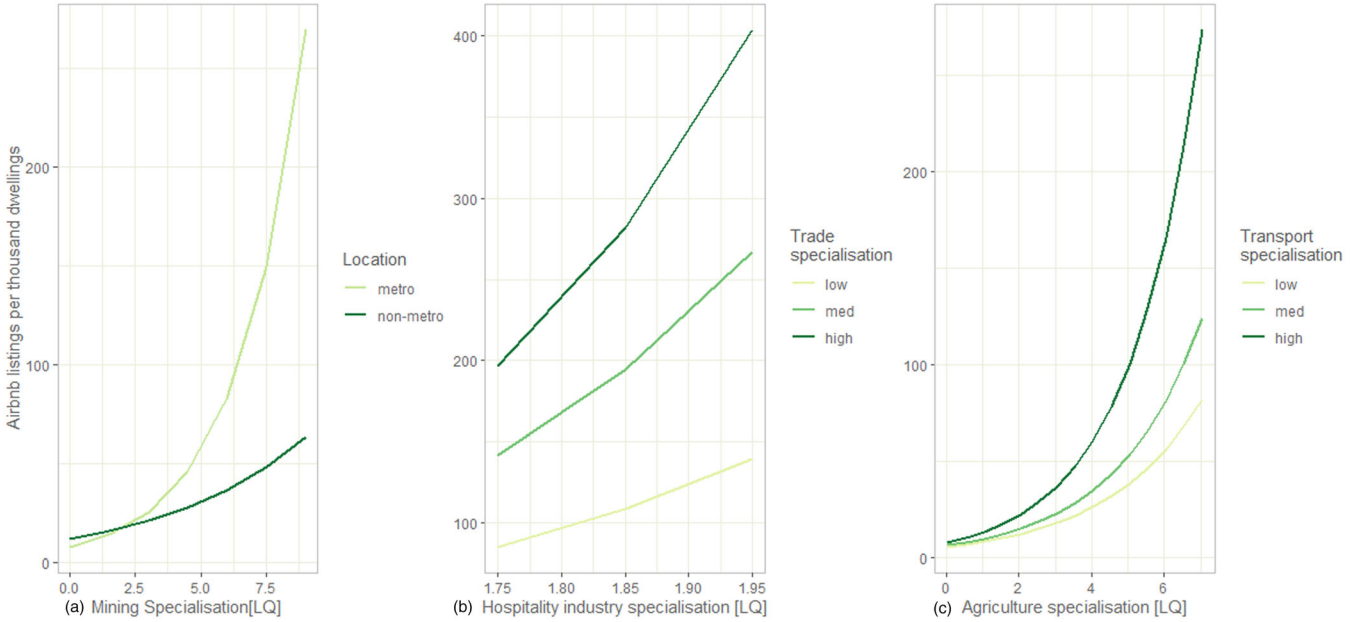

FIGURE 3 Interaction effect between (a) Mining[LQ] and location factor, (b) Hospitality[LQ] and Trade[LQ], and (c) Agriculture [LQ] and Transport[LQ] on Airbnb-led micro-entrepreneurship. LQ, location quotient

shows that well-connected non-metropolitan regions specialised in agriculture bolster the embedded competitiveness of such SA3s as the combined effect leads to higher number of listings per thousand dwellings.

7.2 | The quantile model: Local behaviour of determinants of competitiveness in the visitor economy

Quantile regression complements mean regression model findings in that it provides insights of the sources of heterogeneity in the response that are associated with the predictors (Koenker, 2005). We have compared the quantile regression results (at 25th, median, 75th, and 90th quantile in Table 3) with the mean model to understand how the contribution of independent variables change over the quantiles. We removed the effect of unit of measurement from the analysis and used standardised coefficients to compare the relative importance of the independent variables in explaining the growth of Airbnb-led micro-entrepreneurship. The location factor is significant in the model with unstandardised coefficients (Table 2), but not once the variables are standardised.

TABLE 3 Estimated standardised coefficients of ordinary least squares and quantile regression at the 25th, 50th, 75th, and 90th percentile of log-transformed Airbnb-led micro-entrepreneurship values

		Standardised coefficients (standard error)				
			Quantile regression			
Categories	Independent variables	Mean model	25th quantile	50th quantile	75th quantile	90th quantile
	Intercept	3.30*** (0.07)	2.99*** (0.11)	3.32*** (0.11)	3.68*** (0.12)	4.09*** (0.15)
Factor conditions	Internet accessibility[%]	0.11 (0.09)	−0.02 (0.12)	0.05 (0.13)	0.20 (0.15)	0.05 (0.16)
	Year 12 education[%]	−0.16 (0.13)	0.13 (0.17)	−0.07 (0.18)	−0.24 (0.21)	−0.06 (0.21)
	Agriculture[LQ]	0.92*** (0.26)	0.95** (0.34)	0.95** (0.33)	0.99* (0.48)	1.03* (0.43)
	Mining[LQ]	0.39* (0.19)	0.44 (0.23)	0.48* (0.24)	0.41 (0.34)	0.45 (0.29)
	Manufacturing[LQ]	0.41** (0.13)	0.45** (0.16)	0.47** (0.16)	0.48* (0.24)	0.48* (0.21)
	Utilities[LQ]	−0.02 (0.04)	0.01 (0.04)	0.02 (0.05)	−0.06 (0.05)	−0.07 (0.04)
	Construction[LQ]	0.46*** (0.13)	0.48** (0.16)	0.48** (0.16)	0.51 (0.26)	0.70** (0.23)
	Services[LQ]	1.57*** (0.30)	1.54*** (0.40)	1.68*** (0.39)	1.65** (0.53)	1.67*** (0.46)
	Education and health[LQ]	0.46** (0.15)	0.48* (0.19)	0.52** (0.19)	0.44 (0.27)	0.50* (0.24)
Demand conditions	Population density[log]	−0.21* (0.10)	−0.14 (0.14)	−0.20 (0.14)	−0.23 (0.18)	−0.16 (0.21)
	Distance international airport[km]	−0.16** (0.06)	−0.07 (0.08)	−0.11 (0.07)	−0.17* (0.07)	−0.24*** (0.07)
	Distance domestic airport [km]	0.10** (0.04)	0.14* (0.07)	0.12* (0.06)	0.12* (0.05)	0.18** (0.06)
Related and supporting industries	Trade[LQ]	−0.03 (0.11)	0.04 (0.15)	0.002 (0.15)	−0.05 (0.19)	−0.08 (0.17)
	Hospitality[LQ]	1.18*** (0.12)	1.19*** (0.16)	1.26*** (0.16)	1.28*** (0.24)	1.34*** (0.23)
	Transport[LQ]	0.18* (0.09)	0.23 (0.12)	0.29* (0.12)	0.17 (0.15)	0.17 (0.13)
	Administration[LQ]	0.43* (0.20)	0.47 (0.26)	0.45 (0.26)	0.49 (0.37)	0.51 (0.32)
	Other[LQ]	0.21*** (0.05)	0.24** (0.08)	0.23** (0.07)	0.25* (0.10)	0.21* (0.10)
Location factor	Location-metro	−0.22 (0.12)	−0.23 (0.17)	−0.31 (0.19)	−0.33 (0.19)	−0.61** (0.23)
Interaction terms	Agriculture:Transport[LQ]	0.12* (0.05)	0.08 (0.10)	0.15** (0.06)	0.11 (0.05)	0.12* (0.05)
	Trade:Hospitality	0.20*** (0.02)	0.18*** (0.03)	0.21*** (0.04)	0.24*** (0.04)	0.24*** (0.04)
	Mining:Location-metro	0.44*** (0.13)	0.70*** (0.15)	0.45** (0.14)	0.27* (0.13)	0.16 (0.12)

Abbreviation: LQ, location quotient.

*Coefficients significantly different from zero at 10% significance level.

**Coefficients significantly different from zero at 5% significance level.

***Coefficients significantly different from zero at 1% significance level.

The mean function in Figure 4 (dashed lines) is horizontal, representing a flat relationship at the mean, whereas the quantile function (solid lines) shows the change in the slope of the regression line at different quantiles. This result indicates the change in the behaviour of the determinants of the competitive advantages at different intensities of Airbnb-led micro-entrepreneurship. Figure 4e,4s illustrates that the impact of specialisation in the mining industry on Airbnb-led micro-entrepreneurship is flat (around 0.4) over the quantiles in non-metropolitan regions. The impact of specialisation in the mining industry is much stronger when the location is within metropolitan region, decreasing over the quantiles to become statistically insignificant at the highest quantile. Figure 4g points out that the impact of specialisation in the services[LQ] industry on Airbnb-led micro-entrepreneurship increases at lower quantiles till the median and then decreases before levelling off around 70th quantile. The slope of Hospitality [LQ] industry steadily increases over the quantiles, implying that at higher intensities of Airbnb-led micro-entrepreneurship (Figure 4o), the presence of formal visitor economy has stronger impact. Also, the coefficient of the Trade:Hospitality[LQ] interaction effect (Figure 4t) exerts steadily increasing effort on Airbnb-led micro-entrepreneurship across the quantiles, suggesting that non-metropolitan tourist regions with vibrant local trade (economic hub) have increasingly higher competitive advantages for Airbnb-led micro-entrepreneurship.

Figure 5 compares the contribution of each of the explanatory variables on the dependent variable and reveals the direction of relationship with the dependent variable over the quantiles. For Australian peripheries, service[LQ], Hospitality[LQ], and Agriculture[LQ] industries are the greatest determinants of Airbnb-led micro-entrepreneurship. Among the significant coefficients, location-metro, population density[log], and distance from nearest international airport[km] have a negative impact and others have a positive impact. For example, distance from an international airport is negatively related to Airbnb-led micro-entrepreneurship, meaning that the closer the non-metropolitan locations to international airports, the more competitive they become for Airbnb-led micro-entrepreneurship. But the rate of change in Airbnb-led micro-entrepreneurship induced by 1-km change in distance from nearest

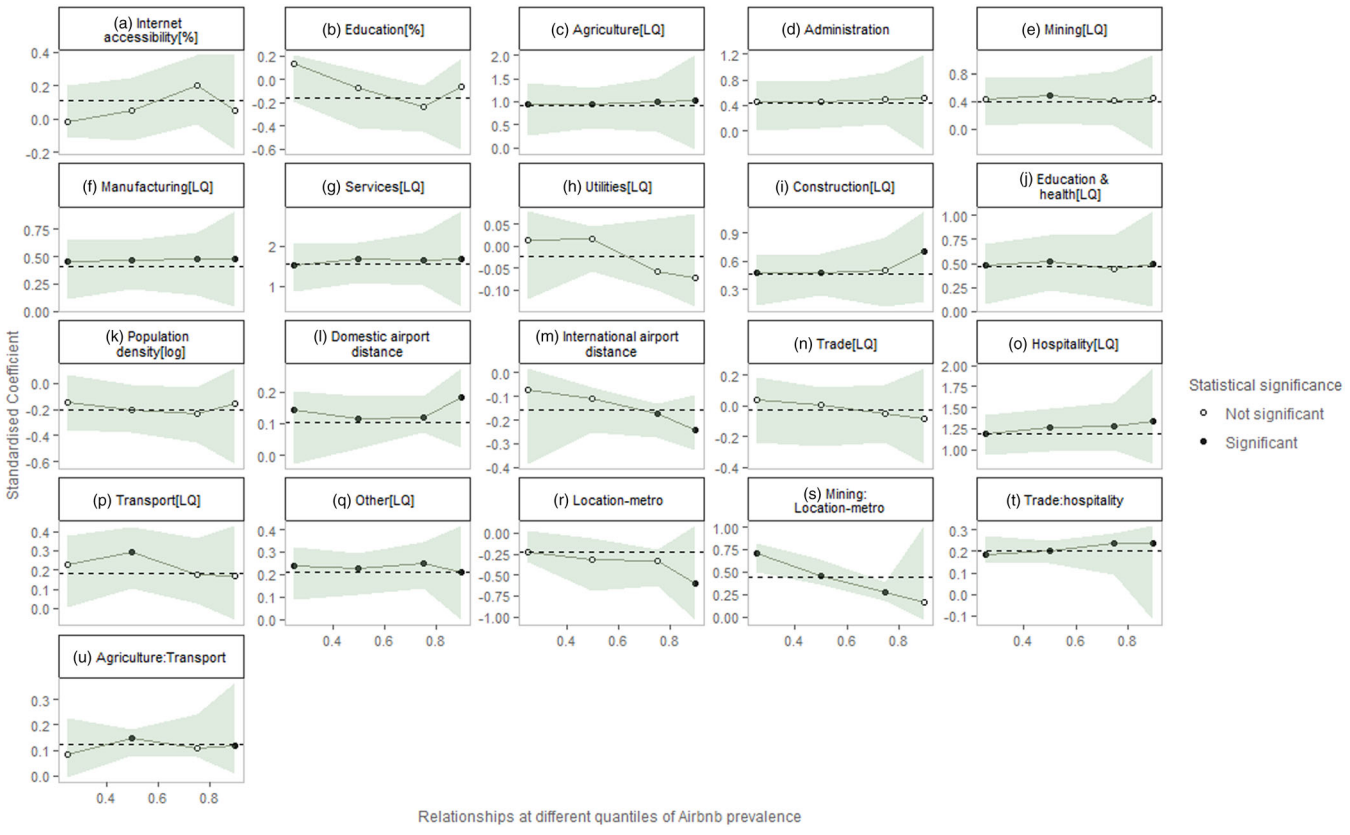

FIGURE 4 Changes of estimated standardised coefficients for quantile regression across different quantiles with dashed line showing the point of ordinary least squares coefficient and the shadowed area showing respective confidence interval of the regression coefficients. LQ, location quotient

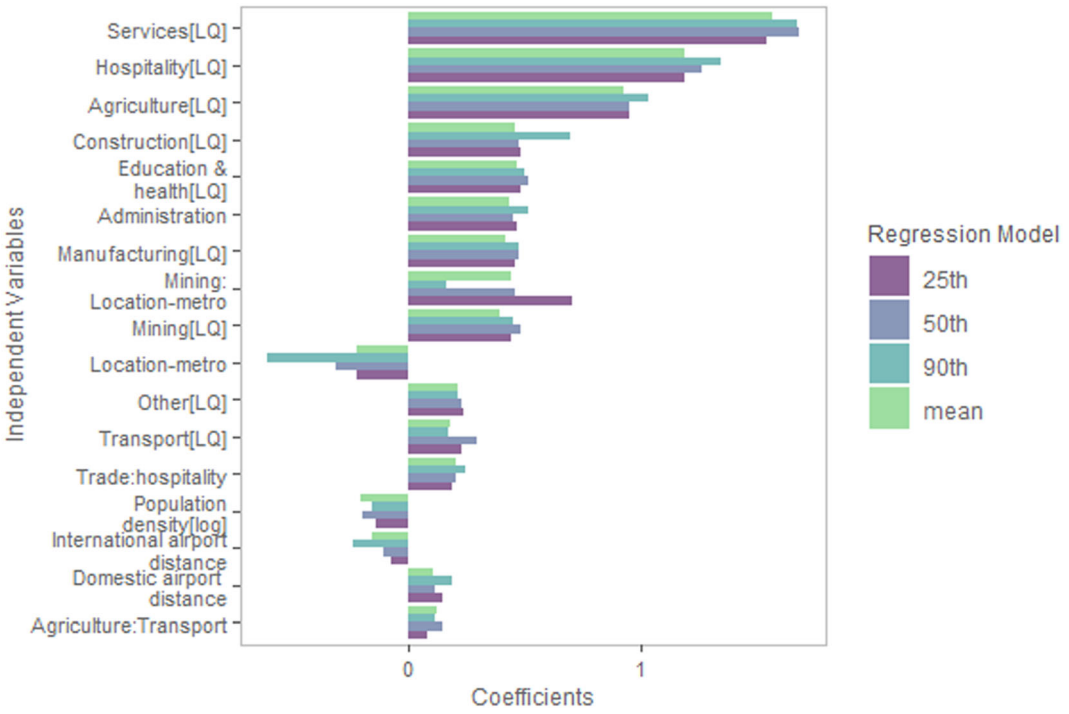

FIGURE 5 Comparison of estimated standardised coefficients for ordinary least squares regression and its 25th, 50th, and 90th quantile (showing variables significant in any of the models at $p < 0.05$). LQ, location quotient

international airport varies at different quantiles of Airbnb-led micro-entrepreneurship.

Among the demand conditions, distance from nearest international and domestic airports has statistically significant impact on Airbnb-led micro-entrepreneurship at the mean function and over the quantiles. However, distance from nearest international airport is a more important determinant of Airbnb-led micro-entrepreneurship compared with the distance from domestic airport. Among the factor conditions, internet accessibility[%] and year 12 education[%] are not statistically significant, meaning in Australian peripheries, Airbnb-led micro-entrepreneurship does not depend on the digital engagement of the residents. However, factor conditions including specialisation in agriculture, mining, and education and health industries exert statistically significant influence on Airbnb-led micro-entrepreneurship.

8 | CONCLUSION

While Airbnb and other accommodation-sharing platforms have primarily been studied in an urban context (Alizadeh et al., 2018; Sarkar & Gurran, 2017; Scullica & Elgani, 2018), the potential impacts of micro-entrepreneurship on regions and peripheries are arguably more salient, given the relative lack of diversity in local industry, and the potential for economic multipliers relating to growth in tourism and/or ancillary industries. This article extends such scholarship by explaining how Airbnb-led micro-entrepreneurship interacts with territorially embedded socioeconomic characteristics across regional Australia. Drawing on the Porter diamond model framework, we have identified the factor conditions, demand conditions, and related and supporting industries that determine competitive advantages of the Australian peripheries for Airbnb-led micro-entrepreneurship in the visitor economy. We have found that Airbnb-led micro-entrepreneurship is tied to the visitor economy of the location. Thus, smaller cities in non-metropolitan settings increase the competitive advantages of Airbnb-led micro-entrepreneurship because of their location-based endowments such as agriculture and forestry (particularly, tourism-oriented high-value agriculture), adjacency to a resource industry, and inner-city locations.

The study has therefore established three key findings. First, it shows evidence of a core–periphery relationship in the distributions of Airbnb-led micro-entrepreneurship, particularly in distinguishing the resource-oriented capital cities of Brisbane, Perth, Darwin, and secondary cities (Balding et al., 2012) from larger and more diverse economic centres such as Sydney and Melbourne. This outcome is because concentration of mining industry employees in metropolitan regions enhances the competitive advantages of these locations

for Airbnb-led micro-entrepreneurship yet leaves many regions "flown-over" as corporations exert monopolistic control over visitors to resource peripheries.

Second, non-metropolitan regions exhibit higher competitiveness for Airbnb-led micro-entrepreneurship compared with the metropolitan regions at the mean function and at the highest quantile. A higher mean number of Airbnb listings per thousand dwellings compared with that of the metropolitan regions supports this argument, which is particularly relevant to the upper tail of the distribution. Demand conditions including population density and distance from international airports also condition the competitive advantages of non-metropolitan regions for Airbnb-led micro-entrepreneurship. The quantile regression results provide further insight to this dynamic. Population density has a negative relationship with Airbnb-led micro-entrepreneurship, meaning a 10% increase in population density leads to 1% decrease in Airbnb listings per thousand dwellings on an average.

Finally, there exists greater potential for Airbnb-led micro-entrepreneurship in non-metropolitan tourist regions with relatively stronger local economies. Factor conditions such as specialisation in the services and agriculture industries add to the competitive advantages of non-metropolitan regions for Airbnb-led micro-entrepreneurship, as do related and supporting industries such as coexistence of formal tourism industry and specialisation in entertainment and recreation services (Other[LQ]).

Because we have focused our discussion on the competitiveness of peripheral Australia for Airbnb-led micro-entrepreneurship compared with that of the metropolitan regions, we emphasise on the potential of non-metropolitan tourist regions with strong local economies and agricultural regions with greater connectivity to become hotspots of Airbnb-led micro-entrepreneurship. As Mao (2014) and Fundeanu (2015) have argued, the coexistence of a formal tourism industry boosts the competitiveness of non-metropolitan regions for tourism micro-entrepreneurship, which in turn increase the impact of P2P accommodation markets. Future work may look to focus on the transformation of short-term accommodation markets in non-metropolitan regions over time, and more specifically how micro-entrepreneurship across related industries such as tourism and mining is impacted. Furthermore, future research may look to test these hypotheses outside of Australia, which has relatively uniform provision of services such as water, electricity, or the internet between metropolitan and non-metropolitan areas.

In terms of policy implications, using Porter's diamond model of competitive advantages, we have also established that the competitiveness of regional Australia for the visitor economy would be elevated by a tourism policy aimed at augmenting the endogenous factor conditions such as the strength of local economy in agriculture, mining, and services industries and related and supporting industries such as Trade[LQ] and Hospitality [LQ]. The role of government is crucial in planning events in tourism regions such as summits, conferences, and international sporting events to encourage international tourist influx and popularise destination image (Fairley & Dolnicar, 2017).

In conclusion, as a platform for innovation, Airbnb provides micro-entrepreneurs with the capacity to enhance regional growth outcomes by empowering innovation in the peripheral visitor economy. In a country with greater regional parity in terms of education, internet accessibility, and transport infrastructures, Australians are better placed to make use of online market places such as Airbnb for regional development for regions that have greater intrinsic competitive advantages for such platforms compared with their metropolitan counterparts. However, this kind of innovation takes diverse forms in various parts of Australia where specialisation in the mining industry determines Airbnb-led micro-entrepreneurship. The outcome of these micro-entrepreneurship opportunities created through the platforms depends on how the states and local governments craft policy that considers the benefits of micro-entrepreneurship to regional and remote areas against metropolitan housing issues tied to dwelling supply and demand.

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ORCID

Sirat Mahmuda https://orcid.org/0000-0001-6908-6162
Thomas Sigler https://orcid.org/0000-0002-7789-0916
Jonathan Corcoran https://orcid.org/0000-0003-3565-6061
Eric Knight https://orcid.org/0000-0002-2216-0131

REFERENCES

Abrahao, B., Parigi, P., Gupta, A., & Cook, K. S. (2017). Reputation offsets trust judgments based on social biases among Airbnb users. *Proceedings of the National Academy of Sciences of the United States of America*, *114*(37), 9848–9853. https://doi.org/10.1073/pnas.1604234114

ABS. (2001). 1321.0—Small businesses in Australia, 2001. (1321.0). abs.gov.au Retrieved from https://www.abs.gov.au/ausstats/abs@.nsf/mf/1321.0

Adamiak, C. (2018). Mapping Airbnb supply in European cities. *Annals of Tourism Research*, *71*, 67–71. https://doi.org/10.1016/j.annals.2018.02.008

Airbnb. (2019). About us—Airbnb press room. Retrieved January 21 from https://press.airbnb.com/en-uk/about-us/

AirDNA. (2018). AirDNA data methodology. Retrieved 13 February from https://www.airdna.co/methodology

Alizadeh, T., Farid, R., & Sarkar, S. (2018). Towards understanding the socio-economic patterns of sharing economy in Australia: An investigation of Airbnb listings in Sydney and Melbourne metropolitan regions. *Urban Policy and Research*, *36*(4), 445–463. https://doi.org/10.1080/08111146.2018.1460269

Australian Bureau of Statistics. (2016, 12 July 2016). 1270.0.55.001—Australian Statistical Geography Standard (ASGS): Volume 1—Main structure and greater capital city statistical areas, July 2016. Retrieved 01 May from http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%203%20(SA3)~10015

Balding, R., Braid, B. A., the Hon., King, J., & Chipchase, S. (2012). Final report of the visitor economy taskforce: A plan to double overnight visitor expenditure to NSW by 2020.

Barth, S., Barraket, J., Luke, B., & McLaughlin, J. (2015). Acquaintance or partner? Social economy organizations, institutional logics and regional development in Australia. *Entrepreneurship & Regional Development*, *27*(3–4), 219–254. https://doi.org/10.1080/08985626.2015.1030458

Batty, M. (2009). Accessibility: In search of a unified theory. *Environment and Planning B Planning and Design*, *36*(2), 191–194. https://doi.org/10.1068/b3602ed

Bec, A., Moyle, B., Moyle, C.-L., & Keast, R. (2018). Strategies for building community resilience to long-term structural change in the Mackay and Whitsunday regions of Queensland, Australia. In J. M. Cheer & A. A. Lew (Eds.), *Tourism, resilience and sustainability: Adapting to social, political and economic change* (pp. 167–183). Routledge.

Bianchi, A., Fabrizi, E., Salvati, N., & Tzavidis, N. (2018). Estimation and testing in M-quantile regression with applications to small area estimation. *International Statistical Review*, *86*(3), 541–570. https://doi.org/10.1111/insr.12267

Blainey, G. (1966). *The tyranny of distance: How distance shaped Australia's history*. Sun Books.

Botsman, R., & Rogers, R. (2010). *What's mine is your: How collaborative consumption is changing the way we live*. Collins.

Brinkley, I. (2006). *Defining the knowledge economy*. The Work Foundation.

Caulfield, B. (2010, November 18). Airbnb: The Ebay for the entire house. *Forbes*. https://www.forbes.com/forbes/2010/1206/technology-airbnb-sequoia-capital-ebay-startup-next-door.html#e50591061954

Cheer, J. M. (2018). Resilience in the visitor economy. In J. M. Cheer & A. A. Lew (Eds.), *Tourism, resilience and sustainability: Adapting to social, political and economic change* (pp. 61–84). Routledge.

Clancy, M. (2020). Tourism, financialization, and short-term rentals: The political economy of Dublin's housing crisis. *Current Issues in Tourism*, 1–18. https://doi.org/10.1080/13683500.2020.1786027

Ellem, B. (2015). Resource peripheries and neoliberalism: The Pilbara and the remaking of industrial relations in Australia. *Australian Geographer*, *46*(3), 323–337. https://doi.org/10.1080/00049182.2015.1048587

Esen, S., & Uyar, H. (2012). Examining the competitive structure of Turkish tourism industry in comparison with diamond model. *Procedia-Social Behavioral Sciences*, *62*, 620–627. https://doi.org/10.1016/j.sbspro.2012.09.104

Faggian, A., Corcoran, J., & Rowe, F. (2016). Evaluating the effects of Australian policy changes on human capital: The role of a graduate visa scheme. *Environment and Planning C: Government and Policy*, *34*(1), 151–170. https://doi.org/10.1177/0263774x15614755

Fairley, S., & Dolnicar, S. (2017). Supporting events. In S. Dolnicar (Ed.), *Peer-to-peer accommodation networks: Pushing the boundaries* (pp. 109–119). Goodfellow Publishers.

Farnsworth, S. (2018, February 24). Airbnb in Australia: Entire homes, commercial listings 'surge' amid growing concerns. *ABC News*. https://www.abc.net.au/news/2018-02-23/entire-homes-commercial-listings-have-surged-on-airbnb/9473368

Feser, E., Renski, H., & Goldstein, H. (2008). Clusters and economic development outcomes: An analysis of the link between clustering and industry growth. *Economic Development Quarterly*, *22*(4), 324–344. https://doi.org/10.1177/0891242408325419

Forster, C. (2004). *Australian cities: Community and change*. Oxford University Press.

Fundeanu, D. D. (2015). Innovative regional cluster, model of tourism development. *Procedia Economics Finance*, *23*, 744–749. https://doi.org/10.1016/S2212-5671(15)00501-8

Gallagher, L. (2017). *The Airbnb story: How three ordinary guys disrupted an industry, made billions … and created plenty of controversy*. Houghton Mifflin Harcourt Publishing Company.

Grimmer, L., Vorobjovas-Pinta, O., & Massey, M. (2019). Regulating, then deregulating Airbnb: The unique case of Tasmania (Australia). *Annals of Tourism Research*, *75*, 304–307. https://doi.org/10.1016/j.annals.2019.01.012

Grisdale, S. (2019). Displacement by disruption: Short-term rentals and the political economy of "belonging anywhere" in Toronto. *Urban Geography*, 1–27. https://doi.org/10.1080/02723638.2019.1642714

Gupta U., Hada D.S., & Mathur A. (2014). An efficient solution to a multiple non-linear regression model with interaction effect using TORA and LINDO. *Proceedings of the Second International Conference on Soft Computing for Problem Solving (SocProS 2012), December 28–30, 2012. Advances in intelligent systems and computing*, vol 236. Springer.

Gurran, N., Zhang, Y., & Shrestha, P. (2020). 'Pop-up' tourism or 'invasion'? Airbnb in coastal Australia. *Annals of Tourism Research*, *81*, 102845. https://doi.org/10.1016/j.annals.2019.102845

Gutiérrez, J., García-Palomares, J. C., Romanillos, G., & Salas-Olmedo, M. H. (2017). The eruption of Airbnb in tourist cities: Comparing spatial patterns of hotels and peer-to-peer accommodation in Barcelona. *Tourism Management*, *62*, 278–291. https://doi.org/10.1016/j.tourman.2017.05.003

Hardy, M. A. (1993). *Regression with dummy variables*. SAGE. https://doi.org/10.4135/9781412985628

Hu, M. (2019). *Sharing economy: Making supply meet demand*. Springer. https://doi.org/10.1007/978-3-030-01863-4

Ioannides, D., Röslmaier, M., & Van Der Zee, E. (2018). Airbnb as an instigator of 'tourism bubble' expansion in Utrecht's Lombok neighbourhood. *Tourism Geographies*, *21*, 1–19. https://doi.org/10.1080/14616688.2018.1454505

Jin, B., & Moon, H.-C. (2006). The diamond approach to the competitiveness of Korea's apparel industry: Michael Porter and beyond. *Journal of Fashion Marketing Management: An International Journal*, *10*(2), 195–208. https://doi.org/10.1108/13612020610667504

Kamman, F. D.-J., & Nijkamp, P. (1991). Technogenesis: Origins and diffusion in a turbulent environment. In N. Nakićenović & A. Grübler (Eds.), *Diffusion of technologies and social behavior* (pp. 93–124). Springer. https://doi.org/10.1007/978-3-662-02700-4_5

Kharub, M., & Sharma, R. (2017). Comparative analyses of competitive advantage using Porter diamond model (the case of MSMEs in Himachal Pradesh). *Competitiveness Review*, *27*(2), 132–160. https://doi.org/10.1108/CR-02-2016-0007

Ki, D., & Lee, S. (2019). Spatial distribution and location characteristics of Airbnb in Seoul, Korea. *Sustainability (Switzerland)*, *11*(15). https://doi.org/10.3390/su11154108

Koenker, R. (2005). *Quantile regression*. Cambridge University Press. https://doi.org/10.1017/CBO9780511754098

Koenker, R., Chernozhukov, V., He, X., & Peng, L. (Eds.) (2018). *Handbook of quantile regression*. Chapman and Hall/CRC.

Kolosinska, M., Petrashchak, O., Kolosinskyi, I., & Katana, A. (2018). Tourism sector in transition economy on example of Ukraine: Determinants of competitiveness. *Geojournal of Tourism and Geosites*, *21*(2), 239–252. https://doi.org/10.30892/gtg.21119-284

Lee, G., Shao, B., & Vinze, A. (2018). The role of ICT as a double-edged sword in fostering societal transformations. *Journal of the Association for Information Systems*, *19*(3), 209–246. https://doi.org/10.17705/1jais.00490

Lorenzini, E. (2014). Innovation and e-commerce in clusters of small firms: The case of a regional e-marketplace. *Local Economy*, *29*(8), 771–794. https://doi.org/10.1177/0269094214556053

Mao, Y. (2014). Spatial analysis of tourism micro-entrepreneurship and poverty in North Carolina and its neighboring states.

Martinus, K. (2018). Inequality and regional development in resource economies of advanced capitalist economies (report). *Geography Compass*, *12*(11) n/a. https://doi.org/10.1111/gec3.12405

Nazariadli, S., Morais, D. B., Bunds, K., Baran, P., & Supak, S. J. R. S. (2019). Rural tourism microentrepreneurs' self-representation through photography: A counter-hegemonic approach. *Rural Society*, *28*(1), 29–51.

Nijkamp, P. (2017). The death of distance. In B. S. Frey & D. Iselin (Eds.), *Economic ideas you should forget* (pp. 93–94). Springer International Publishing. https://doi.org/10.1007/978-3-319-47458-8_40

Ofori, G. (1988). Construction industry and economic growth in Singapore. *Construction Management and Economics*, *6*(1), 57–70. https://doi.org/10.1080/01446198800000007

Park, S. (2017). *Digital capital*. Palgrave Macmillan. https://doi.org/10.1057/978-1-137-59332-0

Perry, M., & Rowe, J. E. (2015). Fly-in, fly-out, drive-in, drive-out: The Australian mining boom and its impacts on the local economy. *Local Economy*, *30*(1), 139–148. https://doi.org/10.1177/0269094214564957

Porter, M. (1990). *The competitive advantage of nations*. MacMillan. https://doi.org/10.1007/978-1-349-11336-1

Porter, M. (1998). Clusters and competition: New agendas for companies, governments, and institutions. In M. E. Porter (Ed.), *On competition* (pp. 197–287). Harvard Business School Publishing.

Ribes, J. F. P., Ramon Rodriguez, A., & Jimenez, M. S. (2011). Determinants of the competitive advantage of residential tourism destinations in Spain. *Tourism Economics*, *17*(2), 373–403. https://doi.org/10.5367/te.2011.0040

Rutten, R., & Boekma, F. (2005). Competitveness in regional clusters. The case of Oce's 'Knowledge Industry Clustering' project. In R. A. Boschma & R. C. Kloosterman (Eds.), *Learning from clusters: A critical assessment from an economic-geographical perspective* (Vol. 80, pp. 225–244). Springer. https://doi.org/10.1007/1-4020-3679-5_10

Sarkar, S., & Gurran, N. (2017, July 11–14). Shared urbanism: Big data on accommodation sharing in urban Australia. 15th International Conference on Computers in Urban Planning and Urban Management, Adelaide.

Scullica, F., & Elgani, E. (2018). Reinventing the hospitality: Sharing economy and new hospitality formats. In M. Bruglieri (Ed.), *Multidisciplinary design of sharing services* (pp. 63–79). Springer International Publishing. https://doi.org/10.1007/978-3-319-78099-3_5

Shuttleworth, K. (2017). Australia's top Airbnb host made $53 million in the past year. Domain.com. Retrieved November 21 from https://www.domain.com.au/news/australias-top-airbnb-host-made-53-million-in-the-last-year-20171124-gzsgg4/

Sigala, M., & Dolnicar, S. (2017). Entrepreneurship opportunities. In S. Dolnicar (Ed.), *Peer-to-peer accommodation networks: Pushing the boundaries* (pp. 77–86). Goodfellow Publishers. https://doi.org/10.23912/9781911396512-3605

Sigler, T., & Panczak, R. (2020, 13 February). Ever wondered how many Airbnbs Australia has and where they all are? We have the answers. The Conversation. Retrieved 19 August from https://theconversation.com/ever-wondered-how-many-airbnbs-australia-has-and-where-they-all-are-we-have-the-answers-129003

Sigler, T. J., & Martinus, K. (2017). Extending beyond 'world cities' in World City Network (WCN) research: Urban positionality and economic linkages through the Australia-based corporate network. *Environment and Planning a*, *49*(12), 2916–2937. https://doi.org/10.1177/0308518X16659478

Stimson, R. J., Roberts, B. H., Stimson, R. J., Stough, R. R., & Roberts, B. H. (2006). *Regional economic development: Analysis and planning strategy* (Second ed.). Springer Berlin Heidelberg.

Storey, K. (2001). Fly-in/fly-out and fly-over: Mining and regional development in Western Australia. *Australian Geographer*, *32*(2), 133–148. https://doi.org/10.1080/00049180120066616

Sundararajan, A. (2014). Peer-to-peer businesses and the sharing (collaborative) economy: Overview, economic effects and regulatory issues. https://republicans-smallbusiness.house.gov/uploadedfiles/1-15-2014_revised_sundararajan_testimony.pdf

Sweeney, S., & Gómez-Antonio, M. (2016). Localization and industry clustering econometrics: An assessment of Gibbs models for spatial point processes. *Journal of Regional Science*, *56*(2), 257–287. https://doi.org/10.1111/jors.12238

Thakuriah, P., Tilahun, N., & Zellner, M. (2016). Big data and urban informatics: Innovations and challenges to urban planning and knowledge discovery. In P. Thakuriah, N. Tilahun, & M. Zellner (Eds.), *Seeing cities through big data: Research, methods and applications in urban informatics*. Springer. https://link.springer.com/content/pdf/10.1007/978-3-319-40902-3.pdf

Torkington, A. M., Larkins, S., & Gupta, T. S. (2011). The psychosocial impacts of fly-in fly-out and drive-in drive-out mining on mining employees: A qualitative study. *Australian Journal of Rural Health*, *19*(3), 135–141. https://doi.org/10.1111/j.1440-1584.2011.01205.x

US Travel Association. (2019). The economic impact of travel on South Carolina counties 2018. https://dc.statelibrary.sc.gov/bitstream/handle/10827/31645/PRT_Economic_Impact_of_Travel_2019-08.pdf?sequence=1

Vlados, C. (2019). Porter's diamond approaches and the competitiveness web. *International Journal of Business Administration*, *10*(5), 33–52. https://ssrn.com/abstract=3452402, https://doi.org/10.5430/ijba.v10n5p33

Volgger, M., Taplin, R., & Pforr, C. (2019). The evolution of 'Airbnb-tourism': Demand-side dynamics around international use of peer-to-peer accommodation in Australia. *Annals of Tourism Research*, *75*, 322–337. https://doi.org/10.1016/j.annals.2019.02.007

Wang, C. C., Lin, G. C. S., & Li, G. (2010). Industrial clustering and technological innovation in China: New evidence from the ICT industry in Shenzhen. *Environment and Planning a*, *42*(8), 1987–2010. https://doi.org/10.1068/a4356

Wang, D., Li, M., Guo, P., & Xu, W. (2016). The impact of sharing economy on the diversification of tourism products: Implications for tourist experience. In A. Inversini & R. Schegg (Eds.), *Information and communication technologies in tourism 2016*. Cham.

Wang, L., Liu, J.-m., Wang, L.-e., Zhu, H., & Lin, J. (2018). Tourism resource assessment and spatial analysis of wine tourism development: A case study of the eastern foothills of China's Helan Mountains. *Journal of Mountain Science*, *15*(3), 645–656. https://doi.org/10.1007/s11629-016-4350-3

Warf, B. (2012). *Global geographies of the internet*. Springer.

Wells, J. (1984). The construction industry in the context of development: A new perspective. *Habitat International*, *8*(3), 9–28. https://doi.org/10.1016/0197-3975(84)90040-7

Weterings, A. (2005). The spatial clustering of knowledge-intensive services: Computing services in the Netherlands. In R. A. Boschma & R. C. Kloosterman (Eds.), *Learning from clusters: A critical assessment from an economic-geographical perspective* (Vol. 80) (pp. 275–301). Springer. https://doi.org/10.1007/1-4020-3679-5_12

Wilson, B., Hogan, A., Cuthill, M., Baker, D., Buys, L., & Burton, L. (2015). Someone else's boom but always our bust: Australia as a derivative economy, implications for regions. *Regional Science Policy & Practice*, *7*(2), 75–87. https://doi.org/10.1111/rsp3.12057

World Economic Forum. (2017). Collaboration in cities: From sharing to 'sharing economy'. http://www3.weforum.org/docs/White_Paper_Collaboration_in_Cities_report_2017.pdf

Xu, F., Hu, M., La, L., Wang, J., & Huang, C. (2020). The influence of neighbourhood environment on Airbnb: A geographically weighed regression analysis. *Tourism Geographies*, *22*(1), 192–209. https://doi.org/10.1080/14616688.2019.1586987

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