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To be or not to be a host in the peer-to-peer accommodation sector

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ABSTRACT

This paper explores the interdependency between the intention to host and one's expected profit level in the peer-to-peer accommodation sector, and examines whether factors affecting these decisions differ for those residing in cities and regional areas. Using survey data on 488 respondents, the intention to host was found to be disjoint from profit level and trust issues hindering hosting differed in cities and regional areas. While embracing sharing philosophy was a significant motive for would-be hosts, economic/opportunity cost and potential regulation in the form of threshold rental-free days have no impact on intention to host or expected profit level. These findings not only have implications for both traditional and online accommodation platforms in their quest to affect the supply of hosts but also informs regulators about who might host and why or what regulations might not deter would-be hosts.

1. Introduction

The sharing or peer-to-peer economy is a socioeconomic system that allows for shared creation, production, distribution, and consumption of goods and resources among individuals through online platforms (Botsman and Rogers, 2011). The buzz around the sharing economy is said to have begun in 2008 when the global financial crisis led people to consider new ways of earning supplemental income (Temperton, 2014). Today, that catalyst has resulted in the proliferation of services offered in the sharing economy and within the realm of the tourism and hospitality sector, peer-to-peer accommodation (P2PA) leads the way. According to the website of Airbnb, an online platform at the leading edge of the P2PA economy, as of March 2018, there are over 4.5 million rental listings in 191 countries.

A systematic review of P2PA research by Prayag and Ozanne (2018) reveal host behaviour as an expanding field of research interest. For instance, Chen and Xie (2017) and Xie and Kwok (2018) examined pricing issues of P2PA providers. Gunter (2018) and Liang et al. (2017) focus on what makes an Airbnb superhost while Karlsson and Dolnicar (2016) observe some aims of Airbnb hosts. To date, previous studies have only considered those who are already P2PA hosts with the exception of Mittendorf (2016) who exmained people's intention of becoming hosts.

The intention to host is the focus of this study as it is an important issue to understand the potential of an expanding supply of the P2PA market as major concerns have been raised in many countries with regards to the adverse impact this may have on the traditional accommodation sector and potential effects that go far beyond the accommodation sector. Mittendorf (2016) however focuses on only three aspects – familiarity with Airbnb, trust in the online platform and trust in renters on the intention to host. This paper goes beyond this by incorportaing a regional and city dimension as well as examining a range of issues not considered before. More specifically, the following research questions using a sample of Australian residents is the focus here:

1) Is the intention to become a P2PA host a joint decision with their expected profit from renting? What impact does regulation in the form threshold rental-free days (the number of days a host can rent without the penalty of paying taxes) have on these decisions?
2) What are the motivations, barriers, socio demographics, and other relevant variables that affect the intention to become a P2PA host? Is there a city-regional divide among potential P2PA hosts?
3) What are the motivations, barriers, socio demographics, and other relevant variables that influence the expected level of profit of potential hosts? Is there a difference among city and regional dwellers?

The first question tests for the dependence between the intention to host and the expected profit level of the would-be host. This is important because one may decide to become a host if one can earn enough money to make it worthwhile. It is thus appropriate to use the Heckman (1976) model to test for the existence of this potential interdependency before applying an appropriate empirical model to consider the determinants of the expected profit level and the intention to host. While profit related to making money may be a key driver of the intention to host, other observed (but empirically untested) motives

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such as social interaction and sharing economy ethos (Karlsson and Dolnicar, 2016) are also examined for their influence.

In any business venture, perceived risks affect perceived value and hence profit of the firm (Toms, 2010). Thus in P2PA, risks will affect the intention to be a host and expected profit depends on both costs and benefits. Costs can be both tangible and intangible and an examination of barriers or perceived disadvantages to P2PA hosting can shed light on these costs. This is supported by Turban et al. (2015) who explain that both inhibitions and motives are antecedents in the intention to buy and sell P2P products and services in e-commerce markets. Apart from motivations, results show differences in socio-economic groups and the role of people as users or providers in the sharing economy (Böcker and Meelen, 2017). Since participants in the sharing economy are not likely to be uniform across population categories (Hellwig et al., 2015), this study includes socio demographic variables to capture such characteristics if any.

In addition, other relevant variables such as being close to shops and the experience from having used P2PA before are incorporated in the model to minimise omitted variable bias in the model estimations (Wooldridge, 2010). Thus to provide a more holistic approach to understanding the factors that influence the intention to host and one's expected profit, barriers, motivations, sociodemographic and other variables are included in a single empirical framework for analysis.

Examining the impact of regulation is another contribution of this study related to the push to restrict the expansion of P2PA in many cities noted by Guttentag (2017) and Hajibaba and Dolnicar, 2018b).[1] For instance, cities such as in Barcelona and Berlin, measures have been taken to restrict the number of threshold-free days (when they are allowed to rent) that P2PA hosts can enjoy, and others such as the UK and some states in the US have imposed lodging taxes. Thus Prayag and Ozanne (2018) identify regulating P2PA as a key theme in research but note that studies to date in this area have been reviews and qualitative analyses and there are no empirical studies on the evidence of the impact of regulation. This study fills this gap and Australia is an interesting case study as currently there are discussions on regulations to provide a level playing field for the traditional accommodation sector to compete with P2PA.

The concern of an increase in P2PA supply has however met with mixed responses. For instance, there is evidence that P2PA has negatively affected the revenue and occupancy rate on hotels and motels (Foye, 2016; Xie and Kwok, 2018; Zervas et al., 2017) while Lane and Woodworth (2016) and Blal et al. (2018) report otherwise. Guttentag and Smith (2017) identified low end hotels and traditional bed and breakfasts as being in most danger while Hajibaba and Dolnicar (2017) also found youth hotels and holiday apartments to be substitutable by P2PA. There is also concern that being a P2PA host has become an attractive venture for people to take their unit off the rental market and this not only decreases the supply of housing and raises rental prices (Grimmer and Massey, 2018) but it also spurs displacement, gentrification, and segregation (Lee, 2016).

The last contribution of this study lies in the spatial analysis of whether there is a divide in the arguments for and against regulating P2PA in the city and regional areas. For instance, the Australian Regional Tourism Network and the Holiday Letting Organisation from the coastal areas argue that P2PA allows access to an untapped market and could meet demand in regional economies to attract tourism investment (Davidson, 2016). In the Tasmanian state of Australia, Grimmer and Massey (2018) show that small business especially in remote areas are being helped by Airbnb. Thus this study examines if there are differences among those living in cities and regional areas in their perceived barriers and motivation towards becoming hosts in the P2PA sector. It has been suggested by Karlsson et al. (2017) that in metropolitan areas where P2PA options are in ample supply, hosts may be under more pressure to be lenient in accepting bookings. Thus the geographical consideration of cities and regional areas has useful implications for both traditional and online accommodation platforms in their quest to influence the supply of hosts and their expected profit level.

2. Literature review

With P2PA providers, studies such as Gibbs et al. (2018), Tuebner et al. (2017), and Wang and Nicolau (2017) examined determinants of host pricing and compared it with hotels. In the context of Couchsurfing (a non-commerial P2PA platform[2]), Lampinen (2016) investigated how access to domestic space and privacy rules are establised within the host-guest sphere. Mauri et al. (2018) examines the role of personal reputation and product description on the popularity measures of Airbnb listings while Karlsson et al. (2017) surveyed Airbnb hosts to examine specific attributes of the online booking inquiry that affect the likelihood of them accepting renters.

In an exploratory note (with no statistical testing) Karlsson and Dolnicar (2016) observe that the aims of Airbnb hosts are to make extra money, enjoy social interaction and exercise their desire to share. Hardy and Dolnicar (2018) discuss the relationship that P2PA hosts have with the online accommodation platform as a love-hate one while Hajibaba and Dolnicar (2018a) examine if hosts discriminate. Deale and Crawford (2018) provide a qualitative account of perceptions of the online community marketplace based on interviews of existing P2PA providers. Lastly, a report from the Pew Research Centre (2016) profiles some socio demographics of P2PA hosts in the American market but this exercise suffers from sample selection bias as it relies heavily on who responded to the surveys and not robustly analysed using any modelling effort.

2.1. Motive(s) to host

The identified motives of P2PA hosting by Karlsson and Dolnicar (2016) such as the importance of earning extra money, social interaction and the sharing philosophy as a key ethos of the collaborative economy are examined in this study. The first two motives are measured using a Likert scale for the extent of these motives' importance to hosting while the desire to share which was noted to be a motive by only 14% of the Airbnb hosts by Karlsson and Dolnicar (2016) is examined by considering the three aspects as listed in Appendix A.

For instance, the sharing economy has been described to be beneficial as Botsman and Rogers (2011), and Hamari et al. (2015) point out that sustainability and enviromental awareness that come along with sharing resources such as energy and water consumption are key aspects of the sharing economy. In fact, Airbnb (2014) reported that having Airbnb guests in Boston over a year resulted in an estimated energy savings equivalent to 220 homes, greenhouse gas emissions reduction of 380 cars, and waste reduction of 70 metric tons. The *sharing economy philosophy* entails the recognition that ordinary people want to earn money by using their unused space more efficiently and embracing the usefulness and innovation of the smartphone/internet technology as an important innovation in their lives (Mohlmann, 2015; Slee, 2015). If hosts share such beliefs, they will be more inclined to particpate in the P2PA sector.

[1] Pforr et al. (2017) review governance and policy responses to Airbnb in nine international cities.

[2] Commercial P2PA platforms involve a rental fee exchange between renters and hosts but non-commercial P2PA platforms (such as CouchSurfing, HomeSwap, HomeExchange) do not and they often rely on the reciprocity of the users.

2.2. Barriers to hosting

With barriers to hosting, five types are considered and Appendix A lists the features underlying these key barriers. The information for them were drawn from existing literature as well as several opinion pieces, anectodal evidence on popular press, blogs, and Airbnb websites highlighting concerns and problems that P2PA hosts and guests have. The barriers are identified and explained below.

2.2.1. Economic/opportunity cost

A number of aspects related to *economic/opportunity cost* are identified as a potential consequence of becoming a host. While there could be costs related to the purchase of bedding, pillow and other things, these are often not major. Also, while it is free to post a listing on Airbnb, Airbnb however charges travellers a guest booking fee of 6%–12% and charges hosts a service fee of 3%. However, a host has to consider the time and effort required in the whole process. This goes beyond the set up cost of putting together a host profile complete with pictures of one's place and advantageous features online. There is the maintenance of the place (sometimes a cleaning fee may be charged by the host) and answering requests and processing online bookings and payment. These time consuming chores have an opportunity cost. By and large, economic/opportunity costs may be passed on to consumers in the form of high prices.

Other direct monetary costs pertain to the potential of lodging taxes, being sued if things go wrong, and insurance policies for damage. While there are no lodging/bed taxes in Australia (that hotels pay), a tax on P2PA cannot be ignored given that a value added tax on Uber, the ride-hailing sharing economy, has been levied in the New South Wales state of Australia. Elsewhere, lodging taxes are common. For instance, in the US, it can range from 5% to 15% depending on the city while in the UK it is 20%. Taxation has been touted to be one form of regulation as a means of a level-playing field for P2PA to compete with hotels (Katz, 2015). Taxation and registration of Airbnb listings are also being considered by some councils in Australia (Bainbridge, 2017). Anecdotal evidence on damage to property on listings in Airbnb as well as concerns on guests suing hosts for falls and injury have also emerged on various blogs. Koolhaven et al. (2016) discusses a range of liability issues in the collaborative economy and these highlight the need for hosts to take out public liability insurance as current home insurance policies do not cover the home when run as a business.[3]

2.2.2. Moral responsibility

Another responsibility that the host may feel is towards their neighbours. For instance, there is the possibility that neighbours living around the host may dislike the comings and goings of strangers, which may be seen as impinging on their community and personal safety. There is thus a moral responsibility that hosts owe to their neighbours. And possibly to the tax authorities, as rental income earned from P2PA should be declared for tax purposes. In fact, a market survey report conducted by TNS Sofres in France reveals that only 15% of the participants reported the income through their transactions in the sharing economy (De Groen and Maselli, 2016). Lastly, a responsibility to be truthful about the description of the room and surroundings that is placed on the P2PA website is also important. These aspects are termed as *moral responsibility* which Dredge (2017) discusses as important issues of responsibility and care in the collaborative economy.

2.2.3. Trusting the guest

Perhaps the single most important element of the sharing economy is the trust between strangers (Sundararajan, 2016; Botsman and Rogers, 2011). The issue of trust shaped two-thirds of consumers' perceived fears about participating in the sharing economy (Olson, 2013). This may take the form of losing one's privacy or personal safety (Deale and Crawford, 2018). The latter can also be compromised when a host provides the guest with the house key and cannot ensure that the key does not get duplicated for access into the house in the future. Future security is compromised when you let a stranger into one's home who may note aspects in the house for easy entry or an insight into host's routine of coming and going out patterns. Often the host's address is made available after a booking interest is indicated and this could be a concern as not all who surf the P2PA platform may be genuinely looking for a room to rent. Studies such as Gunter (2018) and Mauri et al. (2018) have also drawn attention to the importance of identity disclosure and provider's photos to building host reputation and doing this may leave would-be hosts feeling exposed. Hence these issues are related to *trusting guest*.

2.2.4. Trusting the platform

It has been argued that P2PA platforms can self-govern, enable transparency and potentially monitor each other to build trust (Dredge and Gyimóthy, 2017). This is made possible by checks by both host and user parties. One avenue for that is the profile on guests but not all may have a such a profile although Airbnb encourages guests to link their profile to a reputable social media account such as Facebook to prove to hosts who they are. The other means of verification for identity are scanned official ID, driver's license, passport, email address or phone number that Airbnb has but these can be viewed as invasive by some guests.

The other avenue for checks is the reviews mechanism. The guest is able to view the reviews provided by previous guests on the potential host and the guest is able to verify the identity of the host, and view the reviews given by the host on previous guests. But reviews on both guest and hosts cannot be fully trusted. For instance, Amazon took 1000 people to court in the US in 2015 for allegedly offering to post fake glowing write-ups while Yelp, Amazon and TripAdvisor have also been targets of criticism about phoney reviews of hotels and businesses. There is however a difference between these websites and Airbnb as anyone can write a review for those websites but that is not the case with Airbnb although Bridges and Vasquez (2016) and Zervas et al. (2015) noted that the reviews on Airbnb are overly positive. In any case, there was a probe by the Australian Competition and Consumer Commission in 2016 into customer reviews for the sharing economy companies such as Uber and Airbnb (Wilkins, 2016). At the same time, online ratings provided by guests are vital in this business to build reputation as electronic word of mouth be it positive or negative reviews affects sales and attitudes (Jalilvand et al., 2012; Vermeulen and Seegers, 2009).

The above issues relate to *trusting the online mechanism/platform* which Mohlmann (2015) has examined for those who may consider using P2PA instead of the hotel. Worries about trusting the network that facilitates self-managed exchanges was reported by 23% of the respondents (Olson, 2013). This pertains to bookings, payments, cancellations or refunds going awry. The importance of cancellation rates and procedures around it have been shown to be important for an Airbnb host status (Gunter, 2018). More often than not, these aspects are written in small print and left to the guest to ensure they are clear on the risks and procedures related to cancellation and refunds. The hassle of dealing with these issues and who should be responsible for them is not explicit. For instance, the Pew Research Centre (2016) notes that 57% of home-sharing users believe that both homeowners and services should be responsible for resolving payment issues between hosts and guests; some 31% think this is the responsibility of the platform services alone while 11% think it is the responsibility of individual homeowners.

A related issue is the potential legal uncertainty surrounding the existence of P2PA and the ongoing protest and legal battle faced by Airbnb in many cities including Barcelona, Berlin, New York, San Francisco, and Los Angeles. For instance, Airbnb will now block hosts from letting homes for more nights than the legal limit in London and Amsterdam while in San Francisco and New York, the company has

[3] Retrieved from https://www.choice.com.au/money/insurance/home-and-contents/articles/airbnb-insurance-warning-131115, dated 13 Sept 2015.

banned new hosts from having more than one listing in an effort to limit commercial operators. Guttentag (2017) and Hajibaba and Dolnicar (2018b) provide a good overview of Airbnb's legal issues and regulations considered in some cities.

In Australia, the lack of clear regulation, the ongoing consultation and the parliamentary inquiries of the two largest states of the P2PA sectors, is creating concerns on the extent to which it is viable for P2PA to continue and operate. For instance, it is unclear if zoning laws are being violated with P2PA in Australia on whether homeowners do owe land tax on short-term lodging P2P arrangement although a person's principal place of residence is exempt and land tax generally applies to investment commercial premises. There have however been discussions on the possibility of allowing for a certain number of days before a permit is required for P2PA rental (Minifie, 2016; New South Wales Parliament, 2016). On average, Australian Airbnb hosts have guests around 28 nights a year and earn about A$4500 (Deloitte Access Economics, 2017). Thus to examine if a cap on permitted number of total nights' stay matters in terms of their intention to host and expected profit level, respondents are asked what their threshold permit-free days (in terms of the number of days they are allowed to rent free) for tax exemption would be before they decide to host.

2.2.5. Inconvenience

With P2PA, there are also several *inconveniences* that hosts may have to bear as home-sharing users place varying levels of responsibility on homeowners when it comes to managing specific aspects of the day-to-day user experience. This could impinge on the hosts' ability to do their own things and they may find that they need to be around a lot of the time to make things work (Deale and Crawford, 2018). For instance, if the hosts are planning to be away, then this will mean losing out on potential customers. In fact, there are now Airbnb property management services in various Australian states because of the growing needs of landlords precisely because people are finding the job of hosting too much work for them.

In addition, as part of the ethos of the sharing economy is interacting with guests, hosts may need to be more sociable than they naturally are or feel the pressure that they have to be nice to their guests so that they would be provided with positive feedback on their hospitality service. Even though only a room is rented out, the fact that the guests can occupy other areas of the house means that hosts need to be ensure that their place is clean and tidy and this may mean that more effort will be needed for the upkeep of the place to ensure a good review is provided. Privacy management with space and the hassle of dealing with guests can be issues of concern (Lampinen, 2016).

3. Methodology

3.1. Survey design

An online questionnaire was used by a survey sampling firm in December 2016 to obtain about 500 responses, of which 488 were usable for analysis. The responses are from adults aged 18 years and above who have used P2PA before in the last one year but are not P2PA hosts. The survey on Australians in this study were those residing in the regional and city states of New South Wales, Victoria, and Queensland. Regional areas in Australia excludes all capital cities and the Gold Coast in Queensland in line with the definition from Tourism Research Australia (2011). The sample was chosen to be representative of about 50% males and females to have a more balanced gender analysis and the proportions in the age groups were targeted to represent the 2015 population age demographics from the Australian Bureau of Statistics.[4]

It must however be noted that the usual limitations apply with sampling firm's online panel and is thus not random. First, firms use their particular database for the survey. Second, the sample will consist only of those who use electronic media but online surveys exhibit no more danger than other sorts of non-probability sampling in terms of self-selection bias (Kim et al., 2018). Furthermore, an online survey provides easy access to hard-to-reach populations (Kim and Li, 2009), and for the purposes of this survey on regional areas, this was the most suitable method of sampling. Drawing on the explanation of Ring et al. (2016), as the primary aim of the study is to explore the behavioural patterns, using online surveys is not problematic.

The survey was administered to those who have used P2PA before as it would be reasonable to expect that those intending to be P2PA hosts will first try out the service themselves to get a better feel of the market and understand how things work. This is an important consideration as Poon and Huang (2017) found that Airbnb users and non-users varied in their perception of Airbnb and evaluation of Airbnb while Mittendorf (2016) finds that familiarity with P2PA influences intention to host. The use of P2PA in this study was specific to having used commercial online platforms.[5] The overall satisfaction from having used P2PA was measured as a Likert scale from 1 to 5 with highly satisfied being at the top of the scale.

The survey questions on the list in Appendix A were designed to have a response using a Likert scale from 1 to 5 ranging from 'strongly disagree' to 'strongly agree'. The survey was first pre-tested using a convenience sample of 25 respondents before fine-tuning appropriately for use. The question on regulation related to the permit-free threshold days was examined by providing the respondents the following scenario and question: *There is a possibility that hosts will have to pay taxes on the rent they received after renting freely for a maximum number of days a year. What would be the minimum acceptable number of days before paying tax, for you, to consider it worthwhile being a host? ____ days a year*

It was found that a question on profit was deemed more informative and comparable than the price a night one would charge. As price will directly depend on location, attributes of living environment, amenities and services offered (Wang and Nicolau, 2017), it was better to obtain information on expected revenue net of any costs incurred (such as cleaning costs and fees paid to online platform) as maximising profit is a common objective of any business. The survey provided eight levels of profit range from 20% to more than 80% (see Table 1) for the respondents to choose from.

3.2. The empirical model

Drawing on the items listed in Appendix A, the principal component analysis (PCA) is used to extract linear composites of observed variables identified in the literature for various constructs (Tabachnick and Fidell, 2013). These constructs are then used as composite variables in the model to examine the factors that affect the intention to host and if the respondent intends to host, to further examine the factors that affect the expected profit level. While it is arguable that monetary consideration may not be a key driver for a host, the decision as to how much one would want to charge is at least conditional on the intention to participate in the first place.

To consider the possibility of this joint decision making process, we first test for the evidence of interdependency using the Heckman (1976) model. Several studies such as Algere and Pou (2016), and Saayman et al. (2016) have applied this model in the tourism literature. The joint decision making process consists of a two-step integrated regression analysis defined as:

$$y_i = x_i'\beta + \varepsilon_i \quad (1)$$

$$z_i = w_i'\alpha + u_i \quad (2)$$

[4] Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/mf/3235.0/

[5] As commercial P2PA platforms operate differently from non-commercial P2PA platforms (see footnote 1), it is important not to combine these two types as their differences that may bias the results.

Table 1
Summary Statistics from Survey Respondents.

	Percentage of Sample	
	Living in Cities	Living in Regional Areas
Sample size	252	236
Females	50.4	51.5
Males	49.6	48.5
Age 18–24	9.2	5.9
Age 25–34	16.0	11.4
Age 35–44	21.2	9.9
Age 45–54	19.6	18.8
Age 55–64	14.4	22.3
Age 65 and above	19.6	19.6
Work Status		
Working full time	64.5	34.9
Working part-time	16.0	18.8
Others	19.5	16.3
Annual Household Income		
Less than A$25 000	14.4	24.8
A$25 000 – A$39 999	9.2	21.8
A$40 000 – A$54 999	9.6	9.4
A$50 000 – A$69 999	16.0	16.3
A$70 000 – A$ 84 999	12.4	6.9
A$85 000 – A$99 999	8.0	6.4
A$100 000 – A$129 999	13.6	8.4
A$130 000 – A$174 999	11.6	3.5
Above A$175 000	5.2	2.5
Education		
Up to high school	24.0	35.6
Vocational/Apprenticeship	20.8	29.7
University	38.4	26.2
Post graduate	16.8	8.5
Intend to be a Host	49.6	41.7
Profit level threshold to host		
20% or less	10.4	12.9
21%–30%	15.6	20.3
31%–40%	16.0	18.8
41%–50%	22.4	16.3
51%–60%	14.8	12.4
61%–70%	6.0	4.4
71%–80%	6.7	6.4
More than 80%	8.1	8.5
	Mean (standard deviation)	
Number of times stayed in P2PA	4.78 (10.97)	3.26 (7.01)
Permit-free days threshold per year	64.46 (114.91)	62.81 (85.36)
Satisfaction from P2PA stay*	4.26 (0.79)	4.34 (0.81)
Importance of being close to shops and transport*	3.92 (1.14)	4.01 (0.95)
Importance of earning extra money	4.40 (0.92)	4.12 (0.88)
Importance of social interaction	4.02 (0.76)	4.13 (0.91)

Note: * Based on Likert scale of.1–5.

where y_i in the response Eq. (1) representing the expected profit level with eight categories (ranging from 20% or less, 21%–30%, …. more than 80%) as seen in Table 1, is only observed when $z_i = 1$ and z_i is a binary variable in the selection Eq. (2) representing the choice, to host or not to host. The vector β (α) consists of the factors that affect expected profit level (intention to host) respectively. The error terms, ε_i and u_i, follow a bivariate normal distribution with a correlation coefficient that captures the extent of the relationship between the above two equations if the intention to host is jointly undertaken with the decision on expected profit level. If this correlation coefficient is significant, then the Heckman formulation is appropriate for modelling the decisions jointly.

Otherwise, two separate regressions are undertaken to examine which factors, and the extent to which they affect the likelihood of hosting to differ from that of one's expected profit level. Separate probit model for these two decisions could be estimated and this is given by

$$y^* = \sum_{i=1}^{k} \beta_i X_i + \varepsilon \quad (3)$$

where y^* is the unobserved latent index of j categories determined by observed factors given by Xs, which are the explanatory variables identified before, and the error term ε is normally distributed. The significance of the estimated coefficients from the above probit model can provide information on the key factors that affect the probability that the observed y is in category j. For instance, with the intention to host, j is a binary variable taking the value of one and zero, representing a yes-no response respectively. With the expected profit level, j is an ordered variable taking the values of 1 (20% or less) to 8 (more than 80%) representing the profit levels in Table 1. The maximum likelihood estimation technique in the STATA software was used to estimate the parameters.

4. Results and discussion

Table 1 shows the summary statistics of the data collected from the survey respondents. Prior to obtaining the constructs on the list in Appendix A, the correlations between each of the items were checked for correlations above 0.90, as such multicollinearity would indicate a problem of two items not being sufficiently distinct (Sarstedt and Mooi 2014). As none of the correlations were near that threshold, all items were retained for the PCA to obtain the relevant constructs. The oblique rotation instead of the orthogonal/varimax rotation underlying PCA was also used to minimise any existing correlations (Tabachnick and Fidell, 2013). Results are presented in Table 2. The suitability of the data for using PCA was verified with the Kaiser-Meyer-Olkin's measure of sample adequacy being more than 0.87 and Bartlett's test of sphericity with a p-value of 0.01.

The above analysis recommended a 6-factor solution (explaining 66% of the total variance) with all the Eigen values being above 2.5 and factor loadings were above 0.68 (Field 2003) apart from one item for moral responsibility given by MR3. Although the factor loading for MR2 is 0.64, this item was kept as its factor loading increases to above 0.7 when different combinations of the items underlying the barriers were used. Tests revealed that all six constructs had a Cronbach's alpha

Table 2
Factor Loadings and Reliability of Principal Component Measures.

Factors/Items	Loadings	Eigen value	Alpha	AVE	CR
Economic/Opportunity Cost		4.31	0.78	0.79	0.75
EC1 Not worth the time and effort	0.68				
EC2 Possible lodging tax	0.74				
EC3 Becoming liable	0.75				
EC4 Cost of additional insurance	0.85				
Trusting Guest		5.18	0.82	0.84	0.81
TG1 Personal safety concerns	0.81				
TG2 Lack of online guest profile	0.72				
TG3 Providing key to my place	0.79				
TG4 Availability of my address	0.75				
Trusting Online Platform		4.02	0.79	0.77	0.78
TP1 Booking and payment issues	0.83				
TP2 Negative reviews by guest	0.77				
TP3 Legal uncertainty of P2P	0.76				
TP4 Cancellation and refund	0.78				
Inconvenience		4.96	0.86	0.81	0.89
IC1 Need to be around	0.86				
IC2 Need to keep house cleaner	0.81				
IC3 Hassle of dealing with guests	0.80				
IC4 Expected to be sociable	0.72				
Sharing Economy Philosophy		5.06	0.84	0.82	0.91
SP1 Efficient use of space	0.87				
SP2 Environmentally friendly	0.79				
SP3 Embrace innovation	0.82				
Moral Responsibility					
MR1 Unhappy neighbours	0.71	2.87	0.71	0.72	0.70
MR2 Meeting guest expectations	0.64				

Table 3
Discriminant Validity Test Results on Latent Variables (correlation coefficients).

	Economic/Opportunity Cost	Concerns Trusting Guest	Concerns Trusting Platform	Inconvenience	Sharing Philosophy	Moral Responsibility
Economic/Opportunity Cost	1					
Concerns Trusting Guest	0.41	1				
Concerns Trusting Platform	0.43	0.36	1			
Inconvenience	0.41	0.32	0.38	1		
Sharing Philosophy	−0.04	−0.11	−0.07	−0.15	1	
Moral Responsibility	0.24	0.15	0.23	0.19	0.06	1
Square root of AVE	0.88	0.92	0.88	0.90	0.91	0.85

larger than 0.78, showing internal consistency while the average variance extracted (AVE) scores above 0.6 indicate convergent validity. The composite reliability (CR) scores of above 0.75 and the square root of AVE being greater than the correlation between the constructs given in Table 3 support discriminant validity.

The constructs were then included together with other factors in the Heckman model given by Eqs. (1) and (2) and estimated using the full information maximum likelihood method. The estimation was undertaken for the full sample with a dummy for those staying in cities. The number of P2PA stays was used as the identifying restriction to correct for collinearity and enable the model to converge. Robust standard errors were also obtained to correct for the otherwise inflated values in the Heckman model (Moffitt, 1999). It was found that the value of the correlation coefficient between Eqs. (1) and (2) at 0.28 was not significant with the Wald X^2 test statistic of 0.88. Hence the model rejected the hypothesis that there is dependence between the intention to host and the level of expected profit. Details of these results were not shown here (but are available upon request) as the Heckman model estimates cannot be used for interpretation given that it was not found to be appropriate.

Therefore, the probit models for the two decisions are estimated separately. It was found that those living in cities were more likely to host and the analysis was undertaken to then compare if the factors affecting the intention to host were different in cities and regional areas. The results are reported in Table 4 while the analysis on expected profit level did not show significance for the cities or regional areas and so the sample was combined in the results in Table 5. The overall fit of the models in Tables 4 and 5 is reasonably good, with the log likelihood value with a level of significance less than 0.01 and the pseudo-R^2 were above 0.3.

Table 4 shows that those who are younger are likely to host whether they live in cities or regional areas. While it is reported that the average age of an Australian Airbnb host is 44 years (Deloitte Access Economics, 2017), hosts aged 60 and older are growing at a rate of 20% while 50–59 year olds now make up a third of Airbnb hosts.[6] In Canada too, seniors are the fastest growing demographic of Airbnb hosts and one reason for that is, a lot of retirees might not have set aside enough to get by on and the extra income is welcome.[7] The survey of the sharing economy (though not specific to P2PA) of PricewaterhouseCoopers (2015) shows that 24% of its providers are at least 55 years and 38% of them are above 45 years of age. However, there could be a number of reasons as to why someone older is unlikely to host – they could be financially comfortable at a later stage in their life and do not need the extra income or that they have other concerns. To test these hypotheses further, an interaction term between those aged 55 years and above[8] and income, and interacting age with other barriers was included in the model. It was found that older people in relation to their income was an insignificant factor but the barriers were more significant deterrents to the older cohort than the younger cohort.

However, no particular gender (given by the insignificance of the male variable) is more inclined to be a host but a part-timer worker in regional areas is likely to become a host although the insignificance of income in regional areas does not appear to support this. The evidence of higher income earners being more likely to host is however only seen in cities but this cannot be inferred to mean that making money is less of a motive. In fact, PricewaterhouseCoopers (2015) report that of the providers in the sharing economy, 25% earn at least US$100 000.

In terms of the influence of frequent use of P2PA, this factor is significant for those living in cities and in regional areas although satisfaction gained from P2PA use has no effect. It is also the case that those who live close to transport and shops are not necessarily more likely to be hosts in both cities and regional areas but this plays a role in their expected higher profit. The latter is often due to being able to charge a premium when one's home is close to public transport and shops.

While trust is important and a barrier, this takes different forms in adversely influencing the intention to host. Interestingly, Liang et al. (2018) finds that for P2PA customers too, trusting online platform is different from trusting hosts and that the former does not influence the latter. Mittendorf (2016) found that trust in renters and trust in online platform to be influential to the offer of accommodation but his study misses an important dictinction on location. For instance, the results from this study show that city dwellers are more concerned about trusting guests while regional dwellers are more worried about trusting the online platform. Hence P2PA companies have different fears to allay and convince potential hosts depending on where they live. While it is more difficult for P2PA companies to deal with the trusting guest issue, it could however address the platform concern of the regional people by providing a trial for the use of their platform to generate the trust that is required from hesitant suppliers before they sign up and pay the service fee. Effort of the P2PA online platform towards providing a 24-hour help desk to attend to calls on queries of concerns and help to set-up the listing would make potential hosts feel at ease and confident about using the platform.

Inconvenience is viewed as a more significant deterrent for regional dwellers than city folk in becoming potential hosts. To overcome these obstacles, P2PA companies could thus work towards dissipating these specific concerns in a targeted approach to attract more suppliers. For instance, the online platforms could provide information on a network of hosts that can be contactable in the potential hosts' locations for them to discuss their concerns and learn from the experience of those who are already hosting. This may also help attract older residents to become hosts given the evidence that this cohort is particularly concerned. Providing suggestions to get around the inconvenience issue and floating the idea of engaging someone to undertake tasks that make it more convenient is an area the P2PA companies can channel their effort in their marketing strategy to attract more people to sign up as hosts. There is now a proliferation in the support services to P2PA hosts such as meet and greet, providing key to arriving guests, and cleaning services to make it manageable for those who want to have guests but are not willing or do not have the time to do so.

[6] Retrieved from http://www.afr.com/news/retirees-turn-to-airbnb-for-extra-cash-20160816-gqu3db, dated 29 Aug 2016.

[7] Retrieved from http://www.theglobeandmail.com/report-on-business/senior-hosts-grow-exponentially-with-airbnb/article32350445/, dated 14 Oct 2016.

[8] An attempt was also made to use lower age thresholds such as 45 years and below but that did not provide significant results. With the age cohort of 65 years and above, the results were qualitatively similar to those aged 55 years and above.

Table 4
Results on the (Author req) Please note that Table 4 & 5 allignment of the values are still not correct. Could you please allign the valuesIntention to Host.

	Those living in cities			Those living in regional areas		
	Coefficient	Std. error	t-statistic	Coefficient	Std. error	t-statistic
Constant	−1.56	0.876	−1.78*	−1.28	0.650	1.97**
Male	−0.11	0.200	−0.55	−0.17	0.144	1.18
Age	−0.23	0.074	−3.12***	−0.28	0.105	−2.66***
Work Status (others as benchmark)						
Work part-time	0.04	0.027	1.46	0.05	0.029	1.73*
Work full-time	0.06	0.045	1.32	0.15	0.101	1.49
Income	0.09	0.052	1.72*	0.17	0.110	1.55
Educational level	0.14	0.103	1.36	−0.21	0.130	−1.61
Number of P2PA stays	0.04	0.020	2.03**	0.08	0.044	1.81*
Satisfaction from P2PA stays	0.44	0.301	1.46	0.62	0.473	1.31
Close to transport and shops	0.38	0.314	1.21	0.13	0.113	1.15
Importance of earning extra money	0.16	0.075	2.12***	0.19	0.095	1.99**
Importance of social interaction	0.11	0.063	1.75*	0.14	0.070	2.01**
Permit-free threshold days	0.02	0.143	0.14	0.01	0.034	0.29
Economic/opportunity cost	−0.12	0.085	−1.42	−0.04	0.031	−1.31
Concerns trusting guest	−0.67	0.220	−3.05***	−0.65	0.385	−1.69*
Concerns trusting platform	0.06	0.052	1.16	−0.77	0.293	−2.63***
Inconvenience	−0.94	0.525	−1.79*	−0.83	0.278	−2.99**
Sharing philosophy	0.91	0.204	4.46**	1.21	0.738	1.64*
Moral responsibility	−0.41	0.313	−1.31	−0.15	0.126	−1.19
Relative to the state of Queensland						
New South Wales	0.03	0.035	0.85	0.05	0.054	0.92
Victoria	0.16	0.163	0.98	0.24	0.214	1.12
Sample size		252			236	
Pseudo R^2		0.33			0.37	
Log likelihood		−996.78			−1132.57	

Note: ***,**, and * indicates significance at 1%, 5%, and 10% level respectively.

Table 5
Results on Expected Profit Level.

	Coefficient	Std. error	t-statistic
Constant	1.82	0.915	1.99**
Live in city	0.17	0.099	1.71*
Male	0.88	0.624	1.41
Age	0.09	0.098	0.92
Work Status (others as benchmark)			
Work part-time	0.59	0.584	1.01
Work full-time	0.51	0.554	0.92
Income	0.06	0.042	1.44
Educational level	−0.15	0.086	−1.74*
Number of P2PA stays	−0.13	0.133	−0.98
Economic/opportunity cost	0.15	0.143	1.05
Concerns trusting guest	0.34	0.258	1.32
Concerns trusting platform	−0.45	0.445	−1.01
Permit-free threshold days	−0.34	0.304	−1.12
Close to transport and shops	0.17	0.094	1.81*
Earning extra money	0.18	0.083	2.16**
Social interaction	0.11	0.077	1.43
Moral responsibility	−0.24	0.178	−1.35
Inconvenience	0.23	0.155	1.48
Sharing philosophy	−0.16	0.072	−2.21**
Relative to the state of Queensland			
New South Wales	0.12	0.140	0.86
Victoria	0.21	0.184	1.14
Sample size		488	
Pseudo R^2		0.31	
Log likelihood		−1416.35	

Note: ***,**, and * indicates significance at 1%, 5%, and 10% level respectively.

A key consideration in wanting to be a host are the motives of making extra money and social interaction in cities and regional areas. There is also the embracing of the sharing economy philosophy where social responsibility with regards to environment, use of space as well as the willingness to use smart technology play a role. However, regardless of city or regional area there is no concern with regards to economic/opportunity cost such as time and effort needed to venture into hosting and neither are any impeding issues on potential future costs related to lodging taxes or liability. It should be further scrutinised if this is because these would-be hosts used P2PA themselves, and are thus less concerned about being held responsible for damages in one's home based on the mutual understanding of host and guests who participate in the shared economy. Having experienced being on the customer side of things, may be providing greater confidence on the limited chances of being made liable or having things go wrong, or realising that hosting is not a significant economic/opportunity cost.

With regards to profit expectations (Table 5), city dwellers have a higher expectation, albeit only at the 10% level of significance. While profit expectations do not differ based on age, gender, income and work status, those who are better educated however have a significantly lower expectation. Tussyadiah and Pesonen (2018) explain that the well-educated may have a greater awareness of the value in collaborative consumption. This for instance could be reflected in the significance of the sharing economy philosophy in the intention to host in Table 4 and it shows that the importance of this factor reduces expected profit in Table 5.

Evidence from Tables 4 and 5 suggest that neither moral responsibility nor permit-free threshold day affect the intention to host or their expected profit level. If the number of permit-free threshold days decreased, that means hosts will now have to pay and get a permit if they exceeded the permit-free threshold days. This is a form of regulation that will be costly for the host but this is not seen as a deterrent for the intention to host or to affect expected profit. The reason for this is that, with the permit-free days, if this was raised (lowered) by regulation, would-be hosts could lower (raise) their price to earn the same profit, thus adjustments can be made accordingly or rentals can be timed by advertising during peak tourist periods and not be made available during other times in order to circumvent getting a permit.

Economic/opportunity cost is also insignificant in the intention to host as seen in Table 4 and neither does it affect the expected profit of a would-be host as seen in Table 5. This is useful for policymakers to know as more thought into designing effective tools of deterrence are needed if the goal is to discourage the supply of P2PA hosts. Instead of

broad rules and laws, it may be more effective for authorities to provide autonomy and power to local councils and strata bodies to consider location-specific context to impose deterrents that resonate with the residents and potential hosts. The move towards a workable balance between the number of P2PA hosts and keeping residents in the area happy is best undertaken with wide consultation within the local communities and the traditional accommodation sector in the area. At this point in time, there is also no evidence to show that among the three most visited Australian states by residents, there is any tendency of those living in these states to be more likely to host than other states or are seen to have higher profit expectations.

By and large, it was found that differences exist in the factors that affect the intention to host in cities and regional areas and these are different from the factors that affect expected profit level. For regulation in particular, this poses the following question – is the objective of regulation to deter first time entrants into the P2PA market as providers or is to control the number of days potential P2PA hosts will rent out their space? The results from this study show that economic/opportunity cost in terms of lodging taxes, liability payments, insurance fees, as well as regulation pertaining to permit-free days are ineffective in both forms of deterrents even though the intention to host and the expected profit level are not jointly determined.

The ineffectiveness of economic/opportunity cost and regulation of permit-free days is also not dependent on whether would-be hosts live in cities or regional areas. In part, this could be due to would-be hosts being aware that currently no policing measures are in place and the slow response of the Australian government towards regulation are indications of the lack of political will to devote resources to implement and police any serious regulation. For instance, Farnsworth (2018) reports that laws in Australia provide little regulation over P2PA and at the moment it is like the 'Wild West where it is 365 days of the year for short-term letting'. In fact, *Inside Airbnb* (the independent monitoring website of Airbnb) reported that there has been an 87% rise in listings across Australia in the last 12 months (Farnsworth, 2018).

Also, it was found that the pool of potential P2PA hosts is likely to consist of younger rather than older people although it is unlikely to be skewed towards any particular gender in cities and regional areas. Thus where demographics are concerned, online platforms need not have a region-specific advertising campaign to encourage listings but targeting the younger generation would be effective. These efforts could be geared towards the ease with which this particular generational cohort could use technology for the set up or how quickly and easy it is to earn a rental income, both of which may be less of a drawcard for the older people to want to list their room as shared accommodation.

5. Conclusion

The sharing economy is a prominent example of an innovative way of doing business that has been made possible by online technology. Given the rising number of P2PA hosts in the market, amidst the continued demand for this type of accommodation, this study empirically examines the extent to which barriers perceived by potential hosts is a hindrance, the relationship between intention to host and expected profit, and the regulatory impact of permit-free days to rent on the intention to host. In addition to showing that the intention to host and the expected profit level are not interdependent, the study also sheds light on three important fronts – effectiveness of regulation and its alternatives to control the supply of P2PA; what P2PA platforms need to be aware of in terms of attracting new hosts so as to increase their listings for profit; and the potential need for the government and P2PA platforms to consider different strategies for cities and regional areas to effectively influence the supply of P2PA.

Self-regulation is an approach that is being considered by the Australian government as seen in the recent move to provide strata communities (owners) of apartment buildings in Sydney the power to decide enforcement and policing of the matter (see Williams, 2018). Hence to some extent, the community that is directly affected is being provided a say in these matters. At the same time, there exists a community/organisation such as Peers (http://www.peers.org.au) which represents an extensive membership of collaborative economy platforms that are against regulation. However, the results from this study and the current situation on the lack of direction and uncertain governance structure on P2PA do not appear promising for the traditional accommodation sector in Australia looking for a level playing field. Also, Guttentag (2017) warns that P2PA in destinations such as urban areas, beach communities or small destinations operate in different environments and needs, and thus a one-size-fits-all regulatory approach framework may not be effective.

For the P2PA online platform, the results from this study point to three areas that they can work to entice more people to become hosts. Highlighting benefits on the philosophy underlying the sharing economy, providing suggestions and advice to reduce perceived inconveniences, and allaying concerns related to trusting the use of the online platform. Trust is the fundamental currency of the sharing economy and results show that would-be hosts in cities and regional areas have different trust issues. This implies that a different set of trust-building measures need to be supported by the online platform to reduce complexity and risk for those living in these areas. Thus the lesson for the traditional accommodation sector on the other hand is to highlight how safe, secure and trustworthy staying with them is, and how straightforward payment and cancellation procedures are. Now more so than before, hotel ratings and reviews on service are important due to this additional form of competition.

There may be some concern that the sample used is not random as it is from a research firm and that only people who had used Airbnb were surveyed on their intention to host, and not because they were actually considering becoming hosts. As with any survey on intention, one cannot be sure of their actions in real life as the answers were based on hypothetical evaluation.

It must also be acknowledged that this is an exploratory study attempting to examine barriers to potential hosts and thus there are limitations in the approach undertaken that however offers research ideas for future work.

First, one avenue for future research is to consider those who have not used P2PA and their willingness to become a host and compare if their expectations and degrees of concern are different from this sample. Second, it can be expected that the family size, marital status and the ethnicity of the respondents may influence the intention to host and a study considering these differences may shed a different light. Third, competition with respect to price and location of nearby traditional hotel accommodation and facilities and attributes of one's home are factors could be another angle of research which could improve the fit of the model. Cluster analysis can also be used to identify specific characteristics of people who have different degrees of concerns and hence make different decisions. Fourth, different regulation tools such as compulsory registration or approval of listing, council taxes for the conversion of rentals, or other direct and indirect approaches suggested by Williams and Horodonic (2017) can be analysed. Whether these impacts vary for current P2PA hosts as opposed to potential P2PA hosts can be considered to devise varied regulation for different target groups for effective results. Lastly, it will be useful to analyse the impact of such changes using longitudinal panel studies to examine the dynamics of change in P2PA supply which can be useful for policy makers intending to regulate the P2PA sector.

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Appendix A. Barriers and Motivations of Would-be Hosts

Respondents ranked the statements below based on a Likert scale of Strongly Disagree (1) to (5) Strongly Agree.

Barriers	
Economic/Opportunity Cost (EC)	
EC1	May not be worth the time and effort
EC2	Concerned about additional taxes I may have to pay
EC3	Concerned about being sued or liable if things go wrong
EC4	Concerned about the cost of additional insurance for breakage/damage
Trusting Guest (TG)	
TG1	Concerned about my personal safety
TG2	Concerned about lack of previous reviews on usage
TG3	Concerned about providing key to my place
TG4	Concerned about my address made available
Trusting Online Platform (TP)	
TP1	Concerned that the booking or payment may not go through
TP2	Concerned about online feedback and bad reputational reviews
TP3	Concerned about the legal uncertainty surrounding P2PA and regulations
TP4	Concerned about cancellations and refunds
Inconvenience (IC)	
IC1	Concerned that I need to be around a lot of the time to make this work
IC2	Concerned that I am now obliged to keep my house cleaner than I need to
IC3	Concerned about hassle of managing claims and dealing with issues of guest
IC4	Concerned that I am expected to be sociable as a host
Moral Responsibility (MR)	
MR1	Concerned about neighbours being unhappy with strangers coming and going
MR2	Concerned that what I offer may not meet my guests' expectations
MR3	Concerned that I am making money wrongfully
Motivations	
Earning extra money (single statement measured as a Likert scale)	
Social interaction (single statement measured as a Likert scale)	
Sharing Economy Philosophy (SP)	
SP1	Efficient way of making use of unused space
SP2	Environmentally friendly as sharing resources like energy
SP3	Usefulness of smartphone/internet innovation should be embraced

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