Consumer segmentation within the sharing economy: The case of Airbnb

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ABSTRACT

The sharing economy is a global phenomenon with rapid growth potential. While research has begun to explore segmentation between users and non-users, only limited research has looked at consumer segmentation within sharing economy services. In this paper, we build on this research gap by investigating consumer segmentation within a single sharing economy platform: Airbnb. Utilizing a mixed methods approach, with both a quantitative survey and a qualitative content analysis of Airbnb listings, we compare two different types of accommodation offered on Airbnb: shared room and entire home. Our findings indicate that within a single platform, the variety between offerings can create distinct consumer segments based on both demographics and behavioral criteria. We also find that Airbnb hosts use marketing logic to target their listings towards specific consumer segments. However, there is not, in all cases, strong alignment between consumer segmentation and host targeting, leading to potentially reduced matching efficiency.

1. Introduction

The emergence in recent years of numerous peer-based business models has empowered individuals across the globe to become micro-entrepreneurs, earning money from their idle property and spare time. This phenomenon, entitled 'the sharing economy', has seen unprecedented growth in terms of user numbers, enabling new avenues of economic and social interaction (Sundararajan, 2016). The benefits of sharing platforms are lauded, such as their ability to democratize economic activity, increase inter-personal interaction, and provide more sustainable and environmentally friendly options in the market (Botsman & Rogers, 2010; Hamari, Sjöklint, & Ukkonen, 2016; Hellwig, Morhart, Girardin, & Hauser, 2015). However, these platforms also have an inherent capacity for disruption. One key industry currently being disrupted is the hospitality industry, where Airbnb, the leading home-sharing service, has become a viable alternative to staying in a hotel, hostel, or bed and breakfast (Guttentag, 2015; Oskam & Boswijk, 2016).

Since its inception in 2008, Airbnb has expanded into over 34,000 cities across 191 countries. Uncommonly for a sharing economy company, Airbnb transitioned into profitability in 2016, demonstrating proof-of-concept for the validity of home-sharing within the global market (Stone & Zaleski, 2017). In the US, where Airbnb is headquartered and has its largest single market, a 2016 Pew survey showed that 11% of Americans had used online home-sharing services like Airbnb (Smith, 2016). However, there remains a distinct demographic divide between users and non-users of the service. Online home-sharing

users, including Airbnb users, tend to be wealthier, more highly educated, and older than the average American (Smith, 2016).

While often considered as a homogenous unit, Airbnb in fact offers three separate home-sharing options: shared room, private room, and entire home. Entire home, where the guests have the whole accommodation for themselves, is the overall most common option on Airbnb, followed by private room, and then finally shared room (Said, 2014). However, many users of shared room services express concerns, "Some 48% of those who have stayed in this type of shared lodging say they worry about staying with someone they have never met before […] In addition, these users are twice as likely to have had a bad experience using home-sharing compared with other users" (Smith, 2016, p. 9).

With investigations on the sharing economy still a recent but growing field of study, only limited research has examined whether or not there are demographic tendencies within the user base of services such as Airbnb. Further exploration on this topic could indicate whether there are systematic differences not only between users and non-users of sharing services, but also within the consumer base of individual sharing services. Accordingly, we propose the following research questions: *Do demographic and behavioral characteristics indicate whether Airbnb users prefer to book a shared room or an entire home? Do Airbnb hosts target their listings at a specific guest profile? Do guest preferences match with host targeting?*

To answer this question, we investigate the consumer characteristics of Airbnb users. By doing so, we can identify whether the consumer base can be divided into distinct segments. Focusing on the US, Airbnb's biggest market, we conduct a quantitative survey of 659 Airbnb users.

The analysis differentiates two accommodation types: shared room and entire home. These two types were selected because they represent the two ends of the Airbnb spectrum in terms of price point and level of 'sharing' involved. In order to see whether there was alignment between user demographics and host targeting, we followed up the survey with a qualitative content analysis of 500 listings on Airbnb.com.

The paper sheds light on emerging differentiations within home-sharing, one of the key domains of the sharing economy. It is one of the first to empirically segment the user base of the sharing economy along a range of key demographic and behavioral criteria. Thus, we contribute to the literature on consumer and buyer behavior, offering insights for research and practice.

In light of existing research, which has predominantly focused on the user base of the sharing economy as a homogenous entity, the academic relevance of this paper stems from enabling a better understanding of participants in the sharing economy as heterogeneous and diverse, rather than uniform. This is in line with recent research which has begun to show diversity in motivations for participating in the sharing economy (Bucher, Fieseler, & Lutz, 2016; Milanova & Maas, 2017) as well as in outcomes (Roos & Hahn, 2017). In practical terms, our research points to possible hurdles which might need to be overcome for providers in the sharing economy (e.g., Airbnb hosts) as well as for platforms to foster greater adoption of sharing services. Aligning with recent research, such as from Akbar, Mai, and Hoffmann (2016), we would argue for the usefulness of such findings.

2. Literature review

2.1. Segmentation in tourism and travel research

As an established field within tourism, marketing, and service research, consumer segmentation studies divide consumers into groups which are internally homogeneous but maximally different from other groups, assuming a heterogeneous overall market (Khoo-Lattimore & Prayag, 2015). Such studies often work with quantitative, survey-based data and can be of high practical relevance to marketers, enabling firms to target desirable market segments and then position their own product accordingly (Dolnicar, 2012).

Within tourism research, consumer segmentation studies focus on travelers' motivations, destination choice, or their choice of accommodation (Guttentag, Smith, Potwarka, & Havitz, 2018). In particular, the question of which attributes determine travelers' hotel choices has been widely researched, looking at factors such as "cleanliness, location, reputation, price, value, service quality (e.g., staff friendliness and helpfulness), room comfort, and security" (Guttentag et al., 2018, p. 2).

Next to hotels, consumer segmentation within alternative forms of travel accommodation has also gained importance in recent years as a research topic, where examples range from home swaps, bed-and-breakfasts, homestays, and hostels (e.g., Andriotis & Agiomirgianakis, 2014). For such accommodations, research has found that experiential attributes, such as authenticity and interpersonal relationships, rather than practical attributes seem to matter more to guests (Guttentag et al., 2018; McIntosh & Siggs, 2005; Stringer, 1981).

However, this divergence in segmentation findings, between hotels and alternative accommodation offerings, may create hurdles for services which operate on the broad spectrum of accommodation type. The blurred lines between hotel, hostel, home swap, and bed and breakfast, may result in a misalignment of expectations. Segmenting the user base of a home-sharing service, for instance, based on a varied focus on service quality and cleanliness, may thus be inappropriate for segmenting guests who are motivated by a desire for authenticity, with limited expectations of cleanliness or service quality. It is thus appropriate to conduct a more fine-grained analysis based on use-modality within a single service.

2.2. The sharing economy and Airbnb

Research on the sharing economy has so far focused on a few topics, such as business models and motives for sharing (Cheng, 2016). The concept of sharing, in particular, has received liberal attention across several academic disciplines (John, 2013a; Lamberton & Rose, 2012) and a range of definitions for the phenomenon has been offered (Belk, 2010, 2014; John, 2013a, 2013b; Lamberton & Rose, 2012; Ozanne & Ballantine, 2010).

This increase in academic attention towards sharing and the sharing economy goes hand-in-hand with the rise in sharing culture, namely a shift in consumer preferences where people are moving away from ownership and choosing instead to make their personal goods available to strangers online (Bardhi & Eckhardt, 2012; Belk, 2013; John, 2013b). These personal goods can range from tools, bikes, household items, cars, money, and even people's own homes (Botsman & Rogers, 2010; Gansky, 2010).

Engagement with the sharing economy can be motivated by a variety of factors. Research has shown that social and hedonic reasons, as well as economic incentives, can motivate a desire to share (for the consumer side, cf. Bardhi & Eckhardt, 2012; Botsman & Rogers, 2010; Möhlmann, 2015; for the provider side, cf. Bucher et al., 2016; Böcker & Meelen, 2016). Both providers and consumers may in fact seek social interaction through the sharing economy, with many participants on both sides of the market articulating a desire to meet people and make friends (Albinsson & Perera, 2012; Guttentag, 2015; Ozanne & Ballantine, 2010).

However, when discussing the sharing economy, it is impossible to avoid the dominant nature of platforms as the primary facilitators of online exchange (Benkler, 2004; Cohen & Kietzmann, 2014; Gansky, 2010; Grassmuck, 2012; Kathan, Matzler, & Veider, 2016). One example of such a sharing economy platform is Airbnb, which allows hosts to rent out their personal accommodation to strangers for a fee. It describes itself as a "*trusted community marketplace for people to list, discover, and book unique accommodations around the world—online or from a mobile phone or tablet.*".[1]

We chose to focus on Airbnb in this study of consumer segmentation due to its dominant position in the sharing economy, particularly in the home-sharing sector. Unlike most sharing economy platforms, Airbnb has achieved profitability. Moreover, it has managed to diversify its service portfolio. In addition to acting as a matching platform for home-sharing, Airbnb has recently introduced "Experiences" as an attempt to capture a larger share of the tourism market. While the sharing economy is diverse and includes both non-profit and for-profit platforms, Airbnb presents potentially the most far-reaching implications for tourism and most internal diversity to study consumer segmentation in depth.

As discussed, accommodations shared through Airbnb can be entire homes, private rooms, or shared rooms. Entire homes have the highest average nightly price whereas shared rooms have the lowest (Cansoy & Schor, 2016). However, only a small proportion of all listings consists of shared rooms, with entire home and private room being the primary type of listing (Said, 2014). As a platform which requires the sharing of personal space, Airbnb is dependent on willing sociality among users. Schor (2015) found that Airbnb, while being very successful in creating new social ties, is dependent on strong social motivations and interactions among hosts.

2.3. Participation and consumer segmentation in the sharing economy

Although the sharing economy has becoming a global phenomenon, only limited research to date has explored demographic differences among its user base as well as between users and non-users. As an

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[1] https://www.airbnb.com/about/about-us.

exception, the 2016 Pew survey has shown that there is a demographic divide in the US between users and non-users of the sharing economy, particularly with regard to income and education (Smith, 2016). While one fourth of American adults in the highest income ($75,000 +) and education (college graduate) brackets had used home-sharing services, only 4% in the lowest income (< $30,000) and education (high school graduate or less) brackets had done so.

In the European context, a large-scale survey on the collaborative economy in the 28 EU member countries came to similar findings (Flash Eurobarometer, 2016). The study found that education and age determined, to a substantial extent, whether inhabitants of these countries used sharing economy services. Individuals in the age groups 25–39 (27%) and 40–54 (22%) were most engaged, whereas 15–24 year olds (18%) and 55 + year olds (10%) were on the lower end of the spectrum. First evidence in academic discourse also points to Airbnb listings being more prevalent in highly educated census areas (Cansoy & Schor, 2016).

A study commissioned by PWC in the US further differentiates users in the sharing economy (PWC, 2015). However, according to this survey of 1000 people, age differences are less pronounced, with individuals in their 30s and 40s being most prone to use home-sharing services, while the age group of 65 + least likely to use home-sharing (PWC, 2015).

Research has shown that race has a significant influence on participation in home-sharing, with African-American users being systematically discriminated against on Airbnb, a finding which applies for both guests and hosts (Edelman & Luca, 2014; Edelman, Luca, & Svirsky, 2017). This aligns with the results of the 2016 Pew survey which found that white (13%) and Latino (9%) users were substantially more likely to use home-sharing services than African-American users (5%) (Smith, 2016).

Despite women being slightly more engaged in home sharing services than men, gender differences are not very pronounced. The results of the Pew survey showed that 13% of women in the US had used such services but only 10% of men had (Smith, 2016). As for area or residence, the results showed a location divide, with 14% of those living in urban areas, 11% of those living among suburban residents, but only 6% of rural dwellers using home-sharing services.

In-depth consumer segmentations for the sharing economy are rare. As notable exceptions, we found three studies that use cluster analysis to derive consumer typologies (Guttentag et al., 2018; Hellwig et al., 2015; Lawson, Gleim, Perren, & Hwang, 2016). Table 1 summarizes these articles, revealing partly overlapping findings and approaches. For example, in all three typologies there is at least one idealistic type who shares because they think it is the right thing to do (i.e., for moral or sustainability reasons) and one materialistic or pragmatic type who shares for extrinsic reasons.

Research has thus shown that demographic and socio-economic factors have an impact on sharing use. In sum, the findings summarized above indicate large differences in adoption of sharing economy services.

However, extant studies have focused primarily on differences between sharing economy users and non-users. For the most part, they have neglected to explore differences within the user base of the sharing economy in general and home-sharing in particular (the studies on discrimination are an exception, cf. Edelman et al., 2017). Given the potential to conduct fine-grained consumer segmentation within individual platforms, which could lead to more accurate targeting and positioning, we therefore pose the following research questions: *Do demographic and behavioral characteristics indicate whether Airbnb users prefer to book a shared room or an entire home? Do Airbnb hosts target their listings at a specific guest profile? Do guest preferences match with host targeting?*

3. Methods

To answer the research questions, we used a mixed-method approach. We began with a quantitative survey of Airbnb users and followed with a qualitative content analysis of Airbnb listings. This served to explore whether hosts are aware of consumer segmentation within Airbnb and are targeting their listings accordingly. By including empirical material about both the providers (hosts) and consumers (guests) in home-sharing, we hope to provide a holistic picture of consumer segmentation.

3.1. Quantitative survey

3.1.1. Questionnaire and sample

We conducted a quantitative survey among 699 Airbnb guests. The survey link was distributed via Amazon Mechanical Turk (AMT)[2] in December 2016 and the survey administration was handled through TurkPrime. In the title and in the introduction, we stated explicitly that only individuals with Airbnb experience were eligible to take part in the study.

In our case, the recruitment of participants through AMT was deemed appropriate because AMT users are known to "exhibit the classic heuristics and biases and pay attention to directions at least as much as subjects from traditional sources" (Paolacci, Chandler, & Ipeirotis, 2010, p. 417). In addition, AMT's user base is primarily young (average age about 30), well educated, liberal, and tech-savvy, with Black and Hispanics being underrepresented in the US (Paolacci & Chandler, 2014). These demographics are largely in line with the demographic composition of the home-sharing user base in the US (Smith, 2016). In this sense, we deemed Mechanical Turk a good environment to quickly get access to a relatively large number of Airbnb users (see Guttentag et al., 2018 for another study relying on AMT for recruiting Airbnb users and reflecting on the issues). Focusing on US-based AMT users also allowed alignment with the qualitative content analysis (see below). Despite this, the sampling approach might have led to further under-sampling and thus underrepresentation of already underrepresented groups, particularly in terms of race and income. The results are thus in no way representative of the general Airbnb user base in the US and readers should be careful not to generalize from them.

The questionnaire consisted of a series of open and closed questions. We included two open questions, both aimed at assessing the authenticity perception of Airbnb. Except for some demographic questions, the remainder of the survey consisted of closed questions where respondents could state their agreement to a statement on a five-point Likert scale, ranging from "1-strongly disagree", to "5-strongly agree", with "2-somewhat disagree", "3-neither agree nor disagree", and "4-somewhat agree" as the middle categories. The survey took slightly > 11 min to fill out on average and the mean number of seconds to complete it was 675 (median 550 s, with a standard deviation of 707 s). The respondents received a monetary reward of 1.5 US Dollars with an additional 0.5 US Dollar bonus for completion.

We included an attention check question in the middle of the survey, with the wording, "*The purpose of this question is to assess your attentiveness to question wording. For this question, please mark the 'Somewhat disagree' option.*" 40 participants (5.7%) failed the attention check and were excluded from the data analysis. This left us with a sample of 659 respondents. Of the 659 respondents, 46% were female

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[2] We are aware of the practical problems of AMT as a data source, for example, when it comes to sampling (Paolacci & Chandler, 2014). In addition, serious ethical concerns have been raised towards the platform. Problematic points include low pay, power imbalances between workers and requesters (Kingsley, Gray, & Suri, 2015), and worker invisibility, as a lack of representation and voice (Irani & Silberman, 2013). We attempted to make the survey short and compensated the respondents appropriately. Accordingly, the reviews posted on Turkopticon for this task were positive, with consistently 5/5 for pay, fair, and fast.

Table 1
Summary of studies on consumer segmentation in the sharing economy.

Study	Hellwig et al. (2015)	Lawson et al. (2016)	Guttentag et al. (2018)
Sharing type	Object-sharing, not specifically platform-mediated	General access-based consumption of various goods	Home-sharing: Airbnb
Study context and description	Combination of qualitative interviews and quantitative online survey; cluster analysis based on survey of 1121 Germans and Swiss Germans in 2012	Combination of two online survey studies in the US: one exploratory and qualitative with open-ended questions ($N = 72$) and one with closed questions ($N = 220$); cluster analysis based on second study, recruited through MTurk	Online survey in English-speaking countries (primarily CA and US) with individuals who had used Airbnb during the previous 12 months ($N = 844$); recruitment through Facebook groups, MTurk and other sampling frames (e.g., Reddit)
Clusters (%)	4 types: Idealists (30.5%), opponents (28%), pragmatists (11.5%), normatives (30%)	4 types: Fickle floaters (21%), premium keepers (32%), conscious materialists (24.5%), change seekers (21.5%)	5 types: Money savers (19%), home seekers (23%), collaborative consumers (19%), pragmatic novelty seekers (22%), interactive novelty seekers (17%)
Key segmentation findings	*Idealists* are predominantly female and share most. *Opponents* tend to be male and share least. *Pragmatists* tend to be male, reveal average levels of sharing and share because their social environment requires them to do. *Normatives* have average levels of sharing and comparatively low SES but high reciprocity and generosity.	*Fickle floaters* have lowest sharing attitudes and purchase-intentions, they are older, male, Caucasian, highly educated with relatively low income. *Premium keepers* have positive sharing attitudes and are product loyal, they are young, male and ethnically diverse. *Conscious materialists* have high attitude of sharing and average purchase intentions, they have the lowest income and are least educated, relatively old. *Change seekers* have the highest attitude of sharing and are least materialistic, they are relatively young and male, with the highest average education and income.	*Money savers* are mainly motivated by low cost, they are young and not traveling with children. *Home seekers* are mainly motivated by a homely experience, they are older, well-educated and less likely to be backpackers, more likely to rent entire home, most likely to staying with spouse/partner and children. *Collaborative consumers* are strongly motivated by moral, sustainability, and authenticity arguments, they are older, less affluent, international and more likely to be in shared accommodation as well as to be an Airbnb host. *Pragmatic novelty seekers* are strongly motivated by novelty and a homely experience, they are young, more likely to rent an entire home, with more accompanying guests. *Interactive novelty seekers* are mainly motivated by novelty and social interaction, they are accompanied by few guests and have the shortest average stay.

and 54% were male. The average age was 33 years and the median 31 years (standard deviation 9.6 years, with a range of 52 years from 19 to 71 years). In terms of education, 21% had some college education, 47% had a 4-year bachelor's degree, and 11% had a 2-year bachelor's degree. On the lower end of the spectrum, 9% had a high school diploma as their highest qualification and on the higher end, 1% had a doctorate. Thus, the sample includes a broad range of educational backgrounds. The median annual income in the dataset is 5, which corresponds to the category 40,000–49,999 US Dollars. The arithmetic mean is 5.54, indicating an average income of around 50,000 US Dollars. All the respondents were residents of the United States.

3.1.2. Measures

We measured the dependent variable with two individual questions, probing for the frequency of using shared rooms and an entire home. The question wording was: "*When staying in an Airbnb, how often do you stay in a shared room?*" and "*When staying in an Airbnb, how often do you stay in an entire home?*" Respondents could reply on a five point scale from "1-never" to "5-always". The middle categories were "2-sometimes"; "3-about half the time"; and "4-most of the time".

The demographic characteristics were assessed with closed questions: age was measured in years, income as current annual personal income in categories of 10,000 (e.g., "20,000–29,999") up to 100,000, when we had two remaining categories: "100,000–149,999" and "150,000 or more". Gender was measured with two categories ("male", "female") and education with the question "*What is the highest level of education you have completed?*" Respondents had seven categories, ranging from "Less than high school" to "Doctorate". We also included a question on the family situation, namely whether the respondents had children living in the household. Due to perceived sensitivity, we did not query for ethnicity or race.

We included several control variables for the travel modalities when staying at an Airbnb. More specifically, we assessed accompaniment when traveling with four modalities: "alone", "with a partner", "with a friend or friends", and "with family". The accompaniment when

traveling was assessed with four separate variables, querying for the frequency on the same scale as the dependent variables.

Finally, we included several indices on guest sensitivity and discomfort with different aspects of a stay. We term these aspects "interpersonal contamination" and understand them as a negative framing of closeness. Interpersonal contamination was measured on four dimensions derived from a qualitative analysis and with 18 self-developed (but partly adapted) items: environmental hygiene (6 items), contaminating objects (4 items), interpersonal contact (4 items), and privacy intrusion (4 items). We used principal component analysis with IBM SPSS (version 23) to synthesize the individual items into the four dimensions mentioned above, saving the dimensions/components with the "Regression" command. The Appendix displays the wording of the questions for this block of questions.

4. Method

We applied linear regression to answer the first research question and explain the influence of the independent variables on the frequency of using shared rooms and entire homes. The linear regression was carried out with the Stata statistical software package (version 14). We used the robust standard errors option to control for possible heteroscedasticity and non-normality of error terms. Moreover, we checked for multicollinearity by displaying the variance inflation factors (VIF) and Tolerance values in SPSS. The largest VIF for an individual variable was 1.77 for "traveling alone" and the other VIFs were between 1.14 (gender) on the lower end and 1.60 ("traveling with a partner") on the higher end. We could therefore exclude serious multicollinearity issues.

4.1. Qualitative content analysis

4.1.1. Data source

We conducted a qualitative content analysis of Airbnb listings to answer the second research question. This served to explore whether hosts were aware of market segmentation within Airbnb and were

targeting their listings accordingly.

We collected qualitative data in the form of Airbnb listings for both the 'shared room' and 'entire home' categories. These listings were written by the hosts and they act as an advertisement for the property. They can be considered as reflective of the expectations or preferences of Airbnb hosts. To get an overview of different locations in the US, we selected the five most popular cities in the US for Airbnb use, based on information provided on the Airbnb website. These cities were: New York, San Francisco, Los Angeles, Chicago, and Austin. Each is a major city and their geographic variation offers a range of locations across the US, including east coast, west coast, and the south.

For each city and in each category of 'shared room' and 'entire home', we searched for a three night stay with one guest. We made the search in mid-January for 1st March–4th March 2017, so as to not be limited by currently booked-out properties. From the results of each search, we selected 50 listings and imported them into NVivo. This resulted in 500 listings in total (100 per city – 50 shared rooms and 50 entire home listings per city). Because the results in each case were larger than 50 (306 listings were presented for each search), we sought randomization by taking 16 listings from the first page of the results (beginning), 18 listings from the tenth page of the results (middle), and 16 listings from the last page of the results (end). From each listing, the text was copied from the 'Title', 'About this Listing', and 'Description' sections.

5. Method

The content analysis was conducted by all authors. The listings were first analyzed for cues pertaining to demographic markers, travel modalities, and approaches to sociality (open coding). All listings were read thoroughly and independently multiple times by all authors, with each author identifying recurring themes in the data. The emerging themes were then differentiated into second order categories based on similar characteristics and associated with illustrative comments. Selective coding was facilitated by qualitative data analysis software NVivo. All quotes included for illustration are provided un-edited.

6. Results

We first present the results of the quantitative analysis and then go on to describe the qualitative findings.

6.1. Quantitative analysis

6.1.1. Shared rooms

Table 2 shows the results of the regression analysis for shared rooms.

Of the demographic characteristics, gender and income have a significant effect. Women and guests with a higher income are less likely to stay in shared rooms than men and guests with a lower income. Age, education, and the presence of children in the household do not influence the frequency of staying in a shared room significantly. Turning to the travel modalities, we find that guests who travel alone, with friends, or with family tend to stay in shared rooms more frequently. It could be, however, that those traveling with friends and with family share a room with each other, not with strangers. Those who travel with their partner tend not to stay in a shared room significantly more often. Finally, looking at the environmental sensitivity, we note that general discomfort with hygiene issues lowers guests' willingness to stay in shared accommodation. Even more strongly, when guests have desire to interact with other guests, they are much more prone to stay in shared rooms.

6.1.2. Entire home

Table 3 shows the results of the regression analysis for entire home.

As opposed to shared rooms, we find that gender does not have a

Table 2
Linear regression shared room.

Independent variable	Regression coefficient (standardized; standard errors in brackets)
Age	−0.06 (0.004)
Gender (ref.: female)	0.07* (0.072)
Income	−0.08* (0.014)
Education	−0.01 (0.029)
Children in household (ref.: yes)	−0.03 (0.088)
Company: alone	0.12* (0.038)
Company: with partner	0.04 (0.034)
Company: with friend(s)	0.09* (0.035)
Company: with family	0.15** (0.036)
Discomfort: environmental hygiene	−0.14** (0.042)
Discomfort: contaminating objects	0.00 (0.044)
Discomfort: interpersonal contact	−0.04 (0.042)
Discomfort: privacy intrusion	0.03 (0.037)
Desired contact with host	0.04 (0.002)
Desired contact with other guests	0.26*** (0.002)

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

Table 3
Linear regression entire home.

Independent variable	Regression coefficient (standardized; standard errors in brackets)
Age	−0.05 (0.006)
Gender (ref.: female)	−0.03 (0.099)
Income	0.12** (0.019)
Education	0.09* (0.041)
Children in household (ref.: yes)	0.11** (0.110)
Company: alone	−0.08 (0.048)
Company: with partner	0.13** (0.044)
Company: with friend(s)	0.05 (0.046)
Company: with family	0.09 (0.047)
Discomfort: environmental hygiene	−0.02 (0.050)
Discomfort: contaminating objects	−0.00 (0.050)
Discomfort: interpersonal contact	0.24*** (0.055)
Discomfort: privacy intrusion	−0.03 (0.054)
Desired contact with host	−0.05 (0.003)
Desired contact with other guests	−0.13** (0.002)

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

significant effect, but rather education is now significant and positive. The income effect is also significant and positive, showing that guests with a higher socio-economic status are more likely to book an entire home than their lower socio-economic status counterparts. Moreover, having children in the household exerts a significant and positive influence on staying in an entire home. Looking at the travel modalities, we see how the variable which was insignificant for shared room is now the only significant variable. Guests who use Airbnb with their partner stay in entire homes more frequently than those who use Airbnb less often with their partner. By contrast, the other three constellations – traveling alone, with friend(s), and with family – do not make a difference in terms of staying in an entire home. Finally, of the environmental sensitivity aspects, interpersonal contact is by far the strongest predictor of the dependent variable. Guests who are more disturbed and less comfortable with interpersonal contact (intensive and personal interaction during the stay) are significantly more likely to stay in an entire home than guests unaffected by such interaction. In contrast to before, a high desire for contact with other guests leads to reduced propensity to stay in an entire home. Guests who desire contact with other guests tend to opt for the more communal options of shared

rooms and rooms in shared apartment. However, for those who desire little contact, the entire home seems to be the best option.

6.2. Qualitative content analysis

6.2.1. Shared rooms

We found a number of recurring themes that emerged from the 'shared rooms' listings. In terms of demographic characteristics, a lower income guest was often presented as the target market. This was indicated by explicit host descriptions of the service as a lower priced option, being '*affordable*', or '*economical*'.

'*Lovely room in an artistic home perfect for the frugal traveler*' [Chicago].

We love getting to know our guests but can also give you privacy and quiet if you're just looking for a quick, economical place to crash [Austin].

Also supporting the notion of the 'shared room' as being a cheaper alternative for a lower income guest, Airbnb hosts frequently described the service as a '*hostel*' or a '*dorm*'. This language is suggestive of a lower-priced experience and thus targeting a lower-income, or at least more frugal, guest.

This is a simple, hostel style bunk bed, room [New York].

This hostel-like situation provides guests with the option of sleeping in a clean place with a comfortable mattress [Chicago].

We believe hostels are far more than just a cheap place to stay, and we are seeking out guests who feel the same [San Francisco].

We found that shared rooms were targeted at a certain social milieu, namely the digital professional categories of '*hackers*', '*techies*', and '*digital freelancers*'.

Our guests are young and smart startup founders, developers, techies, geeks [Los Angeles].

Co-living house for entrepreneurs, developers, digital nomads and students [San Francisco].

Age was a recurring theme in the 'shared rooms' listings. By advertising the listing as suited for '*younger*' or '*young*' guests, Airbnb hosts are signaling a clear preference for younger guests, potentially alienating potentially older customers. Without clarity in most cases on exactly what constitutes as 'young', it is possible that age-signified listings can also cause confusion for potential guests.

My place is great for young travelers [Austin].

Connect with other creatives, interns, young professionals in a luxury household with an amazing roof deck and panoramic views of Manhattan - you won't be disappointed! [New York].

I prefer not to host guests over 40 years old. This isn't meant to be discriminatory but i just haven't had good experiences with older folks as everyone i expect want the hilton treatment. I prefer to host younger folks who are laid back and are here to work or just explore life [New York].

While education in the quantitative data was not shown to have a significant effect on the user base in the case of shared rooms, Airbnb hosts of shared rooms showed selectivity based on education level, with a preference for higher-educated guests.

I'm very respectful and so will I be quite selective upon well-educated and loving people [Los Angeles].

From the analysis of the listings, we noted a tendency to separate listings by gender, as either '*women only*' or '*men only*'. A '*co-ed*' situation does not appear to be offered regularly.

The room is female only, with a walk in wardrobe and large en-suite

[New York].

My place is good for solo man (not woman) adventurers [New York].

Regarding travel modality, in accordance with the quantitative results, we noted a scarcity of references to couples. However, in contrast to the quantitative data, shared rooms did not appear to be a family friendly option, with a large proportion of listings explicitly excluding children as guests.

The apartment share it's best for adult guests (no Children under the age of 12 allowed) [Los Angeles].

Unfortunately, we are not able to accommodate families or children [Austin].

Turning towards 'sociality', the content analysis of 'shared rooms' listings supports the quantitative findings that when guests have a desire to interact with other guests, they are more likely to stay in shared rooms. We noted that sociality and guest interaction was frequently mentioned as an integral part of the Airbnb experience and presented as unavoidable.

Interaction is crucial. This is more than just a roof over your head. We are a diverse community of cool people doing cool things. [Austin].

You will interact with other guests and tenants several times throughout the day. We are a family here and treat each other as such. We share meals together, cook for each other, are kind to each other and treat our guests as family also. [San Francisco].

I caution that side effects may include, spontaneous conversation eruption, shedding the fear of strangers and involuntary trusting of others may occur! [Austin].

In addition to the necessity of social interaction in a 'shared room' experience, hosts often utilized the language of '*friendship*' and '*community*'.

Our space is all about creating community with fascinating travelers from around the world. Looking for instant friendships and awesome vibes? You found us, high five! [San Francisco].

It's a very open, communal set up, with new international friends all around you. Like summer camp, but even better…because you're an adult now;-) [San Francisco].

6.2.2. Entire home

In the content analysis of 'entire home' listings, we also found a number of recurring themes. In contrast to the 'shared rooms', the 'entire home' listings indicated that a higher income guest was being targeted. Hosts made use of the language of '*luxury*', '*5-star*', and '*expensiveness*'.

You will never forget your stay in this luxuriously appointed, utterly charming and vintage "jewel box" of a house [Austin].

Enjoy the river and city views and the 5-star luxury amenities and finishes [Chicago].
It's a beautiful new house with great quality furniture, expensive rug and 65 inch TV [New York].

Whereas shared rooms are presented as a '*hostel*' experience, entire homes are described with the language of a '*hotel*' or '*hotel-like*' experience. This language is suggestive of a higher-priced experience and thus attracting a higher-income, or at least less frugal, guest.

This home gives you a stay of a 5 star hotel or more in sense of amenities and large space without hassle of dealing with hotel staff and seeing other hotel guests in your sight. [San Francisco].

This space is specifically for Airbnb use (so no personal clutter) – like a beautiful hotel suite with an at-home feel… [Chicago].

Age was not found to be a strongly recurring theme in the 'entire home' listings. Age was only indicated in a small number of listings, in which cases an older guest was suggested.

Perfect for visiting prof and parents of students [Austin].

Regarding profession, Airbnb hosts targeted business travelers, which is itself potentially itself indicative of an older, wealthier traveler.

It's perfect for a business traveler who wants to easily commute throughout SF via the nearby BART station, and also enjoy the bars, restaurants and neighborhood culture of the Mission at night. [San Francisco].

Nice stay for Business trip. Apartment lies in the heart of new York city [New York].

Regarding travel modality, in accordance with the quantitative results, we noted frequent targeting of couples who were looking for a 'romantic' experience.

The cottage is perfect for the romantic couple seeking a weekend retreat. [Austin].

In terms of 'sociality', the content analysis of 'entire home' listings indicated that privacy is considered to be a very important factor. Hosts offered the possibility of interaction only when required, and even this tended to be for utilitarian purposes such as key handover or repair work.

We're available if you have any questions during your stay, want recommendations or directions, or need anything else, but we don't expect you to want to hang out with us—you should feel like you have your own little house in one of Austin's most exciting, funky neighborhoods. [Austin].

Your moment in Brooklyn is yours. We believe privacy is paramount. You will be the only one in the apartment during the time of your rental. [New York].

What was particularly notable in the listings was the emphasis on secondary services, namely companies who manage Airbnb listings on the host's behalf. This was presented as a benefit, so that the listings are 'professionally' cleaned or so that services are available on a constant basis. By utilizing these services, hosts are removing any element of sociality and increasing the hotel-like nature of their listings. Based on the quantitative data, these factors might in fact make the listings more desirable to guests.

I travel often so I use and trust an off-site management team to help guests get the information and service they need to make their stay enjoyable! They will be your contact for all communication leading up to and during your stay. [Chicago].

Given busy work/travel schedules of our own, we use the services of AllSet Turnover to help us professionally manage the condo. [Chicago].

7. Discussion and conclusion

In this paper, we investigated consumer segmentation within one sector of the sharing economy: home sharing. Using the example of Airbnb, we compared the consumer characteristics of guests who stay frequently in shared rooms with the consumer characteristics of guests who prefer to stay in an entire home. Combining quantitative survey data with a qualitative content analysis of Airbnb listings from five major US cities, we found substantial differences between the consumer markets for the two accommodation types. Table 4 summarizes the key findings.

In our quantitative data, for both types of listings, we did not find a significant age effect. This is in line with the Pew study, according to

Table 4
Summary of findings.

Accommodation type	Consumer profiles	Provider targeting
Shared rooms	More likely to be male	No gender preference but gender separation
	Low income	Low income
	No education effect	High education/digital business professionals
	No age effect	Younger guests but not teenagers or children
	Single travelers and large groups	No children and families
	Low concern with cleanliness	No expectation about cleanliness
	Open to social interaction	Open to social interaction
Entire home	No gender effect	No gender preference
	High income	High income
	High education	High education/business travelers
	No age effect	Older guests
	Travel with partner/spouse	Couples
	Cleanliness not an issue	Professional level of cleanliness offered
	Uncomfortable with social interaction	Minimal social interaction

which the median age of home-sharing users is 42 (Smith, 2016). However, for gender and socio-economic status, differences between the two accommodation types emerged. Women use shared rooms significantly less often than men, but there are no significant gender differences for entire home users. Income has a positive and significant effect on staying in an entire home but a negative and significant effect on staying in a shared room. Education exerts a positive and significant influence on entire home but has no significant effect on shared room. The findings for income and education indicate socio-economic status differences among consumers. We could not study the underlying causes and mechanisms with the survey data, that is, whether these differences are caused by price sensitivity, different lifestyle choices, and motivations. However, given the substantial cost difference between shared rooms and entire home (Cansoy & Schor, 2016), we would conclude that affordability considerations and budget constraints are certainly important reasons which might explain the socio-economic status effects. This has important implications for targeting and matching.

Next to demographic characteristics, we also looked at travel modalities. It turned out that individuals who travel alone and in larger groups – either with friends or with family – stay in shared rooms more frequently, while those who travel with a partner prefer an entire home. Again, we do not have evidence from the survey for the underlying mechanisms but we would speculate that individuals traveling alone are often in search for company. While those who travel with friends and family go for a budget option, where they can share the room among themselves.

Finally, the results for environmental factors and guests' discomfort with them revealed differences between the two accommodation types. Most strikingly, guests who are uncomfortable with environmental issues, such as dust and hair, tend to avoid shared rooms. On the other side, guests who are uncomfortable with interpersonal contact tend to prefer staying in an entire home, where they do not have contact with hosts or other guests.

From our qualitative content analysis of 'shared room' listings, we found that hosts were signaling a preference or expectation for guests who were of a lower income. Hosts also made use of language associated with hostels, self-identifying the service as a low-cost option targeted at a certain type of frugal and less discerning guest. Given the lower-cost nature of a 'shared room', this targeting shows awareness of the motivations of use. Hosts also indicated in some cases a preference for guests who were highly educated and part of a social milieu of 'digital workers'.

Although the quantitative data analysis indicated no significant age distinction, hosts of 'shared room' services frequently revealed a preference for younger guests, though not so young as to include teenagers and children. Hosts made clear that their listings were not family friendly and explicitly prohibited children. Given the expansion of home-sharing services like Airbnb, the exclusion of family groups from the most cost-effective options could be an important but under-discussed issue.

In the listings, we found that shared rooms were often marked as gender separated, with listings categorized as 'male only' or 'female only', despite the fact that this form of gender discrimination is prohibited by Airbnb. A recurring theme among 'shared room' hosts was interaction, which was presented as an essential part of the Airbnb experience and could not be avoided. This is in line with the tendency, as noted in the quantitative data, for only those more open to social interaction to use shared room services.

From our content analysis of 'entire home' listings, we found that, in contrast to 'shared rooms' and in line with this service being a higher-cost option, Airbnb hosts marketed their home as a luxury experience, targeting wealthier guests who wanted a more 'hotel-like' experience. This element of Airbnb being a 'hotel-like' experience brings in to question how important the 'sharing' element of the sharing economy actually is to guests. We noted there was a slight age preference for older guests and a preference for guests who were professionals. Airbnb itself is aggressively pushing the business traveler segment, with rapid growth figures showing the success of more streamlined experiences beyond authentic sharing among friends (Saiidi, 2016). This implies a diversification of sharing offers, which is likely to continue in the coming year and should be increasingly studied by business research. In line with the quantitative data, we noted that entire home listings were being aimed at couples. In terms of the social interaction element of Airbnb use, a recurring theme among 'entire home' hosts was that interaction was kept to a minimum and usually only in cases of practical need. The use of secondary services, such as professional management services, was also striking. This is a topic for future research to follow up on.

On the topic of discrimination, it is notable and perhaps bolstering that no listing in our data set suggested a racial preference or excluded based on gender identity or sexual orientation. However, given that discrimination against guests can and does occur during the booking process (Edelman et al., 2017; Edelman & Luca, 2014), there would be little need for hosts to discriminate explicitly and risk being reported to Airbnb.

The study has several *implications* for theory and practice. Firstly, it shows how a market segmentation lens can be fruitful to analyze the sharing economy in cases where single platforms over a broad spectrum of sharing options. Secondly, our findings provide a strong indication of the misalignment between provider expectations and consumer intentions, suggesting that further data-driven insights could increase the matching quality of the platform. Thirdly, the study has implications for the debate over discriminatory selection, as provider freedom of choice and segmentation desires may transition into overt discrimination against consumers of certain ages, genders, and other criteria such as race and sexual orientation. The question is thus raised of when consumer segmentation in the peer-to-peer economy, where providers target certain consumer groups, becomes discrimination which requires intervention on behalf of the platform and/or local authorities.

The media rhetoric about the sharing economy stresses both the empowering potential and the exploitative nature of major commercial sharing services such as Airbnb and Uber. On the critical side, issues of worker protection, pay, algorithmic management (e.g., the debate about Uber surge pricing), urban effects (e.g., Airbnb crowding out long-standing inhabitants in major cities), discrimination and disruption receive ample attention (Newlands, Lutz, & Fieseler, 2017). In the academic discourse, business models, sustainability, and definitions are topics with much coverage (Cheng, 2016). However, few theoretical and empirical studies differentiate the user base of single services and service categories to investigate the sharing economy, with implications for consumer targeting. We deem such an approach worthwhile because it might create awareness and point to blind spots, resulting in proactive interventions and improvements to make the sharing economy more equitable and enjoyable. Airbnb and similar home-sharing services, for example, could do more to create clear guidance what each accommodation type offers and how hosts can foster positive experiences and customer satisfaction through framing their listings in a more targeted fashion.

Despite being one of the first to investigate customer segmentation in the sharing economy, our study comes with a number of *limitations*. First, the research context is limited to the US, a country with specific social conditions and a unique historic development, for example in terms of race. In that regard, not including race as a demographic variable in the quantitative survey is a gap which future research might want to fill. Furthermore, the sampling strategy for the quantitative survey (see sub-section "Questionnaire and sample") underrepresented certain population groups, limiting the generalizability of the findings. Future research should go beyond the US, compare different Airbnb markets, and use more sophisticated sampling strategies, at best representative of the whole Airbnb user base. Second, our data is cross-sectional. We can thus not make strong causality claims and cannot trace the development of consumer segmentation over time. Future studies should include longitudinal research designs, for example with panel surveys.

Despite the limitations, our study shows how the 'sharing economy' is diverse and caters to individuals from different backgrounds. Different niches cater to distinct consumer groups and preferences. However, with the contrast of shared rooms and entire homes, we still investigated relatively broad categories. Future research might want to look at more fine-grained service categories.

Acknowledgment

Appendix A

Environmental hygiene (own scale)	When staying at an Airbnb, how comfortable or uncomfortable would you feel by the following ambient conditions? (1–extremely comfortable, 2–somewhat comfortable, 3–neither comfortable nor uncomfortable, 4–somewhat uncomfortable, 5–extremely uncomfortable) *Mould* *Insects or traces of insects* *Sticky surfaces* *Human hair* *Unpleasant or unfamiliar biological odor (from human or animal)* *Unpleasant or unfamiliar non-biological odor (cigarette, bleach etc.*
Personal objects (own scale)	When staying at an Airbnb, how comfortable or uncomfortable would you feel by the following signs, symbols, and artifacts? (1–extremely comfortable, 2–somewhat comfortable, 3–neither comfortable nor uncomfortable, 4–somewhat uncomfortable, 5–extremely uncomfortable) *Intimate items of the host or other guests present (prescription medicines, contraceptives etc.)* *Personal hygiene products of the host or other guests present (razors, soap, sanitary products etc.)* *Objectionable artifacts (explicit art, disturbing motifs, controversial books etc.)* *Exceedingly valuable artifacts of the host or other guests present (jewelry, cash, electronics etc.)*
Interpersonal contact (own scale)	When staying at an Airbnb, how severe would you perceive the following instances of social intrusion to be? (1–not at all, 2–a little bit, 3–a moderate amount, 4–a lot, 5–a great deal) *Feeling obligated to engage in small-talk with the host or other guests.* *Feeling obligated to share information about yourself with the host or other guests.* *Being provided with unprompted information about the host or other guests.* *Having to share a kitchen with the host or other guests.*
Privacy (adapted from Stutzman, Capra, & Thompson, 2011)	Please indicate your level of concern about the following potential privacy risks that arise when you stay in an Airbnb. (1–no concern at all, 2–little concern, 3–moderate concern, 4–high concern, 5–very high concern) *The host or other guests damaging my personal belongings (clothes, electronics etc.)* *The host or other guests snooping through my personal belongings (luggage, laptop etc.)* *The host or other guests entering my personal space (bedroom, private bathroom etc.)* *The host or other guests using items they should not (bedclothes, pillows, personal hygiene products etc.)*

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