

Host Scaling and Revenue Management: Is There a Link?

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Abstract: This study explores how a revenue management capability can be created by Airbnb hosts and the role played by their degree of professionalization, defined as the number of listings (apartments) the hosts manage.

Considering the explorative nature of this research, a qualitative approach based on interviews has been adopted. The sample includes 55 interviews realized in the Milan destination (Italy). A protocol was created using the four theoretical blocks. These latter identify the main processes of revenue management: i) identifying the required information to establish the revenue management strategy, ii) making strategic and then tactical pricing and revenue management decisions, iii) managing communication with the guests, and iv) making available software dedicated to revenue management. Milan was selected for two reasons: first, is the second leading Italian destination after Rome in terms of overnights. Second, Milan attracts different targets, such as business, leisure, and trade fairs. Therefore, there are continuous changes in off- and on-pick revenue constituting an ideal setting for exploring the creation of a revenue management capability.

Three groups of hosts were identified: i) single hosts, ii) hosts managing three to five listings, iii) hosts managing more than 10 listings. Results show strong differences between single hosts and those managing 10 or more listings, explaining why professional hosts are able to extract more value from their listings compared to single hosts.

Two theoretical contributions are proposed. First, the research adds to the knowledge about how a revenue management capability (RMC) is created in the context of short-term rentals (STR). The crucial role of professionalization is confirmed, and a complex set of relationships emerge between tangible (such as the presence/absence of a RM software and dedicated staff) and cultural (such as the orientation towards price discrimination and to revenue or price maximization, as well as the approach to guest selection) barriers to RMC.

Second, findings can explain why quantitative studies have sometimes shown controversial results on factors affecting price and revenue performance. Interviews with multiple hosts highlighted how they often manage third-party listings based on agreements that include a limit price, reducing the rooms for dynamic and discrimination price, and more generally revenue maximization.

Keywords: Revenue Management Capability; Airbnb; Professionalization Degree; Individual Hosts; Professional Hosts

1. Introduction

The large diffusion of the sharing economy and in particular the phenomenon of short-term rentals (STR) has attracted the interest of many supply papers, mainly focused on price/revenue determinants (Sainaghi, 2020). This literature is growing and based on quantitative data has identified many price antecedents and more general pricing strategies. Size, listing amenities, host variables, accessibility, guest reviews and contractual terms are the main groups of variables used (Sainaghi, 2020; Sainaghi & Chica-Olmo, 2022).

Previous studies agree that host professionalization has an impact on revenue management and pricing strategy. Professional hosts are more oriented on revenue rather than on price maximization (Oskam, van der Rest, & Telkamp, 2018). At the same time, some previous articles agree that this quantitative approach is unable to explore why professional hosts are more efficient and in particular how they are able to create a revenue management capability (Cocola-Gant, et al., 2021). This is the goal of this study, based on Milan hosts' interviews depicts the links between professionalisation degree and revenue management capability creation. The theoretical lenses used by this study is the resource-based view and in particular the capability approach. Resources are the assets that the firm possesses or controls, whereas capabilities refer to the firm's skills in exploiting and combining these resources through organisational routines (Amit & Schoemaker, 1993). Previous studies on hosts suggest the presence of some relevant capabilities, such as the preparation of the listing, commercialisation, interaction with guests, financial capability (Cocola-Gant, et al., 2021). This study focuses on the commercialisation capability, defined in this paper as revenue management capability.

2. Professionalisation Degree and Host Performance

Some quantitative studies exploring the price determinants revealed that professional hosts achieved higher (Chica-Olmo, González-Morales, & Zafra-Gómez, 2020), lower (Tong & Gunter, 2020) or even marginal positive or negative effects on STR rates. Therefore, professionalisation degree appears generating controversial effect on STR price (Sainaghi, 2020). However, these ambiguities are mainly related to the focus on price rather than on revenue. In fact, other quantitative supply studies agree that professional hosts achieve higher revenue than unprofessional hosts (Sainaghi, Abrate, & Mauri, 2021). The professionalisation degree is usually operationalised considering the number of listings managed (Abrate, Sainaghi, & Mauri, 2022) eventually integrated with other variables, as experience, type of listings and year-round availability (Bosma, 2021). While in many studies there is a juxtaposition between professional and individual hosts, recent articles introduced the idea of professionalisation degree (Bosma, 2021). In big cities, there are dozens of thousands of hosts. The twofold segmentation (professional and non-professional) appears too simplistic. The reality of the STR hosts is more complex and the boundary between different types of providers is more nuanced. The professionalisation degree favored the recent development of some new types of hosts. For example, the corporate hosts were threefold segmented (Cocola-Gant, et al., 2021), while in the case of marginal hosts some analytic distinctions have been proposed (Semi & Tonetta, 2021) or the hosts' segmentation based on the number of listings managed has been enlarged, distinguishing between single, two listings, three listings, four to ten listings or more than ten listings managed (Sainaghi & Baggio, 2021).

Considering the explorative nature of this study, the professionalisation degree in the current paper has been operationalised considering the number of listings managed. Furthermore, the focus was only on host managing an entire apartment or house, excluding shared room providers. This choice is related to the goal of this paper, that is exploring revenue management capability.

3. Revenue Management Capability

This section identifies which resources can generate revenue management capability. The resource-based view defines resources as stock of factors that are owned or controlled by a company, while capabilities focus on firm ability to use these resources, usually in combination (Amit & Schoemaker, 1993). Resources can be tangible and intangible, human and financial. Following a resource-based view of the firm, the pricing process is considered a capability that combines routines, skills and coordination mechanisms (Dutta, Zbaracki, & Bergen, 2003).

Based on previous studies on revenue management in the field of hospitality, a wide list of routines, skills, know-how and coordination mechanisms are considered to explain how the revenue management capability can be created by a host. In particular, the revenue management process can be segmented into four major components: i) identifying the required information to set the revenue management strategy, ii) taking strategic and then tactical pricing and revenue management decisions, iii) managing the communication and interaction with the guests, and iv) the availability of a software dedicated to revenue management.

The first activity focuses on the information necessary to set up the revenue management capability and includes, among others the following resources, skills and coordination mechanisms: i) data availability, ii) data analysis know-how, iii) benchmarking know-how, iv) demand forecasting know-how. The availability of data can support the revenue management process, especially if they are well-organised and simple to access. However, data sometimes is available, but the host has not the skills to use them. For this reason, the data analysis know-how is very relevant for the entire revenue management process. Rates should generate a transaction between the landlord and the guest; however, STR providers operate under concurrence. Benchmarking know-how is considered an important skill to understand who are the most relevant competitors, to scan their rates and to consider them in the revenue management process. Rates focus on the future transactions, therefore when a host decides the prices should have an idea about the future market condition. This requires demand forecasting know-how, able to consider if the demand is rising or not, if the destination offers some special events, and so on.

The second component can be defined as pricing formulation and is the heart of revenue management capability. It includes mainly the following sub-topics: i) dynamic pricing know-how, ii) revenue rather price maximisation focus, iii) multi-channel ability, iv) presence of a revenue manager. Dynamic pricing know-how is able to improve the listing revenue, but this pricing strategy generates additional work. In fact, to change continuously price requires knowing the destination seasonal periods, the rates proposed by competitors, the saturation degree of host capacity. Not surprisingly, many hosts prefer to achieve less revenue but avoiding this

additional work. Some papers analysing price determinants revealed that professional hosts apply lower rates rather than single-unit hosts, or, more generally, the relationship between commercial host and price is controversial (Sainaghi, 2020). However, other studies have shown an interesting relationship, professional hosts achieve higher revenue, rather than mom-and-pop providers. Said differently, what really changes comparing professional and single-listings providers is a different focus. While single providers search price maximisation, professional hosts are more interested in revenue maximisation. To improve the listing revenues, the hosts can use (simultaneously or not) more than one channel. In the study of corporate hosts, three main platforms are used: Airbnb, Booking.com and VRBO (Cocola-Gant et al., 2021). Multi-channel ability is therefore needed, including the ability to set up the rates for the different platforms, to avoid rate disparity or overbooking. Finally, the presence of a revenue manager or a host with a background in this field represents a crucial point, able to change and improve the entire revenue management activity. The revenue manager can be an external consultant that supports the host (Cocola-Gant, et al., 2021).

The third component focuses on managing, communicating and interacting with the guests. The skills, resources and routines are many. In this study we focus on. i) ability to interact with potential clients and ii) reputation. The ability to interact with potential clients plays a pivotal role. As confirmed by some quantitative studies, response rate and time positively affects the listing results, as well as the number of photos published (and their quality). Moving to reputation, some items refer to the number of reviews collected by the listing, the overall rating, the presence of superhost badge, the host experience.

Finally, a coordination mechanism is introduced and is the presence of revenue management software. The availability of revenue software plays a crucial role. In fact, all the items previously identified are influenced by the software.

4. Methodology

Considering the explorative nature of this research, a qualitative approach based on interviewees was adopted, in line with some recent papers focused on STR hosts (Cocola-Gant, et al., 2021). These studies usually realize 30-40 interviewees mainly on Airbnb hosts, using semi-structured questionnaires (Bosma, 2021). When saturation is achieved, the authors report the main findings using quotations and typically describing categories (as different types of hosts). The same approach was used in the current study.

The sample was extracted by the AirDNA database from Milan. Milan is the second leading Italian destination after Rome and attracts different targets, as business, leisure and trade fair. Focusing on this last segment, Fiera Milano organises dozens of events (Sainaghi & Mauri, 2018). Therefore, in the Milan city there are continuous change in off- and on-pick (Sainaghi, et al., 2018a), constituting an ideal setting for exploring the creation of a revenue management capability (Sainaghi, et al., 2018b).

As typical for qualitative research, a polar approach was adopted in this study, in order to understand how the professionalisation degree can help the emergence of a revenue management capability. In line with previous studies, three different groups of hosts were identified: i) single hosts (also called group one), ii) hosts managing 3-5 listings (group two), iii) hosts managing more than 10 listings (group 3). The host segmentation based on listings managed was used in some previous studies (Deboosere, et al., 2019). Only hosts managing the entire apartment/house were considered. The final sample includes 27 interviews: interviews numbered 1-11 for single hosts, interviews numbered 12-20 for 3-5 listings and interviews numbered 21-27 for hosts managing more than 10 listings. All the interviews were recorded, transcribed and coded using NVIVO software.

5. Findings

5.1 Information and Data Analysis Skills

The code data availability illustrates some relevant differences moving from single to multiple hosts. Single hosts usually do not have a dedicated register with all the past data; they use the repository offered by Airbnb but mainly for fiscal and administrative purposes. "The archive is used only for personal information and documentation for any checks, including for tax purposes. I don't consider the historical archive important for formulating prices" (interview #5). The opposite is for big hosts (group 3). "The reservation archive is entered in the PMS (Property Management Systems). The data is analysed directly by the system. The historical data are our starting point for defining the future rates" (interview #22). The second group oscillates between hosts that do not consider very relevant historical data and others that invest more time and attention. The threshold is

again the presence or not of a software. “It has a historical archive of reservations, which can be consulted in the company management system. The software proposes the prices charged in the past and the occupancy rate” (interview #18).

Data analysis know-how is the second code. Many hosts of the first group invest limited time for analysing data. “Historical data is not used to formulate prices” (interview #9) or “I have a historical archive of bookings, but it doesn’t seem very important to me and then it’s complicated to extract the information” (interview #11). Again, the approach of the third group appears the opposite. Thanks to the software, the data process analysis is simple, fast, and is done periodically. “We collect a lot of data: past sales data, competitors’ prices, offers near our apartments, events, weather (it’s not the same thing as a sunny weekend or a rainy one). Thanks to the software we can combine all this data on one platform and examine it easily. We regularly set aside time for this activity” (interview #22).

Benchmarking know-how is perceived an important activity during the start-up by the single host. “I spent a lot of time benchmarking activity at the start-up of my business. Currently I dedicate about an hour a month” (interview #3). Some hosts affirm the relevance of benchmarking however they have not time enough to do this activity. “I’m aware about the importance of benchmarking. It would be useful to do so but I have not the necessary time to dedicate to it” (interview #9). For the second group, benchmarking is an ordinary activity perceived relevant. “I look on Airbnb and Booking what are the prices in the area and the services that are offered. This activity is useful for defining prices and it requires at least ten hours a month” (interview #19). Big hosts (group three) declare the strategic relevance of benchmarking. “I constantly look at the websites of competitors, I observe their prices, I consider the quality of their listings, the area. This continuous observation helps me a lot in changing the price frequently. I certainly dedicate a lot of time to this activity which is one of the most important” (interview #21). “I dedicate at least an hour a day to this activity. It is essential for my work” (interview #24).

Concerning demand forecasting know-how, the city of Milan is registering a strong turnaround after the Covid. The demand is growing, and the consumer behavior patterns are changing. For this reason, some hosts (small and big) consider unpredictable the demand. “After the pandemic there is an incredible demand” (interview #13). “The prices we are practicing from May 2022 onwards are very high compared to the past. There is a boom in requests” (interview #24). “After the pandemic, the seasonality of Milan has changed: there is almost always a very high demand” (interview #27). With this premise, small hosts are not able to predict the tourism demand. “I wouldn’t know how to predict the number of customers or even what data I could use” (interview #4). The second group forecasts demand considering the Milanese seasonality. “Thanks to the calendar of events in Milan, I am able to roughly predict the number of customers” (interview #17). The professional hosts (group three) use mainly the software and the number of requests/reservations. “To predict potential demand I use price lab, a module of our revenue management software” (interview #22). “The intensity of the requests we receive, together with the reservations made well in advance, help us to estimate the expected demand” (interview #27). The availability of historical data are also very important for demand forecasting. “We predict demand based on our experience and the historical data (the company is 12 years old)” (interview #25).

5.2 Pricing and Revenue Management Decisions

This second group of activities and routines plaid a crucial for understanding the role of professionalisation. Dynamic pricing know-how is probably a key threshold between small and big Airbnb providers. Single hosts tend to use one static price or to articulate the rates in a few classes of price. “For my apartment, I consider a price of €80 to be optimal” (interview #1). “I set the price 10 years ago and have broadly held it constant” (interview #3). “Prices from the apartment are always quite similar” (interview #4). “If we take a year as a reference, I use 2 or 3 different prices” (interview #5). The second group abandons the static price and uses a deep price discrimination. “The prices of the apartments during the course of the year are differentiated mainly when there are events” (interview #17). Furthermore, the price variation increases. “Within a year, I use about four significantly different prices” (interview #18). Big hosts enlarge the price discrimination or adopt a dynamic pricing approach. “In a year I use at least 6-7 different prices and then further changes are made within them” (interview #26). “I don’t use price ranges but continue to rebalance rates based on demand. The dynamism of the price is guaranteed by the daily observation of the market” (interview #21). “Every day I apply a different price. We do the same work that hotels do” (interview #22).

Concerning revenue or price maximisation, the focus of the interviews confirms important differences among the groups. Single hosts are more oriented on price. “For me it is more important to have a high price rather

than higher revenues" (interview #3). "I prefer to have a high price and less reservations" (interview #6). Sometimes a higher price is perceived as a useful tool to select guests and avoid problems. "Lowering prices would bring disrespectful people to my house who are different from my target" (interview #15). The quote, despite focusing on the second group of hosts emerges in many single host interviews. Again, big hosts show a completely different approach. "Our revenue management system helps us fill apartments at the optimal price. "Every unsold night is a loss of revenue" (interview #22). "We have fixed costs to cover, which is why it is more important to generate high revenues" (interview #24).

Big hosts show a clear multi-channel ability. "To sell apartments, I use many different portals: Airbnb, Booking, Expedia, TripAdvisor, Trivago, HomeAway, VRBO, casavacanza.it, Home Togo and others. The most efficient channels are Booking and Airbnb" (interview #22). The presence of channel management software plays a pivotal role. "Multi-channel is managed through a management system called "cross booking", a channel manager" (interview #24). Some hosts have dedicated employees responsible for this activity. "Multi-channel is managed through a channel manager and the people in charge of booking" (interview #24). Also, many hosts of the second group show a multi-channel ability. "To sell apartments, I use Airbnb, Booking and our site" (interview #12). However, the prevalent focus is on Airbnb. "Booking generates more traffic, but I prefer working with Airbnb because these customers are much more polite. They have the idea that they come to my house, and they have respect" (interview #12).

Moving to the presence of a revenue manager, the first two groups are not big enough to have a dedicated person in staff. "I formulate the prices" (interview #3). "I've never felt the need to have external support or a dedicated figure to formulate the prices" (interview #12). Some big hosts have a revenue manager in their staff. "The prices are formulated by the staff who take care of the booking and are familiar with the principles of revenue management" (interview #24). Nearly all hosts in group three have attended price training, while hosts in groups one and two report the opposite.

5.3 Guest Communication and Interaction

The ability to interact with potential clients is a crucial activity for Airbnb hosts. Single hosts usually are enthusiastic to have a personal relationship with guests. In fact, these hosts are involved in many operating activities, as check-in, cleaning service (sometimes with the support of collaborators), and guest assistance. "I personally welcome my guests upon check-in" (interview #2). "The interaction with the potential customer is very intense. I also like to provide information about Milan. It's more of a friendly relationship than a professional one" (interview #5). "I have kept the initial spirit of Airbnb, that of welcoming guests into their own home" (interview #10). The answers are similar for hosts belonging to the second group. By contrast, in the third group the interaction is partially mediated by the employees and collaborators, on one side, and technology, on the other. "We have digitised the entire check-in process, thanks to digital locks" (interview #22). "Our company has eight employees. We also make use of external collaborators. Check-in is done by our staff" (interview #25). Response rate and response time is very efficient for all the hosts, without significant differences concerning the number of listings. In the interaction process the listing photos are considered very relevant. While single hosts prefer to realise by themselves the pictures, big hosts (group three) use more intensively professional photographers. "I've realised the photos by myself. I'd like to change them and have better quality images, but I've never trusted a professional photographer" (interview #2). "The photos used on the platforms are not changed often. However, if an apartment does not sell as it should, we intervene, perhaps even just changing the order and putting the most beautiful as the first photo. The photos were taken by a professional photographer who specialises in interiors" (interview #22). Another important difference between the host groups concerns the guest selection. Single hosts are more sensitive to selecting their guests and to avoid problems. "I do everything by myself. I host people in my house, and I want to know who comes" (interview #1). "I no longer use Booking because customers arrive who think they are in the hotel and therefore leave dirt, break objects and say nothing" (interview #12). Hosts belonging to the third group usually adopt instant booking and therefore do not select their guests. "We spend little time interacting with the customer before booking as we have adopted the instant booking system" (interview #22).

The second item is reputation. Hosts consider very important the reviews – "On a scale of 1 to 10 I think reviews are important 11!" (interview #6) –, more the score than the number. Reviews are so relevant that some Airbnb providers, during the start-up, prefer to apply cheap prices to attract many guests and collect reviews. "During the first four months we applied very low prices. It has served to have a greater number of reservations and therefore increase the number of reviews. Once we reached a reasonable number, we were able to increase the prices" (interview #6). "Reviews are a key element in building trust to the listing" (interview #12). A difference

among hosts emerges considering the ability of reviews to guide listing and service improvements. Hosts belonging to the first two groups usually have a strong and personal interaction with guests. Therefore, they are able to intervene when problems arise. “Weaknesses almost never emerge from the reviews because I intervene promptly during the stay when problems arise” (interview #14). By contrast, big hosts use more intensively reviews for identifying problems. “I happened to intervene on weaknesses that emerged from the reviews: for example, if it happens several times that they tell me that the apartment is too hot, I try to boost the air conditioning” (interview #22). The majority of big hosts have reported concrete examples of improvements introduced thanks to the reviews. Another important difference regards the time dedicated analysing the reviews. While small hosts affirm only to quickly read the reviews – “I spend little time analysing the reviews” (interview #4) –, large hosts invest more time. “Every time I check out, I scan the reviews. They help me understand how each apartment is positioned” (interview #21).

5.4 Revenue Management Software

The presence of software has a strong influence on the entire pricing process. Single hosts do not use software and Excel file. The support provided by the Airbnb platform is enough. Not surprising the multi-channel approach is not used and prices are mainly static or basically discriminated. By contrast, the third group of hosts largely adopt a software, mainly related to the benchmarking and pricing activity.

6. Conclusions

Focusing on theoretical conclusions, the study supports the host classification in three proposed groups. The first threshold is one and the second is around ten and supports the idea of professionalisation degree. The rising number of managed listings, in fact, requires a progressive creation of a firm, with employees and external collaborators, raising the fixed costs. By contrast, single hosts are widely involved in the operating activities (usually they realise everything by themselves), are less skilled, especially in providing and using information to orient the pricing. Furthermore, the goals are different. Small hosts are more interested in selecting their guests and preserving the listing. Therefore, they prefer maximising price rather than revenue. Big hosts are organised as a company, with employees and fixed costs. Therefore, they are “number” driven, researching more volume and revenue than price. Second, the four theoretical blocks used to understand the revenue management capability are relevant in explaining why and how the professionalisation degree is able to change the pricing process.

The study is in reach of possible empirical implications for Airbnb hosts and more generally for people involved in short-term rentals. The four blocks and sub-blocks provide concrete examples about the pricing formulation.

The main study limit is the space constraint that limited the findings. For this reason, the article reports only the pricing components without providing the “overall picture” (how the four blocks and the sub-topics interact). By contrast the number of interviews is not perceived as a limitation. In fact, there is a high overlapping between the interviews (especially for hosts pertaining to group one and two) and saturation is quickly reached. Said differently, additional interviews tend to repeat the same items.

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