

Can Hosts “Catch” the Right Price in Airbnb’s Algorithm with the Help of the European Union Legislation?

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Abstract—Digital platforms have an increasingly important role in modern economies. Business models based on internet and data-driven software with declining marginal costs and increasing returns have contributed to the success of Airbnb and similar digital platforms. The ranking of properties and their visibility in search results on Airbnb and other platforms have an important impact on small businesses’ revenues. Most studies about Airbnb have not focused on algorithms determining search results and pricing suggestions from the perspective of a host. This research contributes to answers in this respect. The research finds that a host, accommodation provider and business user of Airbnb’s services, despite new European Union legislation regulating digital markets, cannot “catch” price set by the Airbnb in its dynamic pricing algorithm.

Index Terms—Airbnb, algorithm, prices, digital economy

I. INTRODUCTION

The power of a digital platform lies in its ability to reach a large number of people around the world. That enables it to shape both, supply and demand side of the market. Platforms in tourist industry depend on accommodation providers who are platforms’ co-producers because travellers would have no reason to use platforms such as Airbnb without accommodation providers. Most studies of Airbnb have focused on its business model and other issues with respect to its strategies, tax issues, regulation, impact on housing and other aspects (Hati *et al.*, 2021); however, not much attention in the literature has been given to hosts who list their property on Airbnb. In a few studies that have focused on hosts, it has been recognized that hosts may not differentiate between different algorithms (e.g. search, pricing) but only refer to a “monolithic” Airbnb algorithm (Jhaver *et al.*, 2018). In regard to pricing strategies of hosts on Airbnb, Gibbs *et al.* (2017) warned of the potential problems of dynamic pricing in the sharing economy context. Some hosts lower their prices to increase the number of booking enquiries (Ikkala and Lampinen, 2014), other authors found that that Airbnb did not support hosts when needed and that the host practice was indirectly controlled through the platform’s changing policies (Farmaki and Kaniadakis, 2020).

The key research question in this study is whether a host, advertising a property on Airbnb, understands to a reasonable extent- what determines the position of his/her property in ranking of search results, particularly in regard to a nightly price for accommodation, and whether the relevant legislation helps him in this respect. In order to answer how to determine or “catch” the right price that would make a

property more visible on Airbnb, the research focuses on Airbnb ranking algorithms, with an emphasis on pricing. Ranking is defined as the use of algorithmic sequencing that gives higher relative prominence to certain properties in search results on Airbnb. The focus in this respect is price as price is a key factor for Airbnb success (Guttentag *et al.*, 2017) because accommodation booked via Airbnb is usually cheaper than other options (Tussiyadiah and Pesonen, 2016). To “catch” a price in this paper implies the ability of a host to understand the importance of price and other features of his/her property in order to attract guests. In line with this, a host should therefore set such a maximum and minimum nightly price per stay that these bands are likely to make this property more visible on Airbnb, especially if he/she opts for dynamic pricing model offered by Airbnb.

The structure of the paper is as follows: Section II focuses on methodology, data and the background of the Airbnb phenomenon. Section III briefly looks at network effects while Section IV examines Airbnb’s Terms of Service. Section V examines pricing issues and Section VI analyses European Union legal framework to “catch” certain parameters. Section VII provides conclusion of the study.

II. METHODOLOGY, DATA AND BACKGROUND

A. Methodology and Data

The research methodology consists of legal analysis, literature review, analysis of Airbnb’s Terms of Service and multiple random searches for accommodation on Airbnb’s website. The analytical approach is largely based on internet search and textual/content analysis. The research was undertaken between 2019 to 2023. There are three types of data that a host can acquire in regard to how his/her property is listed on Airbnb and how a price per stay can influence the visibility of that property. First, Airbnb’s Terms of Service available on its website provides some information on ranking of search results (including the impact of prices). This is a general Airbnb’s textual explanation about which parameters determine ranking and dynamic pricing. Second, a host can search the Airbnb website by taking the role of a traveler looking for accommodation. In response to a query for accommodation at some point in time at the particular destination, Airbnb website generates search results by displaying properties available at that point in time and at the particular location. Those search results also display price of the accommodation. Third, a host¹ can explore Airbnb host community centre online where hosts discuss their experience with Airbnb’s algorithms in regard to ranking and prices. However, a host cannot expect that Airbnb would

Manuscript received January 31, 2023; revised March 22, 2023; accepted April 12, 2023.

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¹ The terms “host”, “property owner” and “accommodation provider” are used interchangeably in this paper.

reveal the details about its algorithms determining ranking and dynamic prices because those algorithms are protected as intellectual property.

B. Background

Hosts may wonder how Airbnb's algorithms generate search results of properties in response to a traveller's query. Specifically, the concern may be that the ranking of search results may reflect Airbnb's interest, at the expense of both, hosts and consumers (Competition and Markets Authority, 2021). Airbnb, established in 2008, initially focused on private accommodation such as rooms, apartments and houses. In the last few years it started adding hotels and other categories such as Airbnb Plus (a selection of only the highest quality homes), Hotel Tonight (incredible last-minute hotel deals), Airbnb at work (feel at home wherever the job takes you) and Airbnb Luxe, the "world's most extraordinary homes, a selection of expertly designed homes with high-end amenities, services, and dedicated trip designers" (Airbnb Luxury, 2022). These changes indicate that despite its initial narrative about "sharing", Airbnb's motivation to be in the short-term vacation rental is clearly commercial (Ranchordas, 2015). There is no sharing when "sharing" is market-mediated (Eckhardt and Bardhi, 2015), that is when there is a company acting as an intermediary between peers who don't know each other and where consumers (travellers in this case) are paying to access someone else's (i.e., accommodation providers) services for a particular period of time.

III. NETWORK EFFECTS

The appeal of a digital platform lies in its network effects (European Commission, 2018) and the ability to reach a large number of people around the world. In the *Ahtop v. Airbnb Ireland* case C-390/18 at the Court of Justice of the EU (European Union, 2019), the Advocate General Szpunar in his Opinion of 30 April 2019 stated that the platform developed by Airbnb was open to both professional and non-professional hosts, that the short-term accommodation market, whether professional or not, existed long before the Airbnb and that professional and non-professional hosts could offer their assets via more traditional channels, such as by creating a website devoted solely to their accommodation that can be found online with the help of search engines (Opinion of the Advocate General, 2019). One could agree that it is technically and otherwise possible for small, medium and micro companies and individuals to create their own websites where they would advertise their accommodation; however large digital platforms such as Airbnb with millions of users, can reach considerably more travellers in a global marketplace. In addition, Airbnb has made it very easy for property owners to list their properties on Airbnb's website.

Property owners are aware that the position of their listing in search results on Airbnb is crucial for their business turnover. Some authors have found that hosts seem to have turned into powerless hostages of Airbnb which uses its positional power as an intermediary service between peers on the supply and demand side to implement changes (it wants) upon host practice (Farmaki and Kaniadaki, 2020).

The core component of Airbnb's brand identity is about

being "at home" with a suggestion of impersonality (OECD, 2019). Price has a special meaning in this respect. Airbnb connects heterogeneous consumers with heterogeneous supply side providers (e.g. hosts) and this heterogeneity is a basis for platform's price differentiation and complex pricing and non-price strategies Airbnb applies to both sides of this peer-to-peer market. Online platforms such as Airbnb enjoy a strong asymmetry against its business users (i.e. accommodation providers). Once connected to a business user, a platform can expand its activities so as to build a one-stop ecosystem for consumers (Jullien and Zantman, 2021). In the case of Airbnb such example is *Experiences* at Airbnb.

IV. KEY RANKING PARAMETERS IN AIRBNB TERMS OF SERVICES

Airbnb's Terms of Services for European users available on its website in January 2023 state the following about ranking:

"6.3. Search Ranking. The ranking of listings in search results on the Airbnb Platform depends on a variety of factors, including these main parameters:

Guest search parameters (e.g., number of Guests, time and duration of the trip, price range),

i. Listing characteristics (e.g., price, calendar availability, number and quality of images, Reviews, type of Host Service, host status, age of the Listing, average Guest popularity),

ii. Guest booking experience (e.g., customer service and cancellation history of the Host, ease of booking),

iii. Host requirements (e.g., minimum or maximum nights, booking cut-off time), and

iv. Guest preferences (e.g., previous trips, saved Listings, location from where the Guest is searching).

Search results may appear different on our mobile application than they appear on our website. Airbnb may allow Hosts to promote their Listings in search or elsewhere on the Airbnb Platform by paying an additional fee." (Airbnb Terms of Service).

According to the Terms of Service stated above, Airbnb may allow hosts to promote their listings in search or elsewhere on the Airbnb platform by paying an additional fee. However, information about how much this additional fee is and to what extent it impacts on the ranking of the particular property in search results is nowhere to be found on Airbnb website.

Airbnb can provide value by aggregating, organizing, and retrieving properties that best meet consumers' (i.e., travellers') criteria for accommodation. Well-designed choice architecture in an algorithm including default options and rankings can help consumers make better decisions. However, when it is not clear how online platforms such as Airbnb generate default search results and ranking of properties, this could produce concerns that the ranking of search results "may reflect what is in the firm's interest, potentially at the expense of consumers' interest" (Competition and Markets Authority, 2021).

One of the findings in this study based on multiple random searches for accommodation across Europe on Airbnb is that

the default ranking of search results in response to a query is not sorted based on prices, guest review rate or number of reviews, but a combination of them (Table I).

TABLE I: ONE OF SEARCH RESULTS OF MULTIPLE RANDOM SEARCHES ON AIRBNB WEBSITE FOR STAY IN VIENNA IN MAY 2021

Ranking order of properties in search results	Nightly price (EUR)	Guest review rate	Number of reviews
1.	56	5.0	12
2.	65	4.75	132
3.	45	4.81	26
4.	34		
5.	54	4.59	294
6.	40	4.55	20
7.	49		
8.	22	4.43	7
9.	53	4.81	31
10.	53	4.76	220
11.	47	4.86	90
12.	47	4.94	73
13.	34	4.14	22
14.	109	4.99	165
15.	62	4.91	22
16.	54	4.61	23
17.	57	4.63	229
18.	17	4.11	37
19.	61	4.80	389
20.	82		

Source: Author's compilation of search results, May 2021

Travellers can see in search results on Airbnb a list of properties that are not sorted by price, the average guest review rate or the number of reviews (Table I. For example, the 4th property in search results in Table I was a property that has had no reviews yet at the time of search. The price was set at 34euro. Another property that also had no guest review yet, was ranked 7th with the price 49euro. Similarly, a property that had no guest review yet and was therefore relatively recently listed, was 20th and its nightly price was 82euro (Table I). This particular search for accommodation in Vienna revealed that properties with lower prices were ranked higher by Airbnb's algorithm, thereby generating search results so as to position new listings with higher prices lower (Table I).

Main parameters determining ranking in search results are explained by Airbnb in its Terms of Service. The interpretation of the term "*main parameters determining ranking*" could be a thorny issue because *Listing characteristics* would typically be expected to consist of objective features of the property. However, at Airbnb *Listing characteristics* include also subjective variables, set by its algorithm. For example, "*average Guest popularity*". Airbnb evaluates the popularity of a listing using a wide range of information, including how guests engage with the listing (Airbnb, How search results work). How is the variable *how guests engage with the listing* objectively measured? Airbnb gives an example as how often guests message the host. Is more communication and questions from guests better for ranking of this property? People may have different organizational habits, work culture, attitude towards communication and similar and therefore, their attitude to communication with the property might not have much to do

with the quality of property itself. The *average Guest popularity* influencing the position of a property in search results seems to be more in the interest of Airbnb than in the interest of travellers. Interestingly, if a traveller, as of the end of 2022 wanted to look for more or less popular location, nowhere on the Airbnb's website was there a button that had "popularity" written on it so that a traveller could click on it and refine his/her search by having "popularity" as a deciding criterium for choosing a certain property. There are also some other interesting parameters, generated by Airbnb. For example, *host status*. A host can be a superhost, as revealed by Airbnb's website in its Terms of Service. One of the required criteria to become a superhost is to maintain a low, less than 1% cancellation rate. A host can cancel a maximum of 1 reservation per 100 reservations to achieve a superhost status (Airbnb, How-to-become-a-superhost). One could infer that a superhost status has nothing to do with the objective characteristics of a listing (such a number of rooms etc.). Some other variables generated by Airbnb's algorithm such as *Guest booking experience* might be also highly subjective. In regard to the Airbnb's variable *ease of booking*, Airbnb has two policies: the first is that a host does not allow speedy booking but wants to be first communicated by a potential guest. The second option is that a host allows immediate booking without asking any questions about a guest. Airbnb obviously prefers the second option (Airbnb, How-to-become-a-superhost). If a host allows immediate booking, his/her property is ranked higher in Airbnb's algorithm determining search results. Airbnb's recommendation to hosts to allow instant booking (without checking guests first via a message request) has financial risks for hosts. In case of problematic guests, if they do any damage to a property, the path to recover costs for a repair is not easy for hosts.

There are also other differentiations based on Airbnb's criteria. For example, properties that provide unique activities hosted by someone with special expertise tend to rank higher (Airbnb, How search results work) in search results. Airbnb makes a differentiation in ranking against those hosts who are not involved in providing any particular experience to guests because those hosts provide accommodation services only.

V. "CATCH" THE PRICE

If a host decides to search Airbnb website to look how his/her property is ranked, and has gone through a lot of pages on Airbnb but cannot find his/her property, one of the very likely reasons is that the nightly price per stay at his/her property is too high, according to the Airbnb's algorithm determining search results. If a property is ranked low in search results, only a few travellers will see it, and only a few may book it. In this study, multiple searches for accommodation across Europe, revealed that Airbnb's filter about nightly price per stay did not allow sorting (in an ascending or descending order of price, for example). A traveller searching for accommodation on Airbnb could not filter properties by price up to a certain amount in an ascending order.

Airbnb offers its hosts to choose a dynamic pricing option, called Smart Pricing. If a host accepts Airbnb's suggestion to

choose Smart Pricing and sets a minimum and maximum price within which the actual nightly price may fluctuate, it is Airbnb’s algorithm that will set a price per stay between the minimum and maximum band. According to the explanation on Airbnb’s website, its algorithm on Smart Pricing includes many parameters, not just the minimum and maximum limits set by a host. Some authors (Bundeskartellamt-Autorité de la Concurrence, 2019) have established that algorithms used for dynamic price settings or for ranking may set prices and positions in line with the companies’ own commercial interests. In the case of Airbnb that implies that Airbnb’s algorithm may set lower prices within the minimum and maximum bands in Smart Pricing to make sure the accommodation is booked as much as possible because it is in Airbnb’s commercial interest to have a property booked instead of not booked at all.

TABLE II: ONE OF SEARCH RESULTS OF RANDOM SEARCH ON AIRBNB WEBSITE FOR STAY IN THESSALONIKI IN APRIL 2021

Ranking order of properties in search results	Nightly price (EUR)	Aggregate guest review rate	Number of reviews
1.	31	4.76	218
2.	37	4.92	156
3.	23	4.96	112
4.	52		
5.	42	4.89	36
6.	51	4.85	347
7.*	32		
8.	43	4.82	22
9.	44	4.91	80
10.	82	4.92	118
11.	41	4.85	26
12.	36	5.0	4
13.	72	4.97	63
14.	43	4.89	333
15.	41	4.87	247
16.	93	5.0	68
17.	44	4.71	80
18.	65	5.0	193
19.	35	4.77	79
20.	36	4.72	36

Source: Author’s compilation of search results, April 2021

Random searches for accommodation on Airbnb revealed that in some cities there were many more superhosts than in other cities and in some searches, the displayed properties included a property host marked a “superhost”, although the property had just recently been listed and had no guest review at all. Such is the case of the 7th property displayed in search results in response to a traveller’s search for accommodation in Thessaloniki (Table II). Since a “superhost” status can be achieved by maintaining a low, less than 1% cancellation rate, it means that a host can cancel maximum 1 reservation out of 100 reservations to maintain “superhost status” (as per Airbnb’s Terms of Service). However, multiple random searches on Airbnb for accommodation across Europe revealed that some properties were labeled with “superhost” status although they had no guest review at all (Table II). It can be inferred that the 7th property in this table was displayed high in search results and had a “superhost status” without having any guest review at all, because perhaps the host of this property was willing to pay a higher fee to Airbnb

to make the property more visible in search results. The same could be inferred about the property ranked 4th. This property was not marked as “superhost” but had no guest reviews at all (Table II). It is not clear what exactly influenced such a high position in search results considering that there was no guest reviews at all.

Guests’ reviews are important for Airbnb’s dynamic Smart Pricing, because –according to the Airbnb’s information on its website- guest reviews score is included in Smart Pricing. The Airbnb’s Terms of Service in January of 2023 under *General Terms, 9. Reviews* stated that “after each host service, guests and hosts will have an opportunity to review each other. The review must be accurate and may not contain any discriminatory, offensive, defamatory, or other language that violates their content policy or review policy. Reviews are not verified by Airbnb for accuracy and may be incorrect or misleading. While Airbnb encourages and expects all community members to post reviews that contain objective and accurate information, Airbnb does not mediate disputes concerning truth or fairness” (Airbnb, Terms of service). Reviews are central to the Airbnb platform not only because they are meant to build trust and facilitate “sharing” among individuals, guest reviews are also included in Airbnb algorithm in Smart Pricing that is part of the algorithm that generates ranking of properties in search results. Airbnb wants accommodation providers to set low prices per stay, otherwise –as Airbnb clearly writes- their properties might be ranked lower in search results when a potential traveller looks for accommodation on Airbnb’s website (Airbnb, How search results work). Low price per stay is in line with the Airbnb’s narrative about “sharing” on one hand; while it can attract consumers (guests) and help Airbnb remain competitive vis-à-vis other competitor platforms, hotels and similar, on the other hand. This is in line with the theory of industrial organization of digital platforms and the demand-driven returns to scale (Jullien and Zantman, 2021). The more competitive a price per stay on Airbnb is, the more consumers the platform attracts. As a result, due to the demand-driven network effects, the average net revenue increases with the increasing number of users. Algorithms on platforms such as Airbnb combine two goals: to bring a particular service to the user in line with users’ individual preferences and to increase the consumption of the network so to maximize the platforms’ revenues (Budzinski and Kuchinke, 2018). In this respect, it is clear that rankings of properties are meant to differentiate and select the most relevant results for users (Graef, 2019). One of the findings in this research is that a nightly price per stay is a very important parameter not only to a host and a guest, it is very important to Airbnb as well. In its “Tips for Improving Your Airbnb Search Ranking”, Airbnb states that to “enhance your listing” (e.g., by providing high quality photos etc.) price is among those factors that influences ranking. Airbnb advises its hosts to “make your price more competitive” because “setting a competitive price can help improve your ranking as listings offering the best value in any given region tend to appear higher in search results” (Airbnb Resource Center, 2022). The importance of a nightly price per stay and a pressure from Airbnb to hosts to reduce prices of their accommodation is also confirmed by hosts’ discussions on ranking in the Airbnb Community Center online (Airbnb Community,

2022). For instance host named Huma0 from London, United Kingdom wrote:

“From the start, price tips were always telling me to lower my prices when I could see that the listings in my area that were actually comparable were priced much higher than mine” (Airbnb Community Ranking, 2022).

Another host named Kara13 from Calgary, Canada wrote: *“I think we should all get together and RAISE OUR PRICES instead of lowering them. If for nothing else in response to AirBnB continuous harrassment to lower our prices!!! I say get rid of Smart pricing or make actually work properly”* (Airbnb Community Ranking, 2022).

VI. CAN NEW EUROPEAN UNION LEGISLATION HELP?

Online platforms might claim a certain neutrality of their mediation services, but facts show they are oriented towards their own profit maximization. Hosts on Airbnb might not be aware of the full value of the data they generate for Airbnb. They may also not understand the ranking practices applied to them by Airbnb or similar online platforms (Martens, 2016).

In the European Union (hereinafter:EU) some legislative steps were taken in recent years to regulate digital markets for users in the EU. The Regulation 2019/1150 of the European Parliament and of the Council (hereinafter: P2B Regulation) (2019) that entered into force in July 2020, aims to ensure a trusted, fair and predictable online business environment for digital platforms and their business users. This Regulation is about digital platforms (e.g., Airbnb) and their business users (e.g., hosts) only. In regard to ranking, Article 5 of the P2B Regulation stipulates that the descriptions of the main ranking parameters shall be sufficient to enable business users of digital platforms (e.g., hosts on Airbnb) to obtain an adequate understanding of the ranking mechanism. Article 5(1) of this Regulation states that terms and conditions of online platforms must set out the main parameters determining the ranking and the relative importance of main parameters as opposed to other parameters. However, from the perspective of hosts, stating key parameters, as envisaged by this Regulation, does not really alleviate key concerns. Article 5(6) states that providers of online intermediation services (such as Airbnb) are not required to disclose algorithms, that would actually make it clear to hosts how Airbnb generates certain parameters that are included in the algorithms that generate ranking of properties in search results and how it sets nightly price if a host opts for Smart Pricing. Since the objective parameters such as location, size of accommodation and other criteria set by a traveller are not the only parameters that determine ranking of search results; there are also parameters generated by Airbnb that influence the search position of a certain property, it is not clear exactly how and based on what objective criteria those parameters influence ranking of properties in search results. A host cannot get that information because this Regulation does not require online intermediation services such as Airbnb to be fully transparent about that (Article 5(6)).

Ranking issues at Airbnb are different from the ranking questions in the case of app store operators and their possible self-preferencing based on ranking algorithms that give their own applications a higher position in search results (Brower,

2020). However, the principle is the same. Airbnb can profit from certain properties more, may distort competition among accommodation providers and steer travellers to choose those properties that appear higher in search results even if those may not be the best choice as their preferred choice of accommodation.

Ranking of properties in search results cannot be understood just on the basis of the most important parameters that are stated on Airbnb’s website. Therefore, a host cannot “catch” a certain price per stay at his/her property if he/she opts for Smart Pricing, because Airbnb is not required to disclose algorithms that are applied in its Smart Pricing model. The only way for a host to “catch” the nightly price it wants to charge per stay in his/her property is to set a fixed price manually on the Airbnb setting. Therefore, a host should not opt for dynamic pricing in the Smart Pricing. In the latter case a host can never know how exactly Airbnb determines a nightly price per stay. Airbnb may write its search algorithm so to attach more weight to the ranking parameters that are generated by Airbnb and more important to Airbnb. For instance, attaching more weight to the properties whose hosts are willing to pay additional fees to have their property promoted and ranked higher in Airbnb ranking and pricing algorithms. Or, attaching more weight to properties that generate more income for Airbnb. An example is a parameter “*average Guest popularity*”, a parameter generated by Airbnb that may favour large and established business over small businesses, and leads to a self-enforcing mechanism that reduces the ability of new and small, medium and micro businesses to compete equally, even if they have a better accommodation offer.

In regard to the Digital Services Act (2020), the European Commission proposed this Regulation in December 2020 and reached a political agreement between the EU member states and the European Parliament on 23 April 2022. The aim of the Digital Services Act is to contribute to the proper functioning of the EU internal market by setting out harmonized rules for a predictable, safe and trusted online environment that does not hinder innovation and in which rights set in the Charter of Fundamental Rights of the European Union, including the principle of consumer protection, are effectively protected. Article 3 of the Digital Services Act states that information society services (provided by online intermediaries) can be a ‘mere conduit’ service (consisting of the transmission in a communication network of information provided by a recipient of the service, or the provision of access to a communication network); a ‘caching’ service (consisting of the transmission in a communication network of information provided by a recipient of the service, involving the automatic, intermediate and temporary storage of that information, performed for the sole purpose of making more efficient the information’s onward transmission to other recipients upon their request) and a ‘hosting’ service (consisting of the storage of information provided by, and at the request of, a recipient of the service).

Similar to the P2B Regulation (which is *lex specialis*), the Digital Services Act imposes some transparency requirements on digital platforms, including about the algorithms used for recommending content or products to users. Article 15 of the Digital Services Act stipulates

transparency reporting obligations for providers of intermediary service to report at least once a year, publicly, about the number of complaints received through the internal complaint-handling systems and additionally, for providers of online platforms, the basis for those complaints, decisions taken in respect of those complaints, the median time needed for taking those decisions and the number of instances where those decisions were reverse. According to Article 24 of the Digital Services Act, and in addition to the information referred to in Article 15, providers of online platforms shall include in the reports referred to in that Article information on the number of disputes submitted to the out-of-court dispute settlement bodies referred to in Article 21, the outcomes of the dispute settlement, and the median time needed for completing the dispute settlement procedures, as well as the share of disputes where the provider of the online platform implemented the decisions of the body.

This research has found that the P2B Regulation and the Digital Services Act do not ease key questions and concerns for small, medium and micro business users and individual hosts of Airbnb. Although both legal texts introduce various transparency obligations for online platforms, these obligations leave some possible deviations such as issues in ranking algorithms, unresolved. According to Article 5 of the P2B Regulation digital platforms such as Airbnb are not required to disclose the detailed functioning of their ranking mechanisms, including algorithms. While the P2B Regulation in the Article 5 states that providers of online intermediation services shall “set out in their terms and conditions the main parameters determining ranking” in “an easily and publicly available description, drafted in plain and intelligible language” (p. 71), the Digital Services Act in Article 29 (1) states that “very large online platforms that use recommender systems shall set out in their terms and conditions, in a clear, accessible and easily comprehensible manner, the main parameters used in their recommender systems”. Both legal texts thus require transparency in regard to ranking, however that does not in any way prevent digital platforms to manipulate algorithms in order to manage rankings. Discriminatory rankings can limit consumer choice and the ability of hosts, especially small hosts to compete with others, especially larger businesses. Although the P2B Regulation provides for the possibility to bring actions against platforms in Article 14, similarly to Article 20 in the Digital Services Act, the protection offered is largely limited to transparency obligations, while the system of internal complaints and mediation is too dependent on the platforms.

A core part of the online platform’s business is a way in which information is prioritised and presented on its online interface for the recipients of the service. This is done, for example, by ranking, algorithmically suggesting and prioritising information, through visual representations or through text. Such recommender systems can influence the recipients in how they see, understand and interact with information online. As a result, online platforms should ensure that users of their service are appropriately informed about how recommender systems (e.g., ranking of search results) can influence their decisions.

VII. CONCLUSION

Very large online platforms have a significant impact on the economy and society. There are strong economies of scale with low or zero marginal costs which makes it easy for online platforms to attract new users. The EU legislation such as P2B Regulation and the Digital Services Act set a higher standard of transparency on advertising and on algorithmic processes in very large online platforms because some features of digital platforms may lead to the failure of the natural competitive processes to deliver competitive outcomes. The P2B Regulation and the Digital Services Act are a step in the right direction as they set a higher standard of transparency and accountability of algorithmic processes. Still, the underlying question is if they will bring more certainty and predictability for small business users of Airbnb in regard to ranking and pricing algorithms that crucially determine their chances of success. New EU legislation, the P2B Regulation and the Digital Services Act cannot help hosts to “catch” price and other features that really determine the position of their properties in the ranking of search results. Both legal texts do not require more algorithmic transparency.

This research has found that a (low) nightly price per stay is a very important parameter to Airbnb. Second, certain ranking parameters stated in Airbnb’s Terms of Service might be used in Airbnb’s algorithms in a discriminatory way, especially if these parameters cannot be adequately measured, are not reliable or don’t have an objective justification. Looking at Airbnb from a host perspective, the issue is not about disclosing an algorithmic code or detailed functions of algorithms on which the ranking methods are based. The issue is the relative importance or weight of a particular parameter and the objectivity of some of the parameters included in algorithms that determine search results. The ranking algorithm of properties may not only be discriminatory towards and among Airbnb’s hosts, it can negatively impact on consumer choice as well.

This study contributes to the research on Airbnb by focusing on algorithmic curation from the viewpoint of a host. Future research could use surveys to assess directly how hosts on Airbnb make sense of the influence of algorithms with respect to pricing and ranking of their properties in search results.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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