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Managing value dimensions within an ecosystem framework: Reflections and empirical observations in the tourism sector

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The increasing attention in the field of value management is highlighting multiple challenges for researchers and practitioners. Building on previous managerial contributions, the paper aims to define a possible path for combining the conceptual contributions related to value in exchange, value in use, and value in context in a common framework to improve understanding of emerging social and economic dynamics under the interpretative lens provided by studies on ecosystems. Based on previous managerial contributions in the tourism management domain, the study identifies a set of variables related to the three conceptualizations of value with reference to the case of Airbnb. These variables are the host's price per night (€), host position in the Airbnb ranking, previous evaluations of the host, average number of a host's guests, availability of the host's photographs, total number of services provided by the host, physical accessibility of the host (travel distance from the airport), and number of languages spoken by the host. Combining qualitative and quantitative approaches, the impact of the identified variables and users' evaluation is investigated via structural equation modeling.

Key words: Value processes, value in exchange, value in use, value in context, ecosystem, tourism sector, Airbnb.

INTRODUCTION

Over the last 20 years, value has become a hot issue, and multiple contributions have been provided in several scientific domains (Day and Day, 1990; Woodruff and Gardial, 1996; Srivastava et al., 1999; Prahalad and Ramaswamy, 2004; Ballantyne and Varey, 2006; Flint et al., 2008; Vargo et al., 2010; Grönroos, 2011; Chandler and Vargo, 2011; Badinelli et al., 2012; Storbacka et al., 2016).

A traditional economic perspective considers value as embedded in goods and delivered to customers through market exchanges; for example, through the exchange of money (*value in exchange*) (Smith, 1776; Jacobs, 2009). However, earlier, Aristotle (384–322, BCE) and later Smith agreed that there is also another, inherently subjective conceptualization of value dependent on the utility/usefulness of a good (*value in use*) (Ballantyne and

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Varey, 2006).

Currently, the service-dominant logic mindset (Vargo and Lusch, 2004, 2016) has contributed to the shift from these two conceptualizations toward understanding value as always co-created by the interactions of multiple actors in the process of resources integration and service exchange for mutual benefit (Wieland et al., 2012). In this view, the context in which such interactions take place (Chandler and Vargo, 2011) and characteristics of the network of the involved actors that repeatedly co-create value has given rise to the conceptualization of value co-creation in service ecosystems (Vargo et al., 2015; Vargo and Lusch, 2016). Thus, value has been reinterpreted as *value in context*, because it is contingent on the integration of resources and is context specific (Vargo et al., 2010). However, even scholars of service research still do not cite value in context to describe customer value (Eggert et al., 2018).

Thus, the literature has sometimes presented these three conceptualizations of value as alternative perspectives ("a conceptual transition") (Lusch and Vargo, 2006). However, contextual value does not exclude the existence of an exchange or use of the resources integrated by actors in their interactions (Vargo et al., 2010). Instead, value in exchange is still part of the joint sphere of interaction among actors (supplier, customer, and others), while value in use should not only be referred to the customer, but also to the joint sphere of interaction (Eggert et al., 2018). Consequently, there is a need to expand managerial models to better consider the dynamics of relationships among multiple actors and highlight their implications in specific sectors (Gummesson, 1987; Winer, 2001; Gummesson and Polese, 2009; Gummesson, 2011).

Building on previous managerial contributions, this paper aims to define a possible path for combining the conceptual contributions related to value in exchange, value in use, and value in context in a common framework to improve understanding of emerging social and economic dynamics under the interpretative lens provided by ecosystem studies. Indeed, a higher value perception derived from assessing co-creation processes is recognized as a determinant of engagement for subsequent value co-creation processes (Storbacka et al., 2016).

A few studies have attempted to provide an operational and unifying view of value, but considered only two of the three conceptualizations through quantitative modeling, neglecting important variables in the ecosystem (Durugbo and Pawar, 2014). This paper focuses on the tourism domain (Polese and Carrubbo, 2008; Polese and Minguzzi, 2009; Carrubbo, 2013; Polese et al., 2018b, 2018c), with a focus on the case of Airbnb, an example of actor-for-actor (Polese et al., 2017d; Polese et al., 2018d) interaction enabled by new ICTs. This peer-to-peer

Internet platform provider enables authentic tourist-host encounters not replicable in conventional hotels (Tussyadiah, 2016). It has become recurrent in the literature for its characteristic of embodying the sharing economy and engaging people in sharing goods and services. Based on Airbnb hosts' offers and users' evaluations, the relationships between eight independent variables related to the domains of value in exchange, value in use, and value in context and users' evaluation in hospitality ecosystems have been verified (Barile et al., 2017; Troisi et al., 2018). This research answers the call in tourism for a deeper analysis of the overall customer value experience, highlighted as urgent in online information processing (Gursoy, 2018), in terms of the value sub-dimensions (Mohd-Any et al., 2015) and co-creation process (Zhang et al., 2018).

In this study, structural equation modeling (SEM) was employed since it enables analyzing the interrelations among variables that cannot be directly measured (Marsh et al., 2007). Data were collected through a web scraper. The rest of the paper is structured as follows: Section 2 describes the conceptual framework and hypotheses of the study; Section 3 explains the research design and methodology, and the results are reported in Section 4 and discussed in Section 5. Finally, Section 6 provides an overview of the key implications of the study and highlights preliminary conclusions and future research directions.

CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Value in exchange as a driver of relationships in the ecosystem

According to previous managerial studies, an appropriate approach to value in the ecosystem is adopting an extensive view by combining a common framework of contributions in multiple research streams such as systems and complexity theories (Wieland et al., 2012; Barile et al., 2016; Polese et al., 2017a; Calabrese et al., 2018; Tronvoll et al., 2018). In this view, a conceptual representation of the ecosystem requires overcoming a focus on the dyadic relation. Here, the sources of value are related to multiple actors, and their dynamics can only be captured by focusing on network dynamics (Gummesson and Polese, 2009; Barile and Polese, 2010b; Tregua et al., 2016; Di Fatta et al., 2016, 2018; Caputo et al., 2017c).

Following this approach, value in exchange can be considered the key reason stimulating the interrelation among institutions in social systems and emergence of the ecosystem (Costanza et al., 2000), because of the nature of involved actors as resource integrators (Vargo and Lusch, 2011; Pels et al., 2012).

Historically, value exchange was related to the total amount of resources an actor pays for a good or service

(Eggert and Ulaga, 2002; Simonson, 2005; Vargo et al., 2008). In this view, the price was considered as a relevant element influencing users' perceptions in the ecosystem (Chen et al., 1998). A recent study noted that price negatively impacts word of mouth, meaning that people may not like expressing their evaluation in the case of high prices (Matzler et al., 2019). Moreover, Xia et al. (2004) underline the relevant role of price in defining users' perceptions with reference to the evaluation of the quality of processes and services. Martín-Consuegra et al. (2007) demonstrated the influence of price strategy on customers' satisfaction.

The validity of these contributions confirms the need to evaluate the capability of value in exchange to act as a good first marker for analyzing the performance of companies in the tourism sector as a dynamic ecosystem (Gretzel et al., 2015a). Accordingly, it is interesting to investigate whether:

H1: There is a negative relationship between the host's price per night and users' evaluations (*reviews*).

Following the reflections herein, value in exchange emerges because involved actors may be part of an interactive process (Edvardsson et al., 2011; Di Nauta et al., 2018; Saviano et al., 2018; Scuotto et al., 2017). This opportunity is partially related to users' willingness to be involved in shared paths with companies (Karahasanović et al., 2009). Moreover, value in exchange is strictly related to the conditions that influence users' willingness to participate in a sharing process (Cova and Dalli, 2009; Barile et al., 2014).

Here, with reference to the tourism ecosystem, it becomes relevant to try to identify factors that can stimulate or obstruct users' willingness to participate and interact (Gretzel et al., 2015b). As such, Akehurst (2009) emphasized that tourism users tend to make decisions based on the suggestions and information provided by actors that previously interacted with the host. From a different perspective, Law et al. (2010) show that users' evaluations in the tourism sector tend to be influenced by the availability of information provided by previous users. Accordingly, the research reported in this paper aims to test the following:

H2: There is a positive relationship between the total number of evaluations related to the host and users' evaluations (*reviews*).

H3: There is a positive relationship between the host's position in the Airbnb ranking (*Ad Ranking*) and users' evaluations.

Value in use for the evaluation of the ecosystem proposition

According to Roggeveen et al. (2015), value is emergent,

idiosyncratic, and subjectively perceived by the beneficiary. In an ecosystem, the survival of the relational network is generally related to actors' perceptions of the value perceived in interactions in terms of feeling that their expectations have been fulfilled (Polese et al., 2015, 2016).

Typically, the user does not directly derive value from the purchasing process, but from usage, transformation, and consumption processes (Sandström et al., 2008). Furthermore, value is not simply created through the production process, but follows a co-creation process (Ballantyne and Varey, 2006; Grönroos, 2011; Saviano et al., 2017). In this sense, value is the result of the participation of all involved actors, and it acquires meaning as a consequence of its use (Vargo et al., 2008).

Building on these assumptions, value in use represents a relevant driver for evaluating the capability of all organizations to define adequate value propositions in the market (Sandström et al., 2008). Extending the investigation perspective, value in use can be related to the complex elements the user considers useful in evaluating companies' propositions (Grönroos, 2008). More recently, from a value in use perspective, the value proposition has been recognized as the "invitation to play" with enhanced knowledge sharing between supplier and customer (Frow et al., 2014). In the tourism sector, value in use could be related to the number of services provided by the host. Similarly, Law et al. (2010) demonstrate strong correlations among the number of services provided by the host and users' evaluations. In addition, Weiermair (2000) focused on how the number of services provided by the host influences users' satisfaction. Recognizing the validity of these contributions, this study aims to investigate the following hypothesis:

H4: There is a positive relationship between the number of services provided by the host and users' evaluations (*reviews*).

According to the reflections herein, users' evaluation of the host proposition is influenced by the availability of information on the general satisfaction of actors that have been part of the same service ecosystem. Extending this approach, possibly, users' evaluation is not only related to the availability of information on the host, but also by the number of guests that the host can give hospitality to (Buhalis, 1998). Accordingly, users' evaluations are affected by the choices of other actors (Akehurst, 2009). As such, Cabiddu et al. (2013) show that a high number of guests are perceived by the tourism market as evidence of the quality of the host's proposition. Therefore, considering Airbnb as a relevant source of information for tourism users, the paper aims to verify the following hypothesis:

H5: There is a positive relationship between the number

of guests the host can host and users' evaluations (*reviews*).

Value in context to improve understanding of the ecosystem

According to Polese et al. (2018a), value co-creation in ecosystems requires: a) the active role of all involved actors; b) a constant multi-directional, multi-form, multi-part collaboration; c) development of systemic interactions among all actors; d) a stable resources exchange release; e) strategic sharing of information and objectives; f) growing mutual satisfaction; g) synergic results; and h) the convergence of individual goals.

Building on these key points, the relevance of context emerges as a fundamental dimension in the study of markets and value co-creation processes (Peñaloza and Venkatesh, 2006; Mele and Polese, 2011; Aarikka-Stenroos and Jaakkola, 2012; Yi and Gong, 2013). According to Chandler and Vargo (2011), context is an important dimension for understanding value co-creation processes, because it frames exchange, service, and resources in light of actors' perspectives (Polese et al., 2017b). Context can be explored at multiple levels (from micro-dyadic exchanges to macro-ecosystems) and depends on the resources available to actors and the institutional logic they adopt to interpret the value potential of the resources. Thus, since context is continually reshaped by actors' interactions, the time and space of value co-creation become interesting when evaluating companies' performance and competitiveness in the ecosystem (Löbler and Hahn, 2013). In tourism ecosystems, the study of value in context requires investigating the structural conditions through which the host can define and formulate its value proposition (Ciasullo and Carrubbo, 2011; landolo et al., 2016). In this direction, interesting stimuli can be derived from the study of Leiper (1979) on the spatial location of a host in the tourism sector. According to the author, it exists of a halo produced by the area in which the host is located that strongly influences users' evaluation. Furthermore, Kundu and Contractor (1999) demonstrated that the area in which the host is located defines the pre-condition on which users construct their evaluation of the host's proposition.

In addition, the domain of value in context should be evaluated according to the host's image as perceived by users. Here, physical accessibility is a more tangible way for users to subjectively evaluate the host's image performance. Accordingly, Darcy and Dickson (2009) highlighted that tourism users consider accessibility relevant in evaluating the host's reliability. Cooper (2008) focused on the multiple ways in which accessibility impacted users' perceived level of satisfaction and his/her evaluation of the host. Recognizing the contributions provided by this study and considering the travel distance from the airport a good measure of accessibility, this

study attempted to contextualize previous contributions with reference to the case of Airbnb to test the following hypothesis:

H6: There is a positive relationship between the evaluation of the area in which the host is located (*travel distance from the airport*) and users' evaluations (*reviews*).

Moreover, considering that value in context emerges because of the combination of the resources both actors (host and customer) integrate, another variable related to the opportunity to effectively share resources with the host can be included (Morrison and Teixeira, 2004). Leslie and Russell (2006) showed that the existence of a cultural and language barrier to accessing tourism services is more relevant than the services per se, while Becton and Graetz (2001) noted that the possibility for users to easily interact and communicate with the host influence their perception of the tourism experience. According to these contributions, this study investigated whether:

H7: There is a positive relationship between the number of languages spoken by the host and users' evaluations (*reviews*).

Finally, a relevant influence in the tourism ecosystem is determined by the possibility that users have information about the host to evaluate the convenience in building a relationship (Goossens, 2000; Williams and Soutar, 2009; Caputo et al., 2018a). In this regard, Buhalis (1998) indicated that non-textual information strongly influences users' perception and their willingness to build a relationship with the host. Schmallegger and Carson (2008) pointed out that image communication through pictures and video could directly influence users' unconscious evaluations. Accordingly, the following hypothesis was tested:

H8: There is a positive relationship between the availability of a host's photographs and users' evaluations.

RESEARCH DESIGN

Data were collected of a population of Airbnb advertisements geolocated in the Great London Area, England through a web harvesting process (Marill et al., 2004). Geographical sampling was motivated by the existence of a famous fair event held every year in November in the Greater London area, namely The World Travel Market (WTM) (london.wtm.com).

A random sampling method was employed, and the extracted advertisements were geolocated as reported: Balham, London, United Kingdom (68%); London (19.45%); Chelsea, London, United Kingdom (3.47%); Hammersmith, London, United Kingdom (3.47%); Greenwich, London, United Kingdom (2.88%); and Fitzrovia, London, United Kingdom (2.73%). A concentration map of the extracted advertisements per borough is shown in Figure 1.

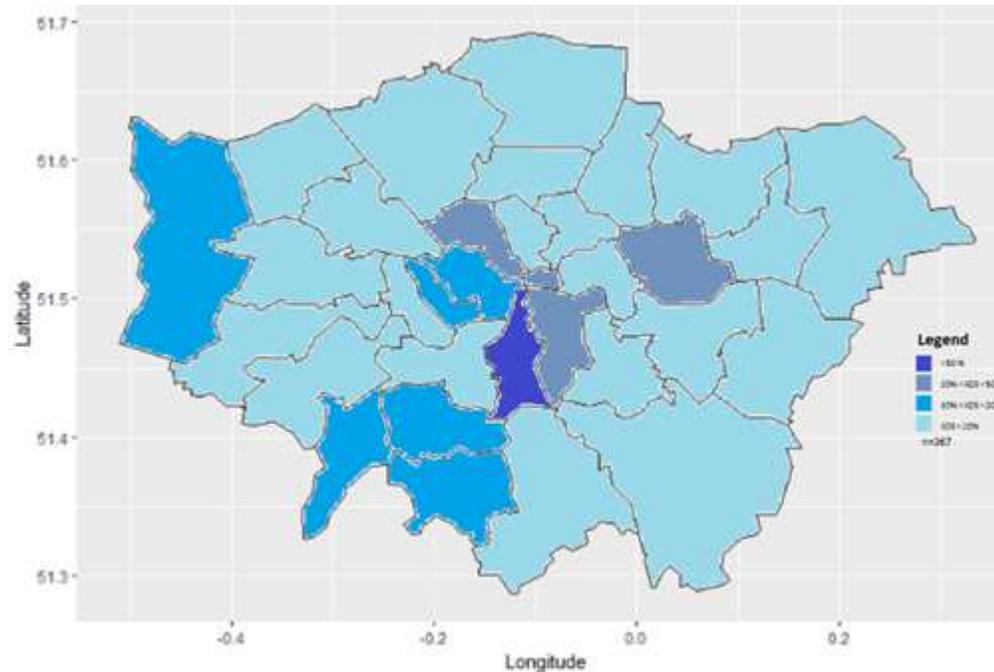


Figure 1. Concentration map of advertisements.
Source: Authors' elaboration.

Table 1. Independent variables.

Variables	Definition	Literature references
Host's price per night (€)	Providing "website housing" service to other firms or persons for a certain income	Gutt and Herrmann (2015)
Host's position in Airbnb ranking	On the Internet, marketing is the position of a pay-per-click (PPC) ad on a search engine results page (SERP)	Zervas et al. (2015)
Total number of evaluations of the host on Airbnb	This means that the more listing reviews rank at the top of Airbnb, the more are the opportunities to book.	Zervas et al. (2015)
Number of guests the host can host	The number of people who can be hosted in an apartment.	Guttentag (2015)
Availability of the host's photographs	"The more trustworthy the host is perceived to be from his photo, the higher the probability of being chosen."	Ert et al. (2016)
Total number of services provided by the host	The number of services provided by the place booked.	Ferrante (2013)
Host physical accessibility (travel distance from the airport)	The distance pending an available room and the nearest airport measured in minutes.	Lutter et al. (1992)
Number of languages spoken by the host	"This kind of relationships are clearly predicated on an asymmetrical model of communication and thus, the host-tourist relations of power by which tourism is typically organized."	Thurlow and Jaworski (2011)

Data mining was used to verify the possibility of carrying out a Big Data Analysis (BDA) of the data extracted from the Airbnb portal (Chen et al., 2012). Here, a preliminary web scraping test as a digital data extraction technique from a website through software parsing in real time instances wide spreading hyperlinks reality (Munzert et al., 2014) was carried out on a sample of 367 observations and 20 dimensions, recording about 6,500 modalities.

Based on the results, the variables reported in Table 1 were employed in the study.

To extract information from the Airbnb advertisements, a two-step process was followed: 1) The page URLs were identified, and 2) information extracted. The software used for the parsing process was Octoparse (Octoparse, 2018), a data collection application for Linux OSX and Windows, which is useful for extracting and parsing

Table 2. Hypotheses of the study.

S/N	Hypotheses
1	There is a negative relationship between the host's price per night and users' evaluations (reviews)
2	There is a positive relationship between the total number of evaluations related to the host on Airbnb and users' evaluations (reviews)
3	There is a positive relationship between the host position in the Airbnb rankings and users' evaluations
4	There is a positive relationship between the total number of services provided by the host and users' evaluations (reviews)
5	There is a positive relationship between the number of guests the host can host and users' evaluations (reviews)
6	There is a positive relationship between the host's physical accessibility (travel distance from the airport – time in minutes) and users' evaluations (reviews)
7	There is a positive relationship between the number of languages spoken by the host and users' evaluations (reviews)
8	There is a positive relationship between the availability of the host's photographs and users' evaluations

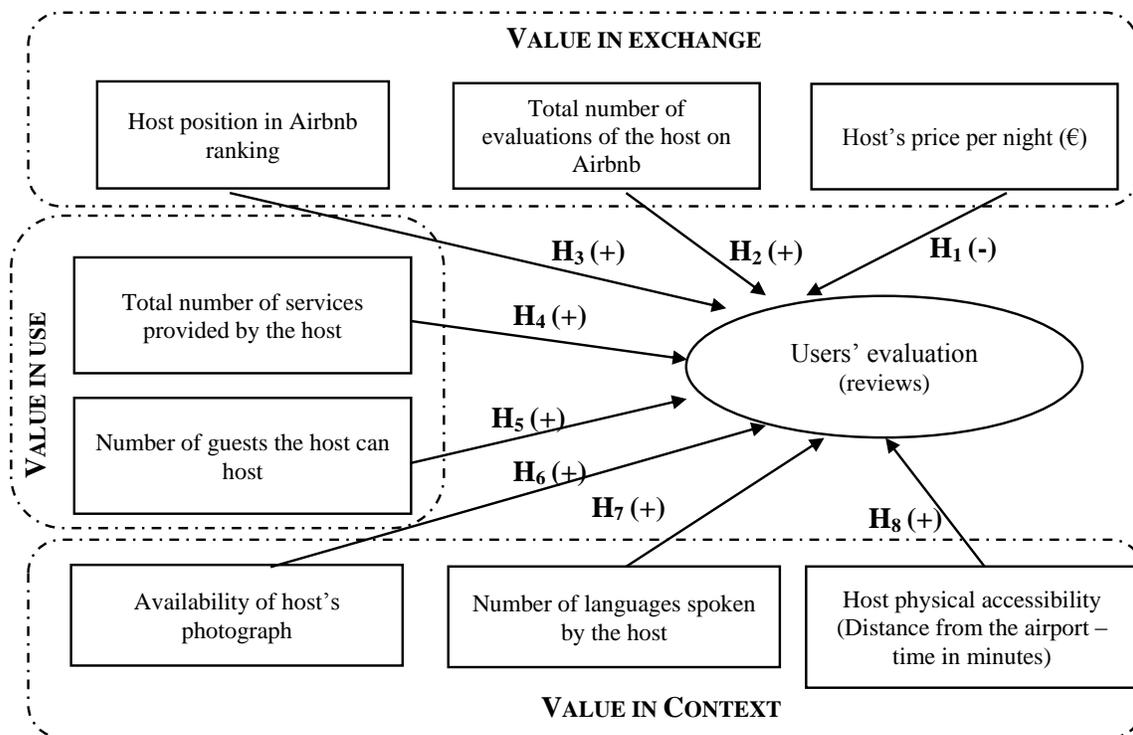


Figure 2. The conceptual model.
Source: Authors' elaboration.

digital content. The extracted data were analyzed using R software (<https://www.r-project.org/>) and IBM SPSS statistics version 22 (Hejase and Hejase, 2013) to test the hypotheses derived from the literature review. SPSS stands for Statistical Package for Social Science or Statistical Package for Social Sciences and is software designed to meet the needs of processing and statistical analysis in various application sectors such as market research and market analysis (<http://spss.com>). In our work, it was used to process the data, calculate the frequency distributions of the variables, reduce factorial dimensions, and test multicollinearity and discriminant validity.

The hypotheses are provided in Table 2. The conceptual model is illustrated in Figure 2.

RESULTS

Internal analysis and evaluation of consistency

An internal analysis was conducted to verify the consistency of the model (Fornell and Larcker, 1981). According to Cronbach and Shavelson (2004), a Cronbach's alpha higher than 0.6 but lower than 0.7 is questionable but acceptable in social studies. Hejase and Hejase (2013) add "Cronbach's alpha may decrease to 0.60 in exploratory research" (p. 570). As reported in

Table 3. Cronbach's alpha.

Cronbach's Alpha	Number of items
0.682	8

Table 4. Pearson correlations.

Parameter	I	II	III	IV	V	VI	VII	VIII
Host's price per night (€)	1.000							
Host's position in Airbnb ranking	0.057	1.000						
Total number of evaluations of the host on Airbnb	-0.237	-0.040	1.000					
Number of guests the host can host	0.886	0.124	-0.307	1.000				
Availability of host's photographs	0.799	0.073	-0.329	-0.307	1.000			
Total number of services provided by the host	0.465	0.090	-0.427	0.757	0.525	1.000		
Host's physical accessibility*	0.193	0.026	0.142	0.679	0.215	0.348	1.000	
Number of languages spoken by the host	0.017	0.036	-0.163	0.105	-0.023	0.086	0.311	1.000

* = Distance from the airport – time in minutes.

Table 5. Fitness indexes.

R	R-Squared	Adjusted R-squared	Std. error of the Estimate	Change Statistics	
				R-Squared Change	F-Change
0.708 ^a	0.501	0.448	12.76	0.501	9.478

Table 3, the model has a Cronbach's Alpha of 0.682.

Results of structural equation modeling

According to Heck and Thomas (2015), after defining the conceptual model and before testing the hypotheses, the correlations of the variables should be analyzed. Weir (2005) explains that Pearson's correlation provides evidence of the existence and intensity of relations among variables. As shown in Table 4, the correlations among variables are acceptable.

The correlations among the study variables were analyzed and the hypotheses tested through the SEM. The results are reported in Figure 3.

Fitness indices

To evaluate the fitness of the model, several fitness indices were calculated including Pearson's product-moment correlation coefficient, R-squared coefficient of determination, and standard error.

As shown in Table 5, the Pearson's product-moment correlation coefficient of the model was .708, indicating a good causal relation (Devlin et al., 1975). The R-squared coefficient of determination was 0.501, demonstrating

good capability to explain the variability of the response data.

Finally, the standard error of the estimate was 12.76. Thus, based on the *R-squared change* and *F-change* estimates as well as the values of the coefficients, the model demonstrates sound goodness-of-fit and can explain the variables under investigation.

Discriminant validity, multicollinearity test, and estimator bias

After conducting the SEM, discriminant validity was verified, estimator bias defined, and the non-presence of multicollinearity confirmed. To analyze the discriminant validity, a factor analysis was conducted to reduce the dimensions and construct a correlation matrix, within which the *average variance extracted* (AVE) and *maximum shared squared variance* (MSV) were compared (Wang and Hsiao, 2013). Since AVE (0.45) was higher than MSV (0.128), discriminant validity was confirmed.

Next, multicollinearity diagnostics were performed to verify the eigenvalues, and the percentage of variance explained for the first three dimensions. The diagnostic results are reported in Table 6.

Table 6. Eigenvalues per dimension with condition indices.

Dimension	Eigenvalue	Condition Index
1	6.901	1.000
2	0.586	3.433
3	0.266	5.097
4	0.114	7.795
5	0.067	10.139
6	0.047	12.159
7	0.020	18.401
8	0.000	196.626

The collinearity diagnostics reported in Table 6 indicate no serious problems with multicollinearity for the first three dimensions and most of the other dimensions according to the condition indices calculated as the square roots of the ratios of the largest eigenvalue to each successive eigenvalue (Wong, 2013). The threshold of 15 (indicating a possible problem with collinearity) was exceeded only for the last two dimensions.

Finally, estimator bias was tested using the standard error method. All the estimators present bias equal to 0.000, which contrary to what the term suggests, does not indicate good consistency (Iacus et al., 2017). However, they were selected because based on the population of Airbnb advertisements and according to the literature review, it was not possible to select other dimensions based on the hypotheses. In addition, working on around 6,500 modalities resulted in an elaborate computation. Thus, the choice of estimators was appropriate for this research.

DISCUSSION

The results of the SEM in Figure 3 indicate a significant negative relationship between the host's price per night and users' evaluations (reviews) (H1). This result is aligned with previous contributions regarding the impact of users' rationality in evaluating providers' propositions (Bendapudi and Berry, 1997; Hansen et al., 2008). Specifically, the negative relationship between price and users' evaluations of a host's proposal can be explained in terms of the impact of subjectivity in the evaluation of the convenience in the relationship with other competitors in the ecosystem (Lawton et al., 1999). Accordingly, a high price usually stimulates high expectations from users, and consequently, an increased opportunity for negative evaluations (Zeithaml, 1988). Other work has produced similar results in terms of price stimulation in the restaurant industry (Han and Ryu, 2009), hotel industry (Wu and Liang, 2009), and destination sector (Yuksel, 2004). In particular, according to Wu and Liang (2009), a restaurant offers a good service worth its price, showing that for digital providers, the perception of a high

price suggests to consumers high-quality service by the operator of the related industry (Li et al., 2018). Interestingly, this result is not consistent with that in a recent study (Cheng and Yin, 2019) based on a big data analysis of Airbnb review comments. The study sought to identify determinants of users' experience, which were identified as location, amenities, and the host. Moreover, the authors reported that the connectivity score of the concept price was less than 2%. It seems to be clear that, notwithstanding that people did not write about price, there is a direct correlation between their judgments and the final quantitative evaluation of the host.

The results of the study also indicate a significant positive relationship between the number of guests the host can host and users' evaluations (reviews) (H5). This result aligns with previous contributions in terms of how users build their perception based on the provider's generally perceived image (Grönroos, 1988). As such, relevant indications for tourism ecosystems can be derived from research on word of mouth (Anderson, 1998; Jalilvand and Samiei, 2012). Moreover, evidence from the study underlines the relevance of the influence of unplanned ways of communication on users' perception (Grönroos, 2000). Other works obtained similar results for product, service, and brand perception of digital providers (Ledhari et al., 2017; Widyastuti and Said, 2017; Han and Hyun, 2017). Thus, this study can represent a reference point in terms of image building and the quality of service provided by the intermediary Internet platform, considering that image building and brand perception are mainly constructed via online communication (Kasemsap, 2017) and influenced by the content of digital travel reviews (Song et al., 2018).

Furthermore, the research indicates a significant positive relationship between the availability of a host's photographs and users' evaluations (H8). These results are tangible evidence of the relevance of non-textual communication in the tourism ecosystem (Collister and Roberts-Bowman, 2018). Acting on users' unconsciousness evaluation, visual communication is a relevant driver for tourism providers (Jansson, 2007). Feighey (2003) provided evidence of the impact of visual communication on users' perceptions and perceived level

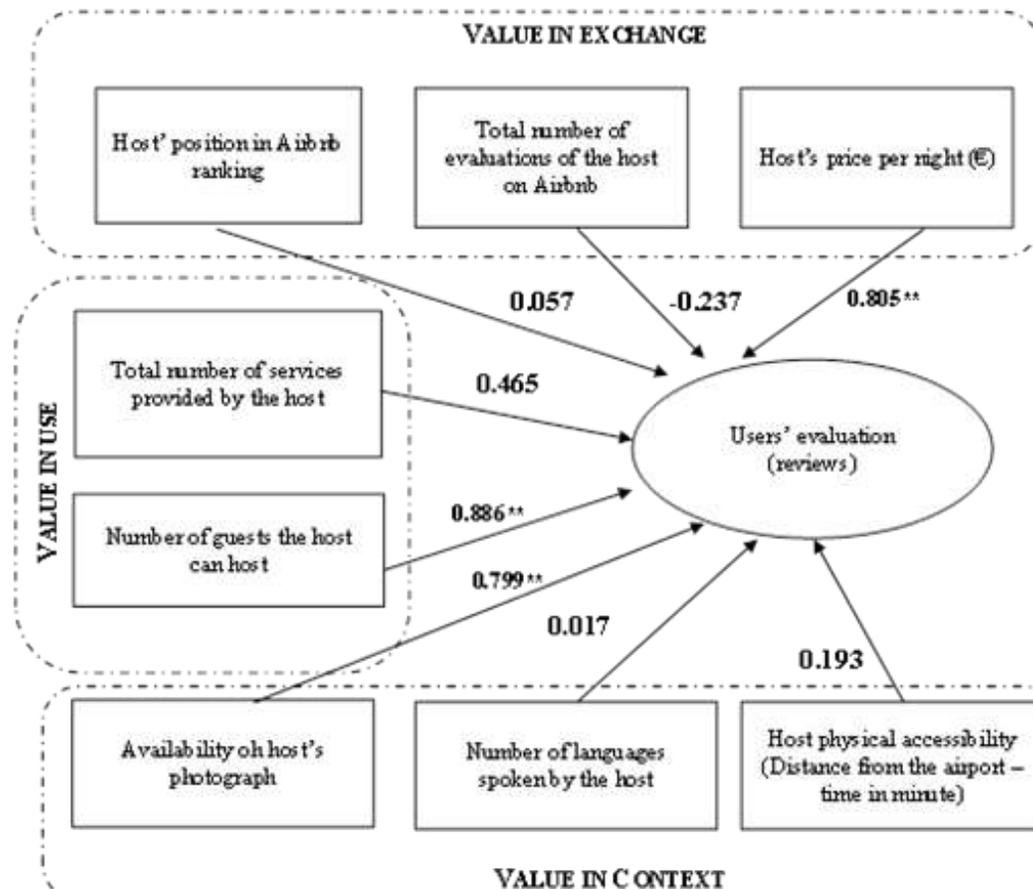


Figure 3. The research model. **Correlation is significant at the 0.01 level (two-tailed). Source: Authors' elaboration.

of satisfaction. Other studies investigated the role of non-textual communication and visual research in the tourism industry (Park and Kim, 2018), exploring the needs of tourists from different countries. The current study bridges the relevance of non-textual communication (as Airbnb's digital advertising) and users' evaluation as a strong consequence of user-generated content (Kapetanaki et al., 2017).

Finally, the research indicates a non-significant relationship between the total number of evaluations related to the host on Airbnb and users' evaluations (reviews) (H2), the host's position in the Airbnb ranking and users' evaluations (H3), total number of services provided by the host and users' evaluations (reviews) (H4), the host's physical accessibility (travel distance from the airport) and users' evaluations (reviews) (H6), and number of languages spoken by the host and users' evaluations (reviews) (H7). These results are partially inconsistent with those of previous managerial studies on users' evaluation processes (Moutinho, 1987; Xiao and Smith, 2007; Veal, 2017), the relevance for users of official peer-to-peer information (Miguéns et al., 2008; Buhalis and Michopoulou, 2011; Caputo et al., 2017a),

and the impact of rationality on users' evaluation processes (Kruchten, 2004). Similar results were obtained in other studies for physical accessibility (related to virtual accessibility) and other components of users' evaluation as indicated in their reviews and activity-travel behavior (Lavieri et al., 2018). Moreover, the number of languages spoken by the host was an important component in the decision-making process regarding accommodation providers in the tourism sector (Pappas and Papatheodorou, 2017).

These results clarify the nature of the tourism ecosystem in which dimensions traditionally considered central for market and social dynamics partially lose their relevance. These results could be interpreted as evidence of the high impact of emotional and unconscious dimensions on users' evaluations of tourism services (Del Giudice et al., 2017a, 2017b).

Conclusions, implications, and future research directions

Reviews, ratings, and reputation systems are important in

the digital marketplace. Indeed, increasing connectivity and reciprocal influence (on which emerging social and economic configurations are based) require rethinking managerial and government approaches (Barile and Saviano, 2010; Hjalager, 2010). Recognizing the relevance of this call for researchers and practitioners, this study focused on ecosystems to investigate value processes and opportunities for combining multiple value dimensions in a common conceptual framework. The tourism service ecosystem and Airbnb were analyzed to investigate the impact of a set of variables related to value in exchange, value in use, and value in context on users' evaluations of a provider.

The reflections herein and empirical results highlight price, number of guests the host can host, and visual communication as key elements affecting users' evaluation. Furthermore, the results emphasize the low significance of variables including previous users' evaluations of the host, ranking of the host, number of services provided by the host, and number of languages spoken by the host, which are usually considered important in increasing users' satisfaction.

The results also elucidate the tourism ecosystem and its strong relationship with the emotional and unconsciousness dimensions of evaluation processes (Kim and Fesenmaier, 2015). As such, several theoretical and practical implications are highlighted. Theoretically, the need to extend studies on the dimensions to employ to measure and evaluate value processes in integrated frameworks emerged. The significant variables identified through the SEM do not belong to the three conceptualization areas of value (in exchange, in use, and in context). An ecosystemic view of the service-dominant logic can contribute to identifying these variables in a specific context based on actors' relationships, resources, and institutions. Moreover, the paper opens the debate on how to summarize and combine the contributions and concepts related to the three conceptualizations of value in a common framework for a holistic view of emerging social and economic dynamics (Barile and Polese, 2010a; Caputo, 2017; Caputo et al., 2018b). Moreover, the practical viewpoint highlights the need to define new approaches and guidelines in tourism management to overcome the reductionist approach of studies inspired by the principle of users' rationality. As such, new instruments and techniques should be defined to measure users' emotional engagement in the tourism sector as a relevant driver for evaluating providers' performance. Recognizing the validity of the reflections herein, this study can be considered the first contribution investigating relationships among the dimensions of value and providing the opportunity to measure them through the definition of shared variables. Other contributions are required to expand the proposed perspective and test the validity thereof through multiple qualitative and quantitative methodologies.

According to Richard et al. (2018), the impact of service quality on customers' perception of the African hotel industry is crucially relevant, demonstrating that service attributes can strongly impact customers' satisfaction.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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