

Peer-To-Peer Accommodation as an Alternative to Hotels: Customers' Motivational Factors, Attitude and Behavioral Intentions

Noha Gamal

Researcher – Hotel Studies Department
Faculty of Tourism and Hotels, Alexandria University, Egypt

Mohamed Nassar

Professor, Hotel Studies Department
Faculty of Tourism and Hotels, Alexandria University, Egypt

Mohamed Kamal

Associate Professor, Hotel Studies Department
Faculty of Tourism and Hotels, Alexandria University, Egypt

Moustafa Elsaqqa

Lecturer, Hotel Studies Department
Faculty of Tourism and Hotels, Alexandria University, Egypt

Abstract

The current research aims to study the concept of sharing economy in the context of peer-to-peer accommodation in Egypt through Airbnb platform and to determine the factors which motivate customers to choose this intended service. The research applied a descriptive quantitative approach. A multiple-frame non-random sampling approach was deemed necessary. Data were collected via an online survey using anonymous link and 353 valid responses from Airbnb`s adult users.

Results indicated the influence of six factors that motivate customers to choose peer-to-peer accommodation; economic benefits, home benefits, social benefits, local authenticity, novelty, and sharing economy ethos. Moreover, customers` attitude was significantly related to behavioral intentions and perceived value proved to be a mediator

between motivating factors and customers` attitude towards peer-to-peer accommodation. Customers` attitude also came out to be a mediator between the motivating factors and behavioral intentions. Derived from the theory of planned behavior (TPB) which is based on the theory of reasoned action (TRA), the current research determined only six motivating factors for participating in peer-to-peer accommodation. Future researches may investigate other factors. The research provides implications for peer-to-peer accommodation providers and for hotel marketers.

Keywords: *Sharing economy, Peer-to-peer accommodation, Airbnb, customers` attitude, motivating factors, behavioral intentions*

1. Introduction

The increase in using peer-to-peer accommodation, as a part of SE represents a recent change in the tourism lodging industry (Möhlmann, 2015; Guttentag et al., 2018). Peer-to-peer accommodation services enable customers to rent out their spare bedrooms or the entire property to tourists. Actually, SE is considered a sustainable business and has long-term benefits for owners and customers (Tussyadiah, 2016; Möhlmann, 2015; Mao et al., 2018). The main phenomenon of locals renting their properties to tourists has existed for centuries, but new technologies and the development of the Internet have renewed this tradition, hence, creating trust and proper communication through the virtual marketplaces (Guttentag et al., 2018).

The most well-known example of lodging SE is Airbnb. Airbnb defines itself as "*a social website that connects people who have space to share with those who are looking for a place to stay*" (Oskam & Boswijk, 2016; Airbnb, 2019; Dogru et al., 2020 (1); Van Doorn, 2020). The company was founded in 2007, launched peer-to-peer lodging business in 2008, since when the company has grown very fast (Quattrone et al., 2016). Airbnb involves a trusted community to look for special accommodation around the world (Birinci et al., 2018). Airbnb has established 34 offices globally in 100 thousand cities around 192 countries (Crommelin et al., 2018; Airbnb, 2019; Van Doorn, 2020).

Airbnb provides a variety of accommodations such as private rooms, entire houses, even castles or a whole island involving intimate interactions with the hosts and the locals in a fine price (Guttentag et al., 2018; Crommelin et al., 2018; Heo et al., 2019). In 2016, more than 100 million travelers used Airbnb, and over 2 million hosts have international listings on Airbnb (Guttentag et al., 2018). The latest update

predicts a significant increase in numbers since the service boasted six million international listings with more than 150 million users (Airbnb, 2019 & 2020).

As hotel accommodations may be expensive for many people due to the difficult economic conditions, the current research considers the topic of peer-to-peer accommodation that may represent a cheap alternative to hotel accommodation; actually, many customers need to save money and seek home accommodation (Uzunca et al., 2018; Guttentag et al., 2018). Since, there is a bit of no research in the area of peer-to-peer accommodation and its relation to the hotel industry in the Arab world, specifically in the Egyptian context. Thus, the current research mainly: (1) investigates customers' attitude towards sharing economy, specifically in peer-to-peer accommodation (Airbnb), (2) explores the motivating factors affecting the customers' behavioral intentions to use such platforms, and (3) examines the role of the customers' perceived value to use such platforms.

2. Literature Review

2.1 Sharing Economy

Sharing economy (SE) is a new innovative system that allows individuals to share underutilized assets and it is also known as *collaborative economy* (Albinsson & Yasanthi, 2012; Belk, 2014; Tussyadiah, 2016). SE companies run connecting business among sellers to share products and services with interested buyers (Tussyadiah, 2016; Uzunca et al., 2018). Some researchers have formulated a definition for collaborative consumption as *a peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services* (Zervas et al., 2015; Hamari et al., 2016; Uzunca et al., 2018). According to Knight and Schor, SE activities are divided into four categories: exchanging services, recirculation of goods, sharing

productive assets, and the increased utilization of durable assets (Knight & Schor, 2014). On that account, it is a combination of social experiment, internet access, and economic approach that is based on the developed information and communications technology (ICT) (Birinci et al., 2018).

Many motivating factors for peers to peer accommodation are discussed in the previous researches (Mcintosh & Siggs, 2005; Sheth et al., 2011; Ramkissoon et al., 2011; Lamberton & Rose, 2012; Trivett & Staff, 2013; Guttentag, 2015; Kim et al., 2015; Bellotti et al., 2015; Tussyadiah, 2015; Hamari et al., 2016; Tussyadiah, 2016; Tussyadiah & Pesonen, 2018; Guttentag et al., 2018; Birinci et al., 2018; Heo et al., 2019; Alrawadieh et al., 2020):

2.1.1 Economic Benefits

Economic benefit is considered a strong motivation for customers towards SE potential rewards as economic benefit has a significant positive effect on customers' attitude towards SE (Hamari et al., 2016). The economic benefit of SE presents an attractive alternative for customers instead of the traditional accommodation (hotels), especially after the global economic crisis (Tussyadiah, 2015). Anyhow, peer-to-peer accommodation prices proved to be low due to the fact that the hosts already have fixed costs for rent and electricity which are definitely covered as hosts normally have another source of income. Further, hosts usually do not hire labors and there is no need for to pay taxes regarding the fact that most of the countries do not have to regulate laws for peer-to-peer accommodation (Trivett & Staff, 2013; Guttentag, 2015; Hamari et al., 2016). The massive variety of choices of peer-to-peer accommodation services with high quality and better prices than hotels makes peer-to-peer accommodation attractive for customers

(Tussyadiah, 2016). Based on the previous statements the following hypothesis is formulated as follows:

H1: There is a significant positive correlation between economic benefits and customers' attitude towards peer-to-peer accommodation.

2.1.2 Home Benefits

In peer-to-peer accommodation, customers can stay in an apartment, a house or even a room; where they still have access to the house amenities; kitchen and refrigerator, as a valuable practice, more than room service in hotels (Guttentag, 2015). Peer-to-peer accommodation enhances the homely feeling for customers and makes them more comfortable than staying in hotels which make them feel like strangers (Guttentag et al., 2018). The homely feel is described as being relaxing, secure, charming, restful and comfortable, as it makes guests feel like they are part of the family not just guests (Mcintosh & Siggs, 2005). This means that the home ambience makes customers feel hostility in someone's home, away from how they feel like in a short rental house (Mcintosh & Siggs, 2005). Staying in a home is associated with a lot of benefits including homely feel, large space and access to home facilities such as washing, drying and ironing machines (Tussyadiah, 2016; Guttentag et al., 2018). Regarding this illustration, the following hypothesis is proposed:

H2: There is a significant positive correlation between home benefits and customers' attitude towards peer-to-peer accommodation.

2.1.3 Social Benefits

Generally, SE enhances the social interactions among individuals; it allows them to share products, services, knowledge and even personal experience (Tussyadiah, 2015). Peer-to-peer accommodation

customers intend to have experience, mainly concentrating on a community full of social atmosphere and local communication that distinguishes between this unique service and the traditional accommodation of tourism (Kim et al., 2015). Social interaction among people motivates them to involve in peer-to-peer interaction websites, which leads them to engage through SNS (social networking sites) (Hamari et al., 2016). In fact, peer-to-peer accommodation depends on the reviews system which creates new standards of trust and reputation (Tussyadiah, 2015). Hence, staying in peer-to-peer accommodation allows travelers to build social relations, and make true friends during their stay (Mcintosh & Siggs, 2005; Kim et al., 2015; Bellotti et al., 2015; Guttentag, 2015; Tussyadiah, 2015; Hamari et al., 2016; Tussyadiah, 2016; Tussyadiah & Pesonen, 2018; Guttentag et al., 2018). Accordingly, another hypothesis is proposed:

H3: There is a significant positive correlation between social benefits and customers` attitude towards peer-to-peer accommodation:

2.1.4 Local Authenticity

Authenticity is conceptualized as the perception of cognitive identification of individuals with the reality of someone, something or someplace (Birinci et al., 2018). Peer-to-peer accommodation allows customers to stay in a local neighborhood and offers them an opportunity to be present in the city center besides staying in local houses; it allows them to live like a local which obviously reinforces their experience in the foreign countries (Birinci et al., 2018). In other words, Peer-to-peer accommodation provides more authenticity than hotels supported with local experience (Ramkissoon et al., 2011; Birinci et al., 2018).

Undoubtedly, customers prefer to stay in peer-to-peer accommodation for the diverse

attributes and cultural experience (Birinci et al., 2018). Of course, authenticity is an essential attribute of tourism motivation which is gained through conducting experience with people, objects or places (Rickly-Boyed, 2013). Authenticity is the main reason for customers to choose to stay in peer-to-peer accommodation during their vacation (Ramkissoon et al., 2011; Rickly-Boyed, 2013; Guttentag, 2015; Birinci et al., 2018). Thus, the following hypothesis is proposed:

H4: There is a significant positive correlation between local authenticity and the customers` attitude towards peer-to-peer accommodation.

2.1.5 Novelty

Novelty is connected with experiencing the different and looking for stimulating motivation. No matter how, novelty-seekers are individuals or groups who desire to try new things, contact with new people, change the routine, experience a different environment and go beyond the traditional rules (Chang et al., 2006; Kim et al., 2015; Tussyadiah, 2015; Tussyadiah & Pesonen, 2018; Guttentag et al., 2018). Indeed, customers prefer to try new brands and look for new trends. They have a clear tendency towards further access for whatever they want (Tussyadiah, 2015). SE is considered an innovative economic activity which attracts customers with novelty desire for trying new things, ideas, products, services and technologies (San Martin & Herrero, 2012; Kim et al., 2015; Tussyadiah, 2015; Tussyadiah & Pesonen, 2018; Guttentag et al., 2018). Thereupon, the current researcher proposes the following hypothesis:

H5: There is a significant positive correlation between novelty and customers` attitude towards peer-to-peer accommodation.

2.1.6 Sharing Economy Ethos

Genuinely, SE ethos includes several elements; increasing the convenience, value of objects and actions, exceeding the sustainability, generating a better community, helping the local economy and protecting the nature (Lamberton & Rose, 2012; Bellotti et al., 2015). Sustainability has a significant positive effect on customers' attitude towards SE (Hamari et al., 2016). Community belonging was found essential for determining elements of SE satisfaction and likelihood of re-using service (Mohlmann, 2015). Engaging in SE generally enhances the idea of being a responsible and active citizen which surely satisfies individual's ideologies and norms (Albinsson & Yasanthi, 2012; Bellotti et al., 2015; Tussyadiah, 2016; Hamari et al., 2016).

Peer-to-peer accommodation also provides a new lifestyle that mainly depends on reducing waste, increasing efficiency and redistributing resources with certain returns with benefits on the environment (Tussyadiah, 2016). SE ethos is proven to be one of the most effective motivational factors for participating in several previous studies (Lamberton & Rose, 2012; Albinsson & Yasanthi, 2012; Bellotti et al., 2015; Mohlmann, 2015; Tussyadiah, 2015; Hamari et al., 2016; Tussyadiah, 2016; Tussyadiah & Pesonen, 2018). This led to proposing the following hypothesis:

H6: There is a significant positive correlation between sharing economy ethos and customers' attitude towards peer-to-peer accommodation.

2.2 Customers' Attitude and Behavioral Intentions

Attitude is identified as the individual's positive or negative evaluation of the advantages or disadvantages of presenting a specific behavior (Jahangir & Begum, 2008; Kim et al., 2018). Customers' attitude

towards a particular company is based on personal preferences, standards and traits besides customers' experience and interaction (Rauniar et al., 2014; Al Hawari, 2015). Customers' attitude includes two major components; individual's attributes and perceived importance of the decision considered (Jahangir & Begum, 2008). Attitude depends on the salient beliefs resulting from the consequences of a certain behavior or the self-evaluation of such beliefs (Jahangir & Begum, 2008).

Behavioral intention is known as stated likelihood to be involved in a specific behavior (Morris & Dillon, 1997; Ryu et al., 2008; Hamari et al., 2016). TRA and TPB have proved that attitude has a significant positive effect on behavioral intentions as attitude influences behavioral intentions before determining the actual behavior in order to shape people's actions (Ajzen, 1991; Morris & Dillon, 1997; Armitage & Conner, 2001; Shih & Fang, 2004; Rauniar et al., 2014; Sharma & Mishra, 2014; Al Hawari, 2015; Tussyadiah, 2016; Hamari et al., 2016; Kim et al., 2018). Hence, the following hypothesis is proposed:

H7: There is a significant positive correlation between customers' attitude towards peer-to-peer accommodation and behavioral intentions to use.

Other earlier researches proved that attitude play a mediating role between many antecedents and intentions; for example, attitude towards social media marketing was found to partially mediate the relationship between utilitarian motivation and online purchase intentions (Irshad and Ahmad, 2019), the attitude was also found to play a mediating role of relationship between product knowledge and ethnocentrism in purchasing intention of community (Juharsah & Hartini, 2014). Moreover, other findings indicated a partial mediation effect of brand attitude between advertising appeal and

brand emotion for purchase intention (Junejo et al., 2022). However, attitude was found to show mediate the relationship between convenience motivation and behavioral intention of Food Delivery Applications' Users (Wiastuti et al., 2022). Therefrom, the following hypothesis is proposed:

H8: There is a mediating role of customers' attitude between motivating factors and behavioral intentions to use peer-to-peer accommodation.

2.3 Perceived Value

Perceived value is defined as customers' overall evaluation for the utility of a service or product through specific perception of what is provided and what is obtained (Gallarza & Saura, 2006; Sanchez et al., 2006; Moliner et al., 2007[1]; Chang & Wang, 2011; Boksberger & Melsen, 2011; Orgev & Bekar, 2013; Varshneya & Das, 2017). Perceived value is a trade-off, or a ratio of the whole benefits obtained to the whole sacrifices. In other words, it is a ratio between the price and quality (Gallarza & Saura, 2006; Gill et al., 2007; Boksberger & Melsen, 2011).

Perceived value has been widely used in customers' behavior researches, marketing researches and service management

(Gallarza & Saura, 2006; Boksberger & Melsen, 2011). Sanchez et al. (2006) proposed GLOVAL as a measure of perceived value in the tourism industry which encompasses three categories; social value, emotional value and functional value (Sanchez et al., 2006; Moliner et al., 2007 [1]; Moliner et al., 2007 [2]; Boksberger & Melsen, 2011; Jamal et al., 2011; Orgev & Bekar, 2013; Zervas et al., 2015; Varshneya & Das, 2017). Therefore, the following hypothesis is proposed:

H9: There is a mediating role of perceived value between motivating factors and customers' attitude towards peer-to-peer accommodation.

3. Methodology

3.1 Study Design

The current research proposed correlations between a set of motivational factors and customers' attitude towards peer-to-peer accommodation H1, H2, H3, H4, H5, H6 (Figure 1). Likewise, the research model adapts the theory of planned behavior (TPB) in the context of customers' attitude towards behavior and behavioral intentions to be used (H7). Perceived value and customers' attitude are also hypothesized to be mediators H8 and H9 (Figure 1).

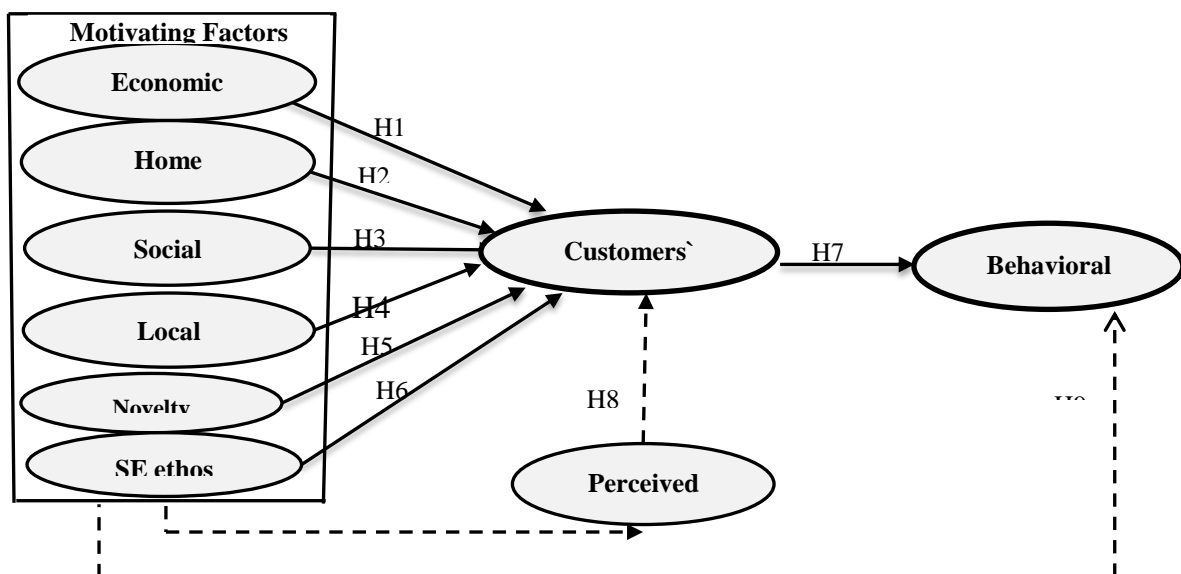


Figure 1. Framework of the study

3.2 Survey Development and Measures

The current research uses a quantitative approach to test the hypotheses. The questionnaire is composed of twenty-six questions and it is divided into four sections: *The first section* contains questions about the demographic characteristics (gender, age, marital status, education, occupation, annual income) and questions about the behavioral characteristics (times and purpose of travel per year, Airbnb accommodation, usual spent nights, periods of using and being in Airbnb host). *The second section* is devoted to measure six motivating factors for using peer-to-peer accommodation. The six motivating factors (Economic benefits, Home Benefits, Social Benefits, Local Authenticity, Novelty, and Sharing Economy Ethos) have been examined through six questions, each question with a different statement with five- point-likert scale. Measurement items of economic benefits, social benefits and sharing economy ethos were adopted from (Tussyadiah, 2016), home benefits; local authenticity and novelty

were adopted from (Guttentag et al., 2018; Gil & Sequera, 2020).

The third section includes two questions to measure customers' attitude and behavioral intentions to use peer-to-peer accommodation. Each question includes three various statements using five- point likert scale. The statements of customers' attitude and behavioral intentions were adopted from (Kim et al., 2018). Finally, *the fourth section* is divided into five questions according to the five dimensions of perceived value [emotional value-experiential value (host-guest interaction) - experiential value (activity, culture & knowledge) - functional value (establishment) - functional value (price)] (Sanchez et al., 2006). Each dimension of the perceived value has verified with one question with different number of statements that were adopted from (Jamal et al., 2011) following the same five- point likert scale. The reliability test (Cronbach's alpha) indicates high reliability for all the research constructs (Table 1).

Table (1) Reliability test (n. of responses= 353)

Measures	N. of Items	Cronbach's Alpha
Motivating Factors	27	.94
Economic Benefits	4	.91
Social Benefits	4	.90
Home Benefits	3	.76
Local Authenticity	5	.87
Novelty	4	.85
Sharing Economy Ethos	7	.89
Customers' Attitude	3	.83
Behavioral Intentions	3	.94
Perceived Value	17	.95
Emotional Value	3	.90
Experiential Value (host-guest interaction)	5	.95
Experiential Value (activity, culture & knowledge)	4	.88
Functional Value (establishment)	3	.77
Functional Value (price)	2	.80

3.3 Data Collection

The questionnaire was distributed via Qualtrics using an anonymous link to capture responses from Airbnb's adult users, starting on the first of December 2020 and ending on 12th of January 2021. A multiple-frame non-random sampling approach was deemed necessary after collecting 17 responses for the pilot study. The majority of respondents were recruited via travel-related Facebook groups based around major Egyptians consisting of thousands of members in each. A handful of other sampling approaches were utilized to further bolster and for the diversity of the sample. These approaches involve publishing invitation messages on travel-themed Facebook pages, travel-themed YouTube channels and on Airbnb focused pages on Facebook and the website of Reddit.

Total of 170 members responded to the private messages and claimed that they have not yet used Airbnb or even heard of it. While 730 members replied to the questionnaire, some of them were not applicable to the age criteria as they are supposed to be adults (above 18 years old). Others didn't finish the questionnaire for undetermined reasons. All the inapplicable responses were removed out of the current research. Thus, only 353 responses were valid with a response rate 48.35%.

4. Results

4.1 Sample Characteristics

Respondents' profiles were divided into two sections; demographic characteristics and behavioral characteristics (Table 2 & 3). Most respondents were males (61.2%). About 55% of respondents were youth with ages ranging from 25 to 40 years. The respondents came from all over the world, but the majority was residents in Egypt (40.5%).

Table (2) Demographic characteristics of respondents (N. of Responses= 353)

Demographic Characteristics	Freq.	%
Gender		
Male	216	61.2
Female	137	38.8
Age		
Less than 25 years old	83	23.5
From 25 to 40 years old	193	54.7
From 41 to 60 years old	61	17.3
Above 60 years old	16	4.5
Marital Status		
Single	219	62.0
Married	94	26.6
Divorced	23	6.5
Widowed	17	4.8
Country of Residence		
Egypt	143	40.5
Middle East & Africa	29	8.2
Europe Countries	121	34.3
Asia & Far East Countries	39	11.0
North & South America and Australia	21	5.9
Education		
High School or Less	50	14.2
Bachelor's Degree	220	62.3
Postgraduate (Master's, PhD, etc....)	68	19.3
Others	15	4.2
Occupation		
Top Management/ Professionals	45	12.7
Supervisory/ Middle Management	87	24.6
Self-employed/ Own Business	91	25.8
Retired	17	4.8
Student	103	29.2
Others	10	2.8
Annual Income		
5000\$ till 8000\$	117	33.1
Above 8000\$ till 10000\$	77	21.8
Above 10000\$ till 14000\$	56	15.9
Above 14000\$ till 20000\$	40	11.3
More than 20000\$	63	17.8

Most respondents (46.7%) revealed that they travel around 2-5 times per year; most of them travel for leisure and usually rent an entire apartment.

Table (3) Behavioral characteristics of respondents (N. of Responses= 353)

Behavioral Characteristics	Frequency	Percent%
Times of Travel per Year		
1 time	139	39.4
2-5 times	165	46.7
More than 5 times	49	13.9
Purpose of Trip (Multiple Choice)		
Business	89	25.2
Convention, conference & event	48	13.6
Leisure	297	84.1
Visiting friends/family	135	38.2
Type of Airbnb Accommodation (Multiple Choice)		
Entire Villa	54	15.3
Entire Apartment	179	50.7
Studio	129	36.5
Private Bedroom	132	37.4
Shared Space	76	21.5
Airbnb Nights Spent		
1 night	15	4.2
2-4 nights	131	37.1
5-7 nights	130	36.8
More than a week	77	21.8
Airbnb Times Used		
1 time	59	16.7
2 times	89	25.2
3-5 times	114	32.3
6-9 times	53	15.0
More than 9 times	38	10.8
Airbnb Host		
No	275	77.9
Yes	78	22.1

4.2 Descriptive Analysis

This part illustrates the descriptive analysis for the current research variables. Those variables include motivating factors, customers' attitude, behavioral intentions and perceived value, which have been explained through frequency, mean, and standard deviation. Motivating factors recorded 4.01 for mean: economic benefits (mean=4.40), home benefits (mean=4.04), social benefits (mean=3.79), local authenticity (mean=3.86), novelty (mean=4.09), sharing economy ethos (mean=3.93). It was noted that economic benefits and novelty recorded the highest means. The other variables recorded high means; customers' attitude (mean=4.38), behavioral intentions (mean=4.55) and perceived value (mean=4.15).

4.3 Testing Hypotheses

Data was analyzed using SPSS and AMOS software tools. Hypotheses were tested using regression analyses among the study variables. Anova results provide the regression analysis for the variables as shown in Figure 2: economic benefits ($R=.526$, P value $< .001$ with 27% variance), home benefits ($R=.478$, P value $< .001$ with 22% variance), social benefits ($R=.587$, P value $< .001$ with 34% variance), local authenticity ($R=.487$ with 23% variance), novelty ($R=.553$, P value $< .001$ with 30% variance), sharing economy ethos ($R=.688$, P value $< .001$ with 47% variance), which supports the hypotheses 1,2,3,4,5,6. Hypothesis 7 also is supported by Anova results as $R= .773$, P value $< .001$ with 59 % of variance. Accordingly, it is clear that sharing economy ethos and Social Benefits have the most variance on customers' attitude among the six factors.

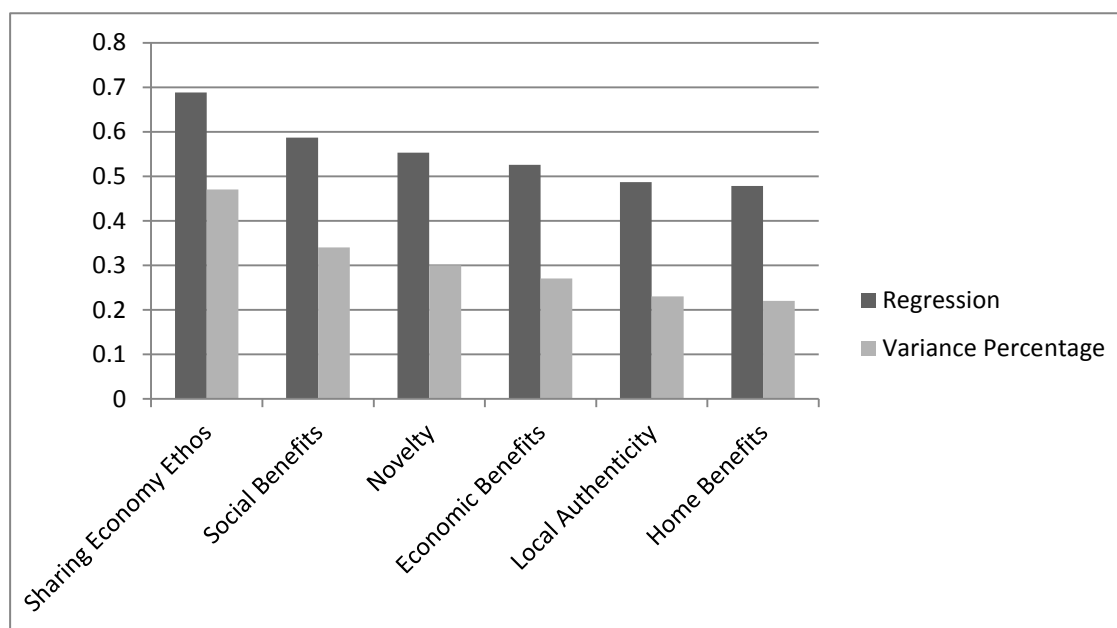


Figure 2. Regression analysis for motivating factors

Bootstrap analysis (Tables 4 & 5) was made to test the mediating roles of customers' attitude and perceived value. The indirect effect between motivating factors and behavioral intentions is .750 with P value .005 which makes customers' attitude a

mediator between them. Also, the indirect effect between motivating factors and customers' attitude is .333 with P value .004 which makes perceived value a mediator between them. Accordingly, hypotheses 8 and 9 are supported.

Table (4) Analysis of bootstrap for customers' attitude

Variables	Total Effect	Direct Effect	Indirect Effect	P
M.F-----C. A	.875	.542	.333	.005
C.A-----B. I	.858	.858	.000	.004
M.F-----B. I	.750	.000	.750	.005

P refers to Probability Level= 0.01 (two-tailed), d.f= 2, chi-square=59.862

Table (5) Analysis of bootstrap for perceived value

Variables	Total Effect	Direct Effect	Indirect Effect	P
M.F-----P. V	.878	.878	.000	.008
P.V-----C. A	.379	.379	.000	.004
M.F-----C. A	.875	.542	.333	.004

P refers to Probability Level= 0.01 (two-tailed), d.f = 2, chi-square=59.862

5. Discussion

Airbnb expanded throughout 192 countries; it is almost available in each single country in the world. For this purpose, Airbnb is regarded as a perfect example of peer-to-peer accommodation platforms which is counted as the alternative accommodation rather than traditional hotels. The current research proposes the existence of significant correlations between a set of motivational

factors in using peer-to-peer accommodation, customers' attitudes and their future intentions to use them. In particular, the current descriptive research used empirical data to test the interrelationships among a variable of the study. Consequently, the mediating role of the perceived value between motivating factors and customers' attitude was proved, and the role of

customers` attitude as a mediator between motivating factors and behavioral intentions was also proved.

Findings of the current research are consistent with previous studies (Mcintosh & Siggs, 2005; Chang et al., 2006; Lee et al., 2007; Sheth et al., 2011; Jamal et al., 2011; San Martin & Herrero, 2012; Lamberton & Rose, 2012; Ricky-boyed, 2013; Couture et al., 2015; Bellotti et al., 2015; Kim et al., 2015; Mohlmann, 2015; Guttentag, 2015; Tussyadiah, 2016; Hamari et al., 2016; Guttentag et al., 2018; Kim, 2018; Tussyadiah & Pesonen, 2018; Birinci et al., 2018).

As for economic benefits; results conform to other studies' results as (Tussyadiah, 2016 & 2018) mentioned before, despite having differences in sampling. In 2016, online survey was used to verify the hypotheses of the research. Economic benefits were one of several motivating factors that have significant positive influence on customers (Tussyadiah, 2016). In 2018, a survey was made specifically for customers in America and Finland and came with the same result (Tussyadiah & Pesonen, 2018).

Alternatively, other studies that supported the same results, such as (Kim et al., 2015; Lamberton, 2012; Mohlmann, 2015). Guttentag (2015) had an online survey of Airbnb`s users and economic benefits which proved that one of the motivating factors significantly influence customers (Guttentag, 2015; Gil & Sequera, 2020). Although, in 2018, he introduced another study which enhanced the idea of accepting the economic benefits and location as the most important motivating factors. The conclusion of his research shows that customers were most strongly attracted to the practical attributes of Airbnb and less attracted to its experiential attributes (Guttentag et al., 2018; Van Doorn, 2020).

However, Hamari et al. (2016) argued about this result as he was not convinced that economic benefits have this much of importance of motivating customers. For him the economic benefits do not have a significant effect on customers` attitude towards peer-to-peer accommodation instead they have a significant positive direct influence on intention to participate in collaborative consumption, in other words, on sharing economy (Hamari et al., 2016).

As for home benefits; Mcintosh and Siggs (2005) has proven the importance of home benefits for customers through interviewing hosts and guests in New Zealand. Another study that supported the same theory was by (Mohlmann, 2015) who proved that home benefits have a significant positive effect on behavioral intention through asking German Airbnb` users.

Tussyadiah (2016) has also proved that home benefits are one of the fundamental motivating factors that influence satisfaction besides enjoyment and economic benefits; it is significant to satisfaction but not necessary to influence intentions to use peer-to-peer accommodation. Still, Guttentag has proved the essential influence of home benefits on customers in his study on Airbnb`s users in 2015 (Guttentag, 2015). Whereas his research in 2018 came up with a different finding as home benefits` variance was 10.8% and proved to be one of the experiential motivations that are generally secondary to the practical attributes of motivating customers towards peer-to-peer accommodation (Guttentag et al., 2018).

Interestingly, there is an undeniable distinction in the importance of social benefits among results. Tussyadiah (2016) argued about the importance of social benefits according to customers` attitude towards peer-to-peer accommodation because his results showed that social

benefits were insignificant, but also, they have a negative effect on intentions to use.

Guttentag et al. (2018) had a different point of view after analyzing his results as social benefits had 38.4% of variance as one of the experiential motivations, but the practical motivation was proven to be the strongest. On the other hand, social benefits did not have this much of importance in his study in 2015. Nonetheless, other authors awarded social benefits considerable importance for its effect on peer-to-peer accommodation's customers. Birinci et al. (2018) in his comparative study regarding the advantages and disadvantages of hotels and peer-to-peer accommodation illustrated that social benefits were significant for customers who would like to interact with hosts and locals.

The same was introduced in Bellotti's study about motivation of using peer-to-peer accommodation as a social connection through interviewing service providers and users of social media (Bellotti et al., 2015). The same method was used by McIntosh and Siggs (2005) in New Zealand and which demonstrated the importance of social benefits on customers. Although Chang and Kim used different methods in collecting data and different samples; Chang studied the responses of tourists in Taiwan and Kim studied Airbnb users'; both agreed on the importance of social benefits (Chang et al., 2006; Kim et al., 2015).

As for local authenticity; it has been reviewed several times in tourism researches and most of them agreed upon its importance. Birinci et al. (2018) confirmed that local authenticity is significant satisfaction predictor for peer-to-peer accommodation which reveals the extent to which local authenticity influence customers' attitude (Birinci et al., 2018). Guttentag (2015) studied local authenticity as one of the motivations for customers to

choose Airbnb from Airbnb's site. Although local authenticity recorded a variance percentage of 5.3% as one of experiential motivations, however, Guttentag argued that the practical attributes (economic benefits, location) are much important (Guttentag et al., 2018).

As for novelty; results have been confirmed by other studies such as Lee's study on Korean travelers in 2007 which proved that highly innovative travelers were influenced by their positive attitude (Lee et al., 2007). San Martin and Herrero (2012) employed focus groups in Spain to prove the importance of novelty. On the other hand, Couture et al. (2015) used questionnaires and website log files to enhance the same result. Innovativeness and novelty are positively related to customers' attitude. Novelty, innovativeness and consumer creativity were highly relevant to consumer behavior. People may travel because they want to experience something new and different (Lee et al., 2007).

Guttentag (2015) determined that the motivating factors of customers' attitude towards peer-to-peer accommodation and novelty were important factors although he reached different results in 2018. Novelty had 8.7% of variance percentage as one of experiential motivation, and the aggregate results indicated that customers were more attracted to practical considerations presented in the economic benefits and location (Guttentag et al., 2018). On the contrary, Mohlmann couldn't reinforce this theory and he proved that novelty is not a significant motivating factor for customers to choose peer-to-peer accommodation (Mohlmann, 2015).

As for sharing economy ethos; while the results may conform to some studies, they might also unconfirm to others. Sharing economy ethos expresses sustainability and

better community as (Bellotti et al., 2015) enhanced through interviewing peer-to-peer accommodation providers and users. Sheth et al. (2011) expressed the same result of the importance of SE ethos through a theoretical study. Although Guttentag chose SE ethos as one of the experiential motivation for using Airbnb with a variance rate 6%, the result showed that practical motivations (economic benefits, location) are the strongest motivations (Guttentag et al., 2018). On the other hand, some researchers could not support the same theory; Mohlmann found them not significant (Mohlmann, 2015). Hamari et al. (2016) proved SE ethos to be significantly related to customers' attitude but within a limited effect.

According to Tussyadiah's study, SE ethos was not significant and was non-effective (Tussyadiah, 2016). This could be an indication that most of the guests do not rely mainly on sharing economy ethos in choosing peer-to-peer accommodation (Tussyadiah, 2016). However, Tussyadiah managed to build a different theory about the importance of SE ethos in 2018 through questioning travelers in USA and Finland about their desire for community and sustainability (Tussyadiah & Pesonen, 2018).

In addition, customers' attitude correlated significantly to behavioral intentions (Shih & Fang, 2004; Lee et al., 2007; San Martin & Herrero, 2012; Hamari et al., 2016; Kim et al., 2018). This correlation has been proved in other studies since the creation of the theory of planned behavior (TPB) in 1985 and updated in 1991 by Ajzen. Lee in his research in 2007 has proved that customers' attitude positively correlated with behavioral intentions (Lee et al., 2007). On the contrast, Hamari et al. (2016) has not supported the theory that admits that customers can say good things about a product or service, even though it does not lead to apparent action.

Perceived value plays a mediating role between motivating factors and customers' attitude (Chang & Wang, 2011; Jamal et al., 2011; Jhandir, 2012; Chen, 2012; Triatmanto, 2016; Wang & Nicolau, 2017). Perceived value has played different roles in tourism studies other than being a principal variable, moderating variable or mediating variable. According to Jamal et al. (2011) who followed a five-dimension approach in their study; perceived value was a main variable important for the community of homestay (Jamal et al., 2011). In other studies, perceived value was the base of various studies as an effective moderator. Customers with a high perceived value show a stronger relationship between satisfaction and customers' loyalty than customers with a low perceived value (Chang et al., 2006).

Wang and Nicolau (2017) proved that there is a significant moderating effect for perceived value (consumer innovativeness) on customers' attitude towards the collaborative consumption services. As a mediating role, perceived value was discussed in several studies with different context. Chen (2012) stated that perceived value is a complete mediator between satisfaction and loyalty for consumer behavior in e-service. Jhandir (2012) also confirmed that perceived value is an important factor in customers' evaluation with a partial mediating role in the service sector. On the contrary, Triatmanto (2016) argued about the importance of the perceived value as a good mediator in a sales context, though the study found that the functional value is not optimal yet to be a major consideration for customers' satisfaction.

Additionally, customers' attitude plays a mediating role between motivating factors and behavioral intentions (Hamin et al., 2018; Saupi et al., 2019; Bananuka et al., 2019; Bouteraa & Al-Aidaros, 2020;

Amawate & Deb, 2021). Customers` attitude has been proved to be a significant mediator between subjective norm and intention; it mediates the relationship between religiosity and intention to adopt Islamic banking (Bananuka et al., 2019). Besides, Bouteraa and Al-Aidaros, (2020) confirmed the mediation effect of attitude in the relationship between religiosity, awareness and influence on the intention to have Islamic will in Malaysia. Findings of two other studies in India are concerned with antecedents and consequences of consumer skepticism toward cause related marketing, confirmed the apparent mediating effect of attitude toward the brand image (Amawate & Deb, 2021). Conversely, Hamin et al. (2018) could not prove the mediating role of customers` attitude towards specific variables, such as share of wallet, was not significantly associated.

6. Conclusion and Implications

6.1 Theoretical Implications

The current research endeavored to generally cover the gap in the scientific researches and to enrich understanding of the concept of SE in the context of peer-to-peer accommodation by uncovering the motivating factors which reinforce customers to choose this intended service. In accordance with the results of the current research, the most effective motivating factor for customers to choose peer-to-peer accommodation proved to be sharing economy ethos. Whereas the lowest effective one is home benefits. Moreover, the current research presents a model that explains the interrelationships among motivating factors, customers` attitude towards peer-to-peer accommodation, behavioral intentions and perceived value as a mediator.

6.2 Managerial Implications

The current research provides implications that could help peer-to-peer accommodation

providers. According to the following implications, they can better understand their customers and modify the offers according to their needs. First, customers seek places not only to stay, but to discover, experience, enjoy, and live like a local, thus, the surrounding area is very important for guests. Hosts also need to offer more interactions with their guests. Second, many customers are more interested in sharing economy ethos such as sustainability, environmental behavior and supporting the local community. Though, it is preferable for them to stay in green houses or just places with environmental standards. Community belonging is also important for new travelers who are supporting the local economy and the locals themselves. Third, economic benefits should be put into consideration since, there are several types of travelers are looking for accommodation according to their criteria specially the side of the cost and the monetary benefits. Fourth, new travelers are looking for innovativeness or authenticity and both have to be the major concern in accommodation marketing. Finally, a lot of customers travel a lot and visit different places around the world. Considerably, Airbnb has to check every single unit before showing it on the site. It takes a lot of effort to provide a suitable unit for a regular customer who is expected to repeat his visit several times.

References

- Airbnb. (2019, July 1). *Airbnb Newsroom*. Retrieved September 29, 2020, from Airbnb: <http://www.airbnb.com>
- Airbnb. (2020, December 25). *Airbnb*. Retrieved December 25, 2020, from Airbnb: <http://www.airbnb.com>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Albinsson, P. A., & Yasanthi Perera, B. (2012). Alternative marketplaces in the 21st century: Building community through sharing events. *Journal of consumer Behaviour*, 11(4), 303-315.

- Al-Hawari, M. A. (2015). How the personality of retail bank customers interferes with the relationship between service quality and loyalty. *International Journal of Bank Marketing*, 33(1), 41-57.
- Alrawadieh, Z., Guttentag, D., Cifci, M. A., & Cetin, G. (2020). Budget and midrange hotel managers' perceptions of and responses to Airbnb. *International Journal of Contemporary Hospitality Management*, 32(2), 588-604
- Amawate, V., & Deb, M. (2021). Antecedents and consequences of consumer skepticism toward cause-related marketing: Gender as moderator and attitude as mediator. *Journal of Marketing Communications*, 27(1), 31-52.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British journal of social psychology*, 40(4), 471-499.
- Bananuka, J., Kasera, M., Najjemba, G. M., Musimenta, D., Ssekiziyivu, B., & Kimuli, S. N. L. (2019). Attitude: mediator of subjective norm, religiosity and intention to adopt Islamic banking. *Journal of Islamic Marketing*, 11(1), 81-96.
- Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of business research*, 67(8), 1595-1600.
- Bellotti, V., Ambard, A., Turner, D., Gossmann, C., Demkova, K., & Carroll, J. M. (2015, April). A muddle of models of motivation for using peer-to-peer economy systems. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1085-1094). ACM.
- Birinci, H., Berezina, K., & Cobanoglu, C. (2018). Comparing customer perceptions of hotel and peer-to-peer accommodation advantages and disadvantages. *International Journal of Contemporary Hospitality Management*, 30(2), 1190-1210.
- Boksberger, P. E., & Melsen, L. (2011). Perceived value: a critical examination of definitions, concepts and measures for the service industry. *Journal of Services Marketing*, 25(3), 229-240.
- Bouteraa, M., & Al-Aidaros, A. H. (2020). The role of attitude as mediator in the intention to have Islamic will. *International Journal of Advanced Research in Economics and Finance*, 2(1), 22-37.
- Chang, H. H., & Wang, H. W. (2011). The moderating effect of customer perceived value on online shopping behaviour. *Online Information Review*, 35(3), 333-359.
- Chang, J., Wall, G., & Chu, S. T. T. (2006). Novelty seeking at aboriginal attractions. *Annals of Tourism Research*, 33(3), 729-747.
- Couture, A., Arcand, M., Sénécal, S., & Ouellet, J. F. (2015). The influence of tourism innovativeness on online consumer behavior. *Journal of Travel Research*, 54(1), 66-79.
- Crommelin, L., Troy, L., Martin, C., & Pettit, C. (2018). Is Airbnb a sharing economy superstar? Evidence from five global cities. *Urban Policy and Research*, 36(4), 429-444.
- [1] Dogru, T., Hanks, L., Mody, M., Suess, C., & Sirakaya-Turk, E. (2020). The effects of Airbnb on hotel performance: Evidence from cities beyond the United States. *Tourism Management*, 79, 104090.
- [2] Dogru, T., Mody, M., Suess, C., Line, N., & Bonn, M. (2020). Airbnb 2.0: Is it a sharing economy platform or a lodging corporation?. *Tourism Management*, 78, 104049.
- Enterprise. (2018, May 2). *Enterprise. Press*. Retrieved July 31, 2019, from Enterprise: <http://www.enterprise.com>
- Gallarza, M. G., & Saura, I. G. (2006). Value dimensions, perceived value, satisfaction and loyalty: an investigation of university students' travel behavior. *Tourism management*, 27(3), 437-452.
- Gil, J., & Sequera, J. (2020). The professionalization of Airbnb in Madrid: Far from a collaborative economy. *Current Issues in Tourism*, 1-20.
- Gill, D., Byslma, B., & Ouschan, R. (2007). Customer perceived value in a cellar door visit: the impact on behavioural intentions. *International Journal of Wine Business Research*, 19(4), 257-275.
- Guttentag, D. (2015). Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector. *Current issues in Tourism*, 18(12), 1192-1217.
- Guttentag, D., Smith, S., Potwarka, L., & Havitz, M. (2018). Why tourists choose Airbnb: A motivation-based segmentation study. *Journal of Travel Research*, 57(3), 342-359.
- Hamari, J., Sjöklint, M., & Ukkonen, A. (2016). The sharing economy: Why people participate in collaborative consumption. *Journal of the association for information science and technology*, 67(9), 2047-2059.
- Hamin, H., Tung, R. L., Baumann, C., & Hoadley, S. (2018). Customers' savings rate and share of wallet: the moderating role of religion and ethnicity/immigrant generation vis-à-vis attitude as mediator. *Journal of Strategic Marketing*, 26(5), 400-416.
- Heo, C. Y., Blal, I., & Choi, M. (2019). What is happening in Paris? Airbnb, hotels, and the Parisian market: a case study. *Tourism Management*, 70, 78-88.

- Jahangir, N., & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African journal of business management*, 2(2), 32-40.
- Jamal, S. A., Othman, N. A., & Muhammad, N. M. N. (2011). Tourist perceived value in a community-based homestay visit: An investigation into the functional and experiential aspect of value. *Journal of Vacation Marketing*, 17(1), 5-15.
- Juharsah & Hartini (2014). The Role of Attitude as Relationship Mediation between Products Knowledge and Ethnocentrism on Purchasing Intention of Buton Special Woven (Study on the City Of Bau-Bau). *International Journal of Business and Management Invention*, 3 (11), 26-34.
- Junejo, I., Sohu, J. M., Aijaz, A., Ghumro, T. H., Shaikh, S. H., & Seelro, A. D. (2022). The Mediating Role of Brand Attitude for Purchase Intention: Empirical Evidence from Fast Food Industry. *Etikonomi*, 21(1), 103-112.
<https://doi.org/10.15408/etk.v21i1.22302>.
- Kim, J., Yoon, Y., & Zo, H. (2015). Why People Participate in the Sharing Economy: A Social Exchange Perspective. *PACIS*, 76.
- Kim, Y. G., Woo, E., & Nam, J. (2018). Sharing economy perspective on an integrative framework of the NAM and TPB. *International Journal of Hospitality Management*, 72, 109-117.
- Knight, K., & Schor, J. (2014). Economic growth and climate change: a cross-national analysis of territorial and consumption-based carbon emissions in high-income countries. *Sustainability*, 6(6), 3722-3731.
- Lamberton, C. P., & Rose, R. L. (2012). When is ours better than mine? A framework for understanding and altering participation in commercial sharing systems. *Journal of Marketing*, 76(4), 109-125.
- Lee, H. Y., Qu, H., & Kim, Y. S. (2007). A study of the impact of personal innovativeness on online travel shopping behavior—A case study of Korean travelers. *Tourism Management*, 28(3), 886-897.
- Mao, Y., Tian, X., & Ye, K. (2018). The real effects of sharing economy: Evidence from Airbnb.
- Martin, C. J. (2016). The sharing economy: A pathway to sustainability or a nightmarish form of neoliberal capitalism?. *Ecological economics*, 121, 149-159.
- McIntosh, A. J., & Siggs, A. (2005). An exploration of the experiential nature of boutique accommodation. *Journal of travel research*, 44(1), 74-81.
- Möhlmann, M. (2015). Collaborative consumption: determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behaviour*, 14(3), 193-207.
- [1] Moliner, M. A., Sánchez, J., Rodríguez, R. M., & Callarisa, L. (2007). Relationship quality with a travel agency: The influence of the postpurchase perceived value of a tourism package. *Tourism and Hospitality Research*, 7(3-4), 194-211.
- [2] Moliner, M. A., Sánchez, J., Rodríguez, R. M., & Callarisa, L. (2007). Perceived relationship quality and post-purchase perceived value. *European Journal of Marketing*.
- Morris, M. G., & Dillon, A. (1997). How user perceptions influence software use. *IEEE software*, 14(4), 58-65.
- Örgöv, C., & Bekar, T. (2013). Non-Monetary costs, hospital perceived value and patient satisfaction in health institutions. *International Journal of Alanya Faculty of Business*, 5(2), 87-97.
- Oskam, J., & Boswijk, A. (2016). Airbnb: the future of networked hospitality businesses. *Journal of Tourism Futures*, 2(1), 22-42.
- Quattrone, G., Proserpio, D., Quercia, D., Capra, L., & Musolesi, M. (2016, April). Who benefits from the sharing economy of Airbnb?. In Proceedings of the 25th international conference on world wide web (pp. 1385-1394). *International World Wide Web Conferences Steering Committee*.
- Ramkissoon, H., Uysal, M., & Brown, K. (2011). Relationship between destination image and behavioral intentions of tourists to consume cultural attractions. *Journal of Hospitality Marketing & Management*, 20(5), 575-595.
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*.
- Rickly-Boyd, J. M. (2013). Existential authenticity: Place matters. *Tourism Geographies*, 15(4), 680-686.
- Ryu, K., Han, H., & Kim, T. H. (2008). The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. *International Journal of Hospitality Management*, 27(3), 459-469.
- San Martín, H., & Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management*, 33(2), 341-350.

- Sanchez, J., Callarisa, L., Rodriguez, R. M., & Moliner, M. A. (2006). Perceived value of the purchase of a tourism product. *Tourism management*, 27(3), 394-409.
- Saupi, N. B., Harun, A., Othman, B., Ali, R. A., & Ismael, D. A. (2019). Does generation y really care about celebrity in their purchase? The role of customer attitude as a mediator. *International Journal of Psychosocial Rehabilitation*, 23(2), 885-898.
- Sharma, R., & Mishra, R. (2014). A review of evolution of theories and models of technology adoption. *Indore Management Journal*, 6(2), 17-29.
- Sheth, J. N., Sethia, N. K., & Srinivas, S. (2011). Mindful consumption: a customer-centric approach to sustainability. *Journal of the Academy of Marketing Science*, 39(1), 21-39.
- Shih, Y. Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet research*, 14(3), 213-223.
- Trivett, V., & Staff, S. (2013). What the sharing economy means to the future of travel (pp. 1-26). *Skift*.
- Tussyadiah, I. P. (2015). An exploratory study on drivers and deterrents of collaborative consumption in travel. *In Information and communication technologies in tourism 2015* (pp. 817-830). Springer, Cham.
- Tussyadiah, I. P. (2016). Factors of satisfaction and intention to use peer-to-peer accommodation. *International Journal of Hospitality Management*, 55, 70-80.
- Tussyadiah, I. P., & Pesonen, J. (2018). Drivers and barriers of peer-to-peer accommodation stay—an exploratory study with American and Finnish travelers. *Current Issues in Tourism*, 21(6), 703-720.
- Uzunca, B., Rigtering, J. C., & Ozcan, P. (2018). Sharing and shaping: A cross-country comparison of how sharing economy firms shape their institutional environment to gain legitimacy. *Academy of Management Discoveries*, 4(3), 248-272.
- Van Doorn, N. (2020). A new institution on the block: On platform urbanism and Airbnb citizenship. *New Media & Society*, 22(10), 1808-1826.
- Varshneya, G., & Das, G. (2017). Experiential value: Multi-item scale development and validation. *Journal of Retailing and Consumer Services*, 34, 48-57.
- Wang, D., & Nicolau, J. L. (2017). Price determinants of sharing economy based accommodation rental: A study of listings from 33 cities on Airbnb.com. *International Journal of Hospitality Management*, 62, 120-131.
- Wiastuti, R.D., Prawira, O., Lusyana, L., Lestari, N.S., Masatip, A., & Ngatemin, N. (2022). The relationship between convenience motivation, attitude, and behavioral intention of food delivery applications' users. *GeoJournal of Tourism and Geosites*, 41(2), 548–554. <https://doi.org/10.30892/gtg.41228-862>
- Zervas, G., Proserpio, D., & Byers, J. W. (2015, June). The impact of the sharing economy on the hotel industry: Evidence from Airbnb's entry into the Texas market. *In Proceedings of the Sixteenth ACM Conference on Economics and Computation* (pp. 637-637). ACM.