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Full Research Paper

Big data analytics for effects of co-creation behavior on value perception in Airbnb

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Abstract: Value perception has gained increasing attention from service management. However, seldom researchers explore the value perception of tourists from the value co-creation behavior perspective in sharing economy environment. Therefore, in this study, we use text mining methods to measure the value co-creation behavior of tourists in the sharing economy and use an econometric model to explore the effects of the value co-creation behavior of tourists on value perception from a co-creation behavior perspective. In our research, we found the value co-creation behavior of tourists has a significant effect on their value perception. In particular, under the amplification effect of the online platform, the personal interaction and advocacy dimensions have a positive significant effect on value perception, while the feedback, information sharing, tolerance, and information-seeking dimensions have a negative effect on value perception. Our study contributes to the research of value co-creation in sharing economy and formulates tourism marketing strategies.

Keywords: Value co-creation behavior; value perception; text mining; tourism management

1. INTRODUCTION

Value perception, which captures consumers' overall evaluation of what is received and what is given ^[1], has been a hot topic in consumer behavior research. The emergence of the sharing economy has caused discussions on the perceived value of tourism ^[2]. In sharing economy, tourists are no longer merely passive recipients of service or products, they can actively participate in the value co-creation of the products or services that they consume through expressing their ideas, experiences, and service expectations in online tourism platforms, which will enable tourists to form and increasing the tourist's sense of value perception of tourism services. When tourists are engaged in value creation, they benefit from it and accumulate positive value perception ^[3]. Existing research highlights tourist perceived value's important role in marketing research and practice ^[4], but there are exist several research gaps. First, although the existing research has done a lot of study about value co-creation and value perception, seldom research has explored the relationship between tourist value co-creation behaviors and value perception. Second, for the measurements of value co-creation behavior, prior research relies on the traditional survey method instead of big data analytics, which is increasingly important in sharing economy.

Therefore, this research attempts to measure the value co-creation behavior of tourists in the sharing economy environment and uses an econometric model to explore the value perception from the value co-creation perspective. The results of the research are helpful to enhance the research of value co-creation and formulate tourism marketing strategies. As a result, our research targets to solve the following questions:

- (1) *How to measure tourists' value co-creation behavior from reviews on the Airbnb platform?*
- (2) *What are the effects of tourists' value co-creation behavior on the value perception of Airbnb services?*

In this study, the co-creation behavior measuring framework based on online reviews analytics can enrich research methods of value co-creation studies. The revealed relationship between tourists' co-creation behaviors and value perception in sharing economy extends interesting dimensions to current value perceptions theories.

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Finally, our results from the econometric modeling are also helpful to formulate marketing strategies for tourism services according to the tourists' value perception.

The rest of the study is organized as follows. Section 2 presents the related literature and hypothesis development. Section 3 shows the method process. Section 4 includes methodology specifications and data descriptions. Empirical results and discussion are presented in Section 5. We conclude this study with implications and limitations in Section 6.

2. LITERATURE REVIEW

2.1 Value perception

Perceived value has been recognized as one of the most important marketing constructs affecting consumers' post-purchase responses and behaviors ^[5]. Although perceived value has received growing attention, researchers seem to hold divergent views and definitions of it. Perceived value has been merely conceptualized as a multi-dimensional construct composed of perceived utility, the relative size of perceived benefits and sacrifice, psychological price, worth, and quality ^[6]. The measurement dimensions of perceived value are mainly divided into functional, cognitive, emotional, social, and conditional value ^[7]. However, perceived value is operationalized in some hospitality literature and marketing literature with a single-item scale that tries to measure overall customer value in terms of 'value of money' ^[8]. McDougall ^[9] proposed to perceive value to be the consumer's overall evaluation of what is received and what is given. Several researchers have indicated a composite essence of perceived value in tourism, depending on the specific study context (e.g. heritage tourism), it plays an important role in tourism marketing ^[1]. Although existing researches have generally achieved remarkable progress in the research of value perception, there are few studies on tourism value perception based on the virtual digital experience from the value co-creation perspective.

2.2 Value co-creation

Value co-creation can be defined as the actions of multiple actors, who are often unaware of each other, that contribute to each other's well-being ^[10], it has been examined in various domains indicating that it has broad theoretical dimensions ^[11]. In the tourism and hospitality context, current literature also emphasizes the importance of value co-creation. Both empirical ^[12] and theoretical insights ^[13] confirm the importance of value co-creation. The role of value co-creation is deemed both critical and complex in the tourism and hospitality context ^[13]. The degree of co-creation has a positive relationship with users' evaluations of new services ^[14] and positively influences their willingness to pay ^[15]. Ross ^[16] emphasize the importance of the co-creation perspective to create memorable creative tourism experiences by utilizing archaeological heritage. According to Yi ^[17], value co-creation behaviors consist of participation behaviors and citizenship behaviors. Participation behavior refers to the behavior necessary for realizing value co-creation, such as information seeking, information sharing, responsible behavior, and personal interaction. Citizenship behavior refers to the spontaneous behavior to enrich the co-creation of the platform, such as feedback behavior, advocacy behavior, helping behavior, and tolerance behavior. When tourists are engaged in value creation, they benefit from it and accumulate positive experiences ^[3]. Tourist participation has a significant effect on perceived value, which is to achieve value co-creation. The effect of tourism experience is mainly measured by tourists' perception or feeling, which is mainly determined by whether the products and services provided by the tourism destination can meet the tourists' physical and psychological or higher-level needs. By participating in value co-creation, tourists can improve their feelings in the tourism experience, meet the needs of tourists at unusual levels, and finally form a good value perception effect in the tourism experience ^[18]. Hence, we hypothesize:

Hypothesis 1 (H1): Tourist value co-creation has a significant effect on value perception.

In an online sharing economy platform, tourists can now share their experiences and give specific

suggestions to others for accommodations. Extant literature has shown that online reviews can be used as a major information source for researchers and practitioners that can help in correctly understanding consumer preferences and demand. Online customer reviews can empower individuals to bypass unclear and inaccurate product or service descriptions and rely directly on the first-hand experiences of other consumers. Large volumes of data, as represented in the continuous stream of UGC over time, provide practical input to argument traditional research methods for identifying important issues. Thus, the online reviews were co-created by tourists, and contained the tourists' attitude about tourism services, such as accommodation. In the sharing economy, value co-creation behavior can be measured from online reviews. Furthermore, each dimension of value co-creation behavior maybe affect the tourist's value perception.

2.2.1 Information seeking behavior

Customers seek information to clarify service requirements and satisfy other cognitive needs ^[19]. Specifically, tourists want information about service status and service parameters. Tourists need information about how to perform their tasks as value co-creators as well as what they are expected to do and how they are expected to perform during a service encounter. Providing this information reduces tourist uncertainty regarding value co-creation with online platforms and hosts. Hence, information seeking is important to tourists for two primary reasons. First, information reduces uncertainty and thereby enables tourists to understand and control their co-creation environments. Second, information seeking enables tourists to master their role as value co-creators and become integrated into the value co-creation process. But, in an online sharing economy platform, tourists actively seeking information reflect that the relative information provided by the platform is insufficient and cannot fully meet the needs of tourists. Thus, we conjecture that:

Hypothesis 2 (H2): Tourist information-seeking behavior has a significant negative effect on the value perception in the online platform.

2.2.2 Information sharing behavior

In the value co-creation process, the information-sharing behavior means tourists provide essential information or requirement to the platform or host, then hosts perform their duties. Through sharing information with a platform or host, tourists can ensure that the enjoying services can meet their particular needs ^[20]. For example, to reserve accommodation, tourists need to inform the host of check-in time and the requirements for facilities. If tourists fail to provide accurate information, the quality of service may be cannot meet their needs. Specifically, tourists usually write their impressive experiences in online reviews. Thus, we conjecture that if information sharing behavior was reflected in the reviews, which means the service provided by the platform or host cannot meet the tourist's demand. Hence, we develop the following hypothesis:

Hypothesis 3 (H3): Tourist information sharing behavior has a significant negative effect on the value perception in the online platform.

2.2.3 Responsible behavior

Responsible behavior occurs when tourists recognize their duties and responsibilities as partial hosts ^[20]. Specifically, tourists feel at home in the process of accommodation in the sharing economy. For successful value co-creation between themselves and platform/host, tourists need to be cooperative, observing rules and policies from platform/hosts. For example, tourists should follow the host's directives, cannot destroy the facilities, and smoke in the accommodation. However, tourists sometimes think that travel is a relaxing experience, too many rules make them feel constrained. Then, they prefer to express the host's rules in the reviews and affect their value perception about the accommodation services. Hence, we conjecture that:

Hypothesis 4 (H4): Tourist responsible behavior has a significant negative effect on the value perception in the online platform.

2.2.4 Personal interaction behavior

Personal interaction refers to interpersonal relations between tourists and hosts, which are necessary for accommodation value perception ^[20]. Furthermore, personal interaction contains courtesy, friendliness, and respect. The more pleasant, congenial, and positive the environment is, the more likely tourists are to perceive value about the accommodation services. Hence, we conjecture that:

Hypothesis 5 (H5): Tourist personal interaction behavior has a significant positive effect on the value perception in the online platform.

2.2.5 Feedback behavior

Feedback includes solicited and unsolicited information that tourists provide to the hosts/platform, which helps hosts/platforms to improve the service creation process in the long run ^[21]. Tourists are in a unique position to offer guidance and suggestions to hosts/platforms because tourists have considerable experience with the service and are experts from the customer's perspective. Hosts/platforms can benefit greatly from tourists' suggestions for better service. Feedback from tourists can be valuable, it can be reflected in the perception value about the services. But the feedback information means the drawbacks or suggestions about the accommodation services. Thus, we conjecture that:

Hypothesis 6 (H6): Tourist feedback behavior has a significant negative effect on the value perception in the online platform.

2.2.6 Advocacy behavior

Advocacy refers to recommending the services to others such as friends or family ^[21]. In the context of sharing accommodation, advocacy through positive word-of-mouth is often an indicator of tourist loyalty, and it contributes greatly to the development of a positive hosts/platform reputation, promotion of the services, higher service quality evaluations, and increase in the tourist base size. Advocacy is completely voluntary, which means a great value perception about the experience service. Hence, we conjecture that:

Hypothesis 7 (H7): Tourist advocacy behavior has a significant positive effect on the value perception in the online platform.

2.2.7 Helping behavior

Helping refers to a tourist's behavior aimed at assisting other tourists. In a service co-creation process, tourists usually direct helping behavior to other tourists, because other tourists in a service encounter may need help behaving in ways consistent with their expected roles ^[21]. They note that tourists recall their own difficult experiences and display a sense of social responsibility to help other tourists experiencing similar difficulties. Thus, when tourists encounter difficulties during their experience service, they will transmit the solutions to help other tourists through online reviews, which means tourists have a bad experience with the services. Hence, we conjecture that:

Hypothesis 8 (H8): Tourist helping behavior has a significant negative effect on the value perception in the online platform.

2.2.8 Tolerance behavior

Tolerance refers to tourists' willingness to be patient when the service delivery does not meet the tourists' expectations of adequate service, as in the case of delays or facilities shortages ^[22]. Because service encounter failure is the second largest cause of tourists switching behavior, which damages market share and profitability of the hosts. In an online platform, once the words about tolerating service defects appear in the reviews, it means that the service does not meet the expectation of tourists. Hence, we conjecture that:

Hypothesis 9 (H9): Tourist tolerance behavior has a significant negative effect on the value perception in the online platform.

3. METHOD

In this study, we design a three-step framework to measure tourists' value co-creation behaviors from online reviews. The first step is data collection. It includes the content of tourists' reviews, publishes dates, and the corresponding rating about Airbnb services. The second step is tourists' value co-creation behaviors measurement. The third step is data analysis. We analyze the effect of value co-creation behaviors on value perception using an econometric model.

3.1 Data sources

Airbnb is one of the largest sharing economies accommodation platforms. Tourists can share their experiences or suggestions by writing reviews. Thus, we developed a web crawler to obtain tourists' reviews. We select the typical two cities of China to perform this research content, including Beijing and Shenzhen. For each review, we obtained that publish date and corresponding rating for this accommodation. The rating contains zero stars to five stars. After collecting the review datasets, we clean data to facilitate construct measurement.

3.2 Data pre-processing

All cleaned reviews are merged into a single text file in the form of one line for each review. The merged file of reviews should generally be further preprocessed for value co-creation behavior measurement in the text preprocessing task. The preprocessing tasks include word segmentation and removing low-frequency words and stop words. For each review with q words, we process it into a word series w_1, w_2, \dots, w_q . We implemented data pre-processing in the python programming environment.

3.3 Measurement

We use the popular ontology dictionary [23] and CLIWC dictionary [24] to measure tourists' value co-creation behaviors. These dictionaries contain abundant sentiment words and psychological words with corresponding categories, it is more convenient to analyze the people's perception. Regarding tourist value co-creation behaviors, we reference Yi and Gong's [17] value co-creation behaviors measurement scale, which classified value co-creation behavior into participation behaviors and citizenship behaviors. Each of the categories contains four dimensions as mentioned in literature reviews. Online review platforms provide a function for the consumer to rate an accommodation as star ratings when consumers perceived value from the accommodation service. The rating range is zero to five stars, the zero-star means a bad experience for the service, and the five stars present a wonderful perception for the accommodation service. Thus, about value perception, we mainly select overall value as the value perception, and the rating for each of the reviews can be regarded as the overall value. For each dimension of value co-creation behaviors, we use a keyword list to represent it, such as the advocacy behavior, the keyword contains "recommend", "tell" etc. Besides, we also use word2vec to produce relative words through computing similarity words of reviews to add the existing dictionary. Thus, we can generate a series of keywords list for each of the dimensions of value co-creation behaviors. Finally, we calculate the number of keywords with each dimension for each review, and it can be used to regard the score of each review in each dimension.

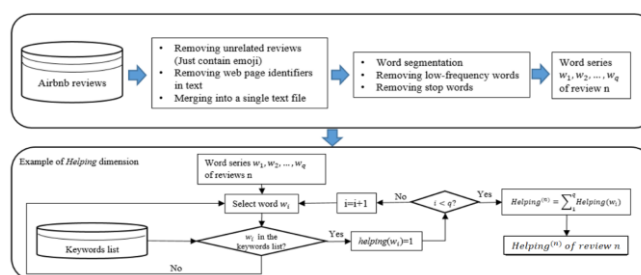


Figure 1. The measurement process for value co-creation behaviors with helping dimension as an example

4. METHODOLOGY AND DATA

4.1 Sampling

We obtained data from the Airbnb platform. Table 1 present the statistical information about the Airbnb reviews. We retrieved reviews for accommodation in Beijing and Shenzhen. The data contain 12,525 reviews for 388 housing resources. The review data included review rating, review date.

Table 1 Descriptive statistics about review datasets.

		Freq	%
City	Beijing	6,584	52.57%
	Shenzhen	5,941	47.43%
	total	12,525	100.00%
Date	2015	7	0.06%
	2016	172	1.37%
	2017	448	3.58%
	2018	1,300	10.38%
	2019	4,757	37.98%
	2020	4,348	34.71%
	2021	1,493	11.92%
	total	12,525	100.00%

4.2 Construct measurement

We obtain the keyword list for each dimension of value co-creation behaviors through the Lin Hongfei dictionary [23], CLIWC dictionary [24], and similarity words generated by word2vec. These are 13 for helping dimension words, 7 for feedback dimension words, 19 for information sharing dimension words, 62 for personal interaction dimension words, 17 for tolerance dimension words, 16 for information seeking dimension words, 25 for advocacy dimension words, and 18 for responsible behavior dimension words. Table 2 shows the example of the keyword for each dimension. We programmed with Python to calculate the score of each dimension of value co-creation behavior for each review according to the calculation process mentioned in section Measurement. The input includes the keywords list and the word series w_1, w_2, \dots, w_q , of reviews n after preprocessing. The output is $helping^{(n)}, feedback^{(n)}, information\ sharing^{(n)}, personal\ interaction^{(n)}, tolerance^{(n)}, information\ seeking^{(n)}, advocacy^{(n)}, responsible\ behavior^{(n)}$. For instance, $helping^{(n)}$ is the number of words associated with the helping dimension in the review n . Each review has the value of each dimension about value co-creation behavior. Table 3 present the descriptive statistics of each dimension of value co-creation behavior.

Table 2 Keywords example for each value co-creation dimension

Dimension	Keyword
Information seeking	search, detail, seek, consultation, inquiry
Information sharing	share, transmit, mutual, initiative, explain
Responsible behavior	compliance, rules, code of conduct, clauses, specification
Personal interaction	amicable, friendly, kind, gentle, warm
Feedback	feedback, suggestions, evaluation, comment, deserve
Advocacy	recommend, advocacy, praise, great,
Helping	help, assist, solve, provide, aid
Tolerance	tolerance, dissatisfaction, claim, doubt, scary

Table 3 Descriptive statistics of each dimension of value co-creation behavior

Construct	Dimension	Mean	S.D	Min	Max	N	
Value co-creation behavior	Participation behavior	Information seeking	0.03	0.20	0	4	12,525
		Information sharing	0.13	0.39	0	8	12,525
		Responsible behavior	0.02	0.20	0	8	12,525
		Personal interaction	0.24	0.56	0	6	12,525
	Citizenship behavior	Feedback	0.05	0.25	0	8	12,525
		Advocacy	0.26	0.56	0	5	12,525
		Helping	0.03	0.20	0	4	12,525
		Tolerance	0.01	0.14	0	5	12,525
Value perception	Overall value	4.89	0.44	0	5	12,525	

4.3 Econometric model

In this case, the value perception is a dependent variable, and it is an order nominal variable. Thus, we employ the ordered logistic regression modeling to explore the relationship between value co-creation behavior and value perception. The independent variable contains helping, feedback, information sharing, personal interaction, tolerance, information seeking, advocacy, responsible behavior. Equation (1) present the regression model. The y_i represents the dependent variable, x_i' represents a vector of independent variables, β is a vector of parameters to be estimated, and ε_i is a vector of white-noise disturbances with a normal distribution.

$$y_i = \begin{cases} 0, & \text{if } y_i^* \leq r_0 \\ 1, & \text{if } r_0 \leq y_i^* \leq r_1 \\ 2, & \text{if } r_1 \leq y_i^* \leq r_2 \\ 3, & \text{if } r_2 \leq y_i^* \leq r_3 \\ 4, & \text{if } r_3 \leq y_i^* \leq r_4 \\ 5, & \text{if } r_4 \leq y_i^* \end{cases} \quad \text{where } y_i^* = x_i' \beta + \varepsilon_i \tag{1}$$

5. RESULT AND DISCUSSION

We present the correlation coefficients of the independent variable as shown in Table 4. We find each pair of variables have a low correlation coefficient, and thus we keep all variables.

Table 4 The correlation coefficient among variables

	Helping	Feedback	Information sharing	Personal interaction	Tolerance	Information seeking	Advocacy	Responsible behavior
Helping	1							
Feedback	0.04	1						
Information sharing	0.21	0.08	1					
Personal interaction	0.14	0.04	0.26	1				
Tolerance	0.03	0.15	0.07	0.01	1			
Information seeking	0.07	0.10	0.21	0.10	0.09	1		
Advocacy	0.04	0.22	0.05	0.10	0.02	0.05	1	
Responsible behavior	0.05	0.07	0.15	0.05	0.21	0.12	0.01	1

Then, we run the ordered logistic regression model, and the results are presented in Table 5. The cutoff points in this model are r_0, r_1, r_2, r_3, r_4 , and $r_0 = -8.045, r_1 = -5.682, r_2 = -5.086, r_3 = -3.726, r_4 = -2.309$.

Table 5 Model results

Star	Coef.(Robust Std. Err)
Helping	-0.073(0.151)
Feedback	-0.735(0.122)***
Information sharing	-0.507(0.087)***
Personal interaction	0.847(0.102)***
Tolerance	-0.874(0.270)***
Information seeking	-0.297(0.156)**
Advocacy	0.815(0.102)***
Responsible behavior	-0.584(0.132)***
Number of Obs.	12,525

Notes: *** Denote significance at 1% respectively. ** Denote significance at 5% respectively. * Denote significance at 10% respectively

On the whole, tourism value co-creation behavior has a significant effect on value perception except the *helping* dimension. The result lends strong support to Hypothesis 1. Helping refers to tourists' behavior aimed at assisting other tourists. But in the Airbnb platform, tourists are each independent and can't communicate with each other conveniently. Therefore, the *helping* dimension is no significant effect on value perception, not supporting Hypothesis 8. The *personal interaction* and *advocacy* dimensions have a positive significant effect on value perception (coef. >0, p-value<0.01). Personal interaction refers to interpersonal relations between tourists and hosts, which includes interactional aspects such as courtesy, friendliness, and respect. Advocacy refers to recommending the accommodation service to others such as friends or family, it often represents tourist's loyalty. Both *personal interaction* and *advocacy* dimensions mean a great consumer experience and have a positive effect on value perception, supporting Hypothesis 5 and Hypothesis 7. The *feedback*, *information sharing*, *responsible behavior*, *tolerance*, and *information-seeking* dimensions have a negative significant effect on value perception (coef. <0, p-value<0.01), supporting Hypothesis 2, Hypothesis 3, Hypothesis 4, Hypothesis 6, Hypothesis 9. Feedback includes solicited and unsolicited information that tourists provide to the hosts, which helps hosts to improve the service quality in the long run. Information sharing refers to tourists should provide resources such as information for use in value co-creation. If tourists do not provide essential information, the hosts cannot even begin or perform their duties. Through sharing information with the hosts, tourists can ensure that hosts provide the service that meets their particular needs. Responsible behavior refers to that tourists need to be cooperative, observing rules from platform/hosts, such as tourists should follow the host's directives, cannot destroy the facilities of rooms. For example, "The room cannot accommodate children, which is very inconvenient". Too many rules make tourists feel constrained, and further affect their value perception about the accommodation services. Tolerance refers to tourists' willingness to be patient when the service delivery does not meet the tourist's expectations of adequate service, as in the case of delays or equipment shortages. In the online platform, once the hosts do not provide satisfying service in time, tourists will have a bad impression of this accommodation. Information seeking aims to clarify service requirements and satisfy other cognitive needs. Providing this information can reduce tourists' uncertainty regarding the service and hosts. Tourists cannot obtain the information they want if the platform and hosts do not public the detailed information. Thus, *feedback*, *information sharing*, *responsible behavior*, *tolerance*, and *information-seeking* dimensions mean a bad and hard consuming experience, and these dimensions of value co-creation behavior have a negative effect on value perception.

We also conduct a robustness check for the results by expanding the sample. Specifically, we obtain Shanghai's reviews from the Airbnb platform, we record the publish date and corresponding rating for these

accommodation services. After pre-processing these data, we calculate the value co-creation behavior scores for each review. Table 6 present the descriptive statistics of each dimension of value co-creation behavior for the Shanghai sample. Compared with Table 3, each variable has a similar distribution.

Table 6 Descriptive statistics of each dimension of value co-creation behavior for Shanghai sample

Construct	Dimension	Mean	S.D	Min	Max	N	
Value co-creation behavior	Participation behavior	Information seeking	0.05	0.27	0	4	10,231
		Information sharing	0.14	0.39	0	5	10,231
		Responsible behavior	0.03	0.18	0	4	10,231
		Personal interaction	0.24	0.56	0	7	10,231
	Citizenship behavior	Feedback	0.05	0.25	0	4	10,231
		Advocacy	0.22	0.52	0	5	10,231
		Helping	0.04	0.23	0	4	10,231
		Tolerance	0.01	0.12	0	3	10,231
Value perception	Overall value	4.84	0.55	0	5	10,231	

Then, we run the ordered logistic regression model based on Shanghai datasets for the robust test, and the results are presented in Table 7. The cutoff points in this model are r_0, r_1, r_2, r_3, r_4 , and $r_0 = -6.296, r_1 = -5.157, r_2 = -4.421, r_3 = -3.369, r_4 = -2.074$.

Table 7 Model results for robust test in Shanghai datasets

Star	Coef.(Robust Std. Err)
Helping	-0.261(0.122)*
Feedback	-0.8335(0.107)***
Information sharing	-0.286(0.085)***
Personal interaction	0.559(0.082)***
Tolerance	-1.134(0.248)***
Information seeking	-0.262(0.108)**
Advocacy	0.453 (0.085)***
Responsible behavior	-0.677(0.121)***
Number of Obs.	10,231

Notes: *** Denote significance at 1% respectively. ** Denote significance at 5% respectively. * Denote significance at 10% respectively

To recap, the robust test result is consistent with Table 5, the result of this study is robust in other cities.

6. CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

In this research, tourists' value co-creation behavior is measured from Airbnb online reviews using the text mining method, we explored the relationship between value co-creation behavior and value perception. According to our experiment results, tourists' value co-creation behavior has a significant effect on tourists' value perception. In particular, the *personal interaction* and *advocacy* dimensions have a positive significant effect on value perception, while the *feedback*, *information sharing*, *responsible behavior*, *tolerance*, and *information-seeking* dimensions have a negative effect on value perception. The reason for this phenomenon may be that the characteristic of amplification effect about the online platform ^[25], the advantage and disadvantage of accommodation service are both prominent. Once the service quality meets tourists' expectations, tourists have a great experience with enjoying service and interacting with the kind hosts. Subsequently, tourists prefer to recommend the service to other people. Otherwise, if service quality has a little

flaw, tourists will choose to complain or not tolerate such service. This process needs tourists to pay more attention to trivial things, thereby tourists have a bad experience and amplify it. Thus, some dimensions of value co-creation behavior have a positive effect on value perception, and others have a negative effect on value perception. In general, the tourist's co-creation behavior has an important effect on value perception. This study also has important implications for tourism researchers and practitioners. First, this study introduces a novel perspective for understanding tourists' value co-creation behavior using a text mining method based on online reviews, it is more efficient and sufficient than the traditional survey-based method. Second, in terms of value co-creation research, this research provides an initial understanding of tourists' value co-creation behavior from sharing economy platforms. It provides a big data analytics perspective for researchers to explore value co-creation relative studies in sharing economy platforms. Third, this research finds the significant relationship between value co-creation behavior and value perception in online platform, and contribute to the influence factors of value perception researches. Besides, in the service business management process, value co-creation is no longer an internalized process but rather an external process. The hosts can adapt the tourist's suggestions and drawbacks of services behind in reviews to improve their service quality.

This study has a few limitations. First, to facilitate statistics, we just select cities in China, other findings may be limited country. Second, we explore the tourists' value co-creation behavior's effect on value perception. But, in reality, the hosts' response also maybe influence the value perception to some extent. Third, in this study, we don't distinguish the type of accommodation, and the characteristic of tourists. In future work, we will collect foreign cites' Airbnb platform reviews in-depth, and get more interesting findings.

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