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Determinants of Customer Satisfaction toward Hotel Industry in Europe: Interaction effect of Demographic Characteristics

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Abstract:

Research Question: The study investigates the factors influencing customer satisfaction in the European hotel industry. Moreover, the study will investigate the interaction effects of satisfaction toward different hotel attributes and demographic characteristics on overall satisfaction in the hotel industry. **Motivation:** Most studies conducted on visitor satisfaction in the hotel industry of Europe have not focused on the interaction effects of satisfaction toward specific hotel attributes and demographic characteristics of the tourists on overall hotel satisfaction. Pragmatic managerial implications are possible with the findings of such interaction effects. **Idea:** The core idea is to examine factors influencing customer satisfaction in Europe's hotel industry. The impact of interaction effects between factors related to hotel and demographic characteristics of the customers on customer satisfaction will also be investigated. **Data:** Secondary data have been collected from the Kaggle website consisting of 100 thousand customer data on hotel satisfaction. **Tools:** Logistic regression analysis, VIF testing, and descriptive statistics were conducted using R software. **Findings:** The results of the study confirm that Common Room Entertainment, Stay Comfort, Check-in and Check-out services, Cleanliness, and Departure/Arrival Convenience can make significant positive contributions to customer satisfaction. Hotel location has a significant positive effect on tourist satisfaction in the male tourist segment. The hotel location also positively affects tourist satisfaction when the tourists make personal travelling rather than group travelling. **Contribution:** This study has been conducted on a large sample to generalize the findings related to factors that contribute to visitor satisfaction in the European hotel industry. The interaction effects of demographic characteristics of the visitors have also been investigated.

Keywords: satisfaction, hotel industry, Europe, logistic regression

JEL Classification: M31, M39

1. Introduction

Customer satisfaction is strongly related to company performance (Robinot & Giannelloni, 2010). Hence, management is very conscious of achieving customer satisfaction (Su, 2004). Prior research has demonstrated that customer satisfaction is a prime issue that can significantly influence hotel performance. Additionally, tourists' expectations of the value they receive from their hotel expenditures are increasing rapidly (Amin et al., 2013).

Barsky and Nash (2003) argue that adaptation to fluctuating consumer demand is imperative for survival in the market. Customers demand high-quality service from the hotel sector (Su, 2004). Consumers of the hotel industry have become more knowledgeable and aware of the tourism service, and management of the hotel service providers cannot focus on low prices only to become successful in the competition (Ryu et al.,

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2012). Highly satisfied consumers become repeat customers and increase the revenue of the hotel. However, dissatisfied customers can circulate negative word-of-mouth advertising, hampering the firm's image. Therefore, hotel operators are focusing seriously on enhancing the customer satisfaction level to maintain the firm's revenue stream (Li et al., 2020; Olsen, 2010).

Most customer satisfaction definitions have focused on confirmation – disconfirmation process (Torres & Kline, 2013). According to Schiffman and Kanuk (2004), satisfaction is the product's perceived performance relative to the expectation. According to Oliver (2010, p. 8), "Satisfaction is the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment." Parker and Mathews (2001) explained satisfaction as a multidimensional issue, and no single definition is enough for satisfaction. The concept of satisfaction is mainly based on evaluating what has been received against expectation.

The hotel industry makes a huge impact to the European economy because of its employment creation and revenue generation. However, the industry is going through a difficult time due to several incidents, such as the COVID-19 pandemic, demand fluctuations, the Brexit issue, etc. (Mobility Foresights, 2021).

Numerous studies have been undertaken to determine the factors influencing tourist satisfaction in the hotel industry (Ekinci et al., 2008; Choi & Chu, 2001; Rhee & Yang, 2015; Li et al., 2020; Ariffin et al., 2018; Liu et al., 2017). Customers utilize different attributes to evaluate the quality of service in the hotel industry (Wilkins et al., 2007; Liu et al., 2017). The tangible and intangible features of the hotels contribute to customer satisfaction. (Ekinci et al., 2008). According to Xu and Li (2016), factors that affect consumers' satisfaction and dissatisfaction with hotels vary and are not equally significant. Using survey data collected from international tourists in Hong Kong, Choi and Chu (2001) demonstrated several hotel features that contribute to consumer satisfaction. They showed that staff service, room quality, and value significantly influence customer delight. Kim et al. (2020) showed that smell and sound sensory marketing can make a strong influence on customer satisfaction in the hotel industry, and customer satisfaction can influence the revisit intention. In order to give guests an emotional experience that will encourage them to pay a higher price, Ali et al. (2016) suggested that hotel managers should appropriately manage the physical environment, employee contact, and other customers. Li et al. (2020) have examined 412,784 consumer-generated online reviews of hotel customers and reported that cleanliness, location, room, service, and value are primary factors, and the absence of those factors can create customer dissatisfaction in luxury hotels. However, in the case of mid-range hotels, cleanliness has been reported as a performance factor by the study. Rhee and Yang (2015) suggested that the importance level of hotel attributes, which are value, location, sleep quality, rooms, cleanliness, and service, can vary when choosing any particular hotel. Socio-demographic characteristics of the customers, such as marital status, age, and income level, can affect the hotel selection process. For instance, married customers can prefer hotels that are appropriate for their kids. Younger customers can focus more on the 'price' factor because many younger customers have no income source and are dependent on their parents (Uca et al., 2017).

The interaction effects of various demographic factors between various independent variables and guest satisfaction have been investigated in various contexts. Kim et al. (2020) showed that prior experience and gender significantly moderate the impact of sensory marketing on customer satisfaction. According to Suki (2014), when assessing their level of satisfaction with a service interaction, men and women seem to react differently.

Several studies have been conducted to investigate the factors influencing tourist satisfaction in the hotel industry by utilizing big data. Radojevic et al. (2015) have conducted a study on 6768 hotels located in 47 capital cities in Europe and demonstrated that an air-conditioned room, a bar within the hotel area, a free Wi-Fi, membership in branded hotel chain, and price have positive relationship with satisfaction. Lee (2020) investigated 200,431 online hotel reviews and reported that service, room, and value evaluations are significant predictors of customer satisfaction. However, those studies have not investigated the impact of interaction effects of satisfaction toward hotel attributes and demographic characteristics on overall hotel satisfaction. Mukhtarom and Prasetyo (2020) explored whether service, cleanliness, location, and comfort significantly affect customer satisfaction in the hotel industry of Yogyakarta city of Indonesia. The study was based on 1090 hotels that were registered on the Traveloka website or application in 2018.

Therefore, the current study will investigate the interaction effects of satisfaction toward different hotel attributes and demographic characteristics on overall satisfaction in the hotel industry. Moreover, the study will investigate the influence of specific hotel-related factors on visitors' satisfaction with hotels to generalize the previous findings. The study will include a few variables that previous studies have not explicitly investigated. The research questions of the study are as follows:

1. Which factors influence customer satisfaction in the European hotel industry?
 - 1a. Does departure/Arrival convenience influence customer satisfaction in the hotel industry?
 - 1b. Does ease of online Booking influence customer satisfaction in the hotel industry?
 - 1c. Does hotel location influence customer satisfaction in the hotel industry?
 - 1d. Does food and drink served by the hotel influence customer satisfaction in the hotel industry?
 - 1e. Does staying comfort influence customer satisfaction in hotel industry?
 - 1f. Does Common room entertainment influence customer satisfaction in hotel industry?
2. Do demographic factors (age, income, purpose of travel) influence customer satisfaction in the hotel industry of Europe?
3. How do the interaction effects between factors related to hotel and demographic characteristics of the customers affect customer satisfaction in the hotel industry in Europe?

2. Methodology

The data are secondary and quantitative. The data have been collected from 'Kaggle,' a popular platform for publishing and reusing datasets on various issues, including consumer responses. This firm allows users to publish datasets, and many datasets of this firm are big data files that are freely available. Many big data files on this site contain data on consumers' perceptual and behavioral responses. This site is well-known among data scientists and the machine learning community because trustworthy data sets are available on this site.

The dataset collected for the study consists of 100 thousand consumer responses on factors related to customer satisfaction in the hotel industry and satisfaction toward the hotel service. The collaborator of the dataset is Singh (2020), and the dataset has 30 upvotes, which signifies the reliability of the dataset. The link to the data file is as follows:

<https://www.kaggle.com/datasets/ishansingh88/europe-hotel-satisfaction-score>

The dataset has a binary satisfaction variable. The satisfaction variable has been coded, and a new variable has been added, where satisfied has been coded with 1 and neutral or dissatisfied has been coded with 0. The new variable has been termed satisfaction coding.

The study is a quantitative analysis of a large data set which has been analyzed with R software (R Core Team, 2021). The study has utilized different statistical tools such as descriptive statistics, VIF for a multicollinearity test, and a logistic regression model to analyze the data. The logistic regression model has been utilized to analyze the dataset where the satisfaction of the customers has been considered a dependent variable, and the factors that influence satisfaction are independent variables. As the dependent variable is nonmetric, the logistic regression/binary regression model has been used in the study. Before running logistics regression, VIF testing has been conducted to identify any significant multicollinearity problem among the independent continuous variables.

3. Results

Table 1 shows the variables in the dataset and their nature. The dataset contains four nonmetric variables: Gender, type of travel, purpose of travel, and satisfaction. Gender, type of travel, and purpose of travel are categorical variables, and satisfaction is a binary variable. The age of the respondents belongs to metric and ratio data. The other variables of the study are metric and continuous variables.

Table 1: Variables of the dataset

Variable name	Variable description	Variable type	Example Values
Gender	Gender of the respondents	Nonmetric, Nominal, categorical variable	Male, Female
Age	Age of the respondents	Metric, ratio, continuous variable	13,25,26
Purpose of Travel	Why the respondents make the travel	Nonmetric, Nominal, categorical variable	Personal, aviation, academic
Type of Travel	How the respondents make the travel	Nonmetric, Nominal, categorical variable	Personal travel, Group Travel
Hotel Wi-Fi service	Perception of the respondents on Hotel Wi-Fi service	Metric, Interval, continuous variable	1, 2, 3
Departure/Arrival convenience	The convenience level of the respondents on departure/arrival	Metric, Interval, continuous variable	1, 2, 3
Ease of Online Booking	The level of easiness on online Booking	Metric, Interval, continuous variable	1, 2, 3
Hotel Location	Perception of the respondents on Hotel Location	Metric, Interval, continuous variable	1, 2, 3
Food and drink	Perception of the respondents on food and drink provided by the hotel	Metric, Interval, continuous variable	1, 2, 3
Stay comfort	Perception of the respondents on comfort in the hotel	Metric, Interval, continuous variable	1, 2, 3
Common room entertainment	Perception of the respondents on common room entertainment	Metric, Interval, continuous variable	1, 2, 3
Cleanliness	Perception of the respondents on cleanliness	Metric, Interval, continuous variable	1, 2, 3
Other service	Perception of the respondents on other services	Metric, Interval, continuous variable	1, 2, 3
Satisfaction	Overall Satisfaction of the customers toward hotel	Nonmetric, Binary variable	1 and 2

Table 2: Summary Statistics of Metric variables

	Mean	Median	Standard Deviation	1st Quartile	3rd Quartile	Min. Value	Max Value
Age	39.38	40.00	15.11	27.00	51	7	85
Departure/Arrival convenience	3.06	3.00	1.53	2.00	4.00	2	5
Ease of Online Booking	2.76	3.00	1.40	2.00	4.00	0	5
Hotel Location	2.98	3.00	1.28	2.00	4.00	0	5
Food and Drink	3.20	3.00	1.33	2.00	4.00	0	5
Stay comfort	3.44	4.00	1.32	2.00	5.00	0	5
Common room entertainment	3.36	4.00	1.33	2.00	4.00	0	5
Cleanliness	3.29	3.00	1.31	2.00	4.00	0	5
Other Service	3.64	4.00	1.18	3.00	5.00	0	5

Table 2 demonstrates the summary statistics of metric variables of the dataset. Stay comfort, common room entertainment, cleanliness, food and drink, and departure/arrival convenience all have a mean value above 3.00. The visitors of European hotel industry are least satisfied with ease of online booking and hotel location as their mean values are below 3.00.

Table 3: Summary Statistics of Categorized data

Variables		Count
Gender	Female	52727
	Male	51177
Type of Travel	Group Travel	71655
	Personal Travel	32249
Type of Booking	Group bookings	49665
	Individual/Couple	46745
Purpose of Travel	Academic	27219
	Aviation	13846
	Business	21238
	Personal	9548
	Tourism	32053
Satisfaction	Neutral or dissatisfied	58879
	Satisfied	45025

Table 3 demonstrates the summary statistics of the categorized variables of the study. The number of female respondents is higher than the number of male respondents. Most of the respondents in the study visited through group travel. However, the booking type is almost the same in number in terms of group booking and individual/couple booking. The purpose of travel shows that most respondents travel for tourism purposes. The respondents' second most important travelling purpose is travelling for academic purposes followed by business, aviation, and personal purposes. The number of neutral/dissatisfied respondents is higher than that of satisfied respondents.

Table 4: VIF testing for Multicollinearity

Variable	$GVIF^{(1/(2 \cdot Df))}$
Departure.Arrival..convenience	1.405086
Ease.of.Online.booking	1.322501
Hotel.location	3.693003
Food.and.drink	2.367077
Stay.comfort	1.349229
Common.Room.entertainment	1.600876
Checkin.Checkout.service	1.057104
Cleanliness	1.513387
Other.service	1.194996
Gender	3.580136
Age	2.569665
purpose_of_travel	3.546711
Type.of.Travel	3.739070
Hotel.location:Age	3.886617
Hotel.location:Gender	2.684111
Hotel.location:purpose_of_travel	2.617154
Hotel.location:Type.of.Travel	2.837481
Food.and.drink:Gender	2.969013
Food.and.drink:Type.of.Travel	2.659039
Food.and.drink:purpose_of_travel	2.848539

The outcome of the VIF testing in Table 4 shows that the VIF values of all the variables are under 4.00, which is generally considered the cut-off value; hence, the variables are not correlated at a high level, which can cause multicollinearity problems for the model.

Table 5: Logistic Regression analysis

Variable	Coefficient	Z value	Standard error	Significance testing	Significance Codes
(Intercept)	-6.0398919	-61.022	0.0989795	< 2e-16	***
Departure.Arrival..convenience	0.0304065	3.979	0.0076409	6.91e-05	***
Ease.of.Online.booking	0.3638921	46.063	0.0078999	< 2e-16	***
Hotel.location	-0.2580649	-10.894	0.0236893	< 2e-16	***
Food.and.drink	-0.0372268	-2.403	0.0154918	0.0163	*
Stay.comfort	0.3153382	34.170	0.0092286	< 2e-16	***
Common.Room.entertainment	0.4374456	39.571	0.0110546	< 2e-16	***
Checkin.Checkout.service	0.3931499	54.885	0.0071632	< 2e-16	***
Cleanliness	0.1580676	15.482	0.0102098	< 2e-16	***
Other.service	0.2894086	32.683	0.0088550	< 2e-16	***
Influence of Demographic factors					
GenderMale	0.0523298	0.875	0.0598328	0.3818	
Age	0.0200899	13.440	0.0014948	< 2e-16	***
purpose_of_travelaviation	0.0376553	0.378	0.0996175	0.7054	
purpose_of_travelbusiness	0.0053658	0.061	0.0874295	0.9511	
purpose_of_travelpersonal	0.0492363	0.431	0.1143212	0.6667	
purpose_of_traveltourism	-0.0867144	-1.097	0.0790294	0.2725	
Type.of.Travel Personal Travel	-1.7766264	-21.796	0.0815107	< 2e-16	***
Interaction effects					
Hotel.locationXAge	-0.0011374	-2.461	0.0004621	0.0138	*
Hotel.locationXGenderMale	0.0258852	2.017	0.0128365	0.0437	*
Hotel.locationXpurpose_of_travelaviation	-0.0127560	-0.590	0.0216343	0.5554	
Hotel.locationXpurpose_of_travelbusiness	0.0090073	0.478	0.0188556	0.6329	
Hotel.locationXpurpose_of_travelpersonal	-0.0033652	-0.135	0.0248901	0.8925	
Hotel.locationXpurpose_of_traveltourism	0.0115084	0.677	0.0170075	0.4986	
Hotel.locationXType.of.TravelPersonal Travel	0.3029669	15.572	0.0194554	< 2e-16	***
Food.and.drink X GenderMale	-0.0135996	-1.024	0.0132778	0.3057	
Food.and.drinkXType.of.TravelPersonal Travel	-0.5696989	-34.420	0.0165514	< 2e-16	***
Food.and.drink X purpose_of_travelaviation	-0.0075928	-0.345	0.0220395	0.7305	
Food.and.drinkX Purpose_of_travelbusiness	-0.0107804	-0.559	0.0192986	0.5764	
Food.and.drinkX Purpose_of_travelpersonal	-0.0044372	-0.177	0.0250902	0.8596	
Food.and.drinkX purpose_of_traveltourism	0.0214908	1.234	0.0174220	0.2174	
Signif. codes: *** (P value below 0.001 significance level), ** (P value below 0.01 significance level), * (P value below 0.05 significance level) AIC: 89509					

The value of AIC in our regression model is 89509. However, at first, the regression model was run except for the demographic and interaction variables, which demonstrated an AIC value of 111279. The regression model with the lowest AIC value is best; hence, hotel-related variables, demographic variables, and variables with interaction effects have been included in the same model.

Our first research question was, "Which factors influence customer satisfaction in the hotel industry of Europe"? Table 5 shows the output of the study's logistic regression analysis, which measures the influence of several essential variables on the satisfaction of tourists.

The significant factors that influence the tourist satisfaction in Europe are: departure and arrival convenience, hotel location, food and drink, comfort, common room entertainment, check in and check out service, cleanliness, and other services.

An unusual finding is that 'hotel location' and 'food and drink' negatively influence customer satisfaction. The coefficient estimate value of hotel location is approximately -0.26; hence, hotel location decreases the satisfaction likelihood by $= 100*(1-\exp(-0.26)) = 23\%$. Food and drink reduces the satisfaction likelihood by $= 100*(1-\exp(-0.04)) = 3.93\%$.

The most influential factor that positively impacts tourists' satisfaction is common room entertainment. The coefficient value of common room entertainment is 0.44; therefore, common room entertainment can increase the likelihood of tourist satisfaction by $= 100*(1-\exp(0.44)) = 55.27\%$.

The second most crucial factor are the check-in and check-out services, and has a coefficient estimate of 0.39. The check-in and check-out services increase the probability of satisfaction by 47.8%.

The ease of online booking, staying comfort, and other services can enhance the probability of tourist satisfaction by 43.33% (estimate=0.36), 36.34% (estimate=0.31), and 34% (estimate = 0.29), respectively.

Our second research question was: **Do demographic factors (age, income, purpose of travel) influence customer satisfaction in the European hotel industry?**

Table 5 shows that 'Age' has a significant positive influence on tourists' satisfaction. The coefficient estimate value of 'Age' is 0.02 which indicates that with the increase of age by 1 year the log odds of satisfaction increase by 0.02.

The types of travel have a negative influence on the satisfaction probability among the tourists, where group travel is the reference group. Therefore, personal travel decreases the probability of the tourists' satisfaction by 83% (coefficient estimates=1.78). Hence, group travelling enhances tourists' satisfaction.

Our third research question was: **How do the interaction effects between factors related to hotel and demographic characteristics of the customers affect customer satisfaction in the hotel industry in Europe?**

As the influence of hotel location and food-drink has showed negative influence on tourist satisfaction, we are interested in measuring the interaction effects between these two factors with other demographic factors. The interaction effect provides quite exciting findings, which are as follows:

- The interaction between hotel location and age has a negative influence on tourists' satisfaction. Hence, the negative influence of hotel location occurs when the age of the tourists is high.
- The interaction effect of hotel location with Gender – male has a positive influence on tourists' satisfaction.
- The interaction effect of hotel location and personal travel is significant and positive. Hence, the influence of hotel location is positive when the tourists undertake personal travelling rather than group travelling.
- The influence of food and drink on tourists' satisfaction is negative when the tourists undertake personal travelling.

Conclusion and Implications

The study has found that common room entertainment, stay comfort, check-in & check-out service, cleanliness, and departure/arrival Convenience can make significant positive contribution to customer satisfaction. However, Hotel Location and food & drink have a negative influence on satisfaction. By analyzing the influence of demographic factors, the study has found that Age (positive) & Personal Travel (negative) have a significant effect on satisfaction. The study has found that there is a positive interaction effect with Male guests & Hotel Location on Satisfaction. Moreover, there are negative interaction effects of Age & Hotel Location, Food and Drink & Personal Travel, and Personal Travel and Hotel Location on Satisfaction.

Several findings of the current study are consistent with prior studies. In previous studies, the common room entertainment, comfort, cleanliness, and convenience of the tourists have been found to be significant in predicting tourists' satisfaction. (Ariffin et al., 2018; Davras & Caber, 2019; Kim et al., 2023; Choi & Chu, 2001; Li et al., 2020). Ariffin et al. (2018) have found that comfort is an essential predictor of guest satisfaction in hotel service. Prior research has showed that comfort can lead to customer satisfaction (Lloyd & Luk, 2011). Davras and Caber (2019) demonstrated that cleanliness and entertainment positively affect guest satisfaction to a significant degree.

The current study has identified several new variables that can significantly affect tourist satisfaction: check-in/check-out service and ease of online booking. However, previous studies found that hotel location and food and drink are significant predictors of tourist satisfaction (Kim et al., 2016; Rhee & Yang, 2015). The current study found that these two factors negatively impact hotel satisfaction. However, the interaction effect of these two factors with demographic variables provides significant findings. Hotel location has a positive influence on satisfaction in the male tourist segment. The hotel location also positively influences satisfaction in the case of personal traveling by tourists.

The study shows that age has a significant positive influence on guest satisfaction. The findings of the previous studies on the influence of demographic factors on customer satisfaction in the hotel industry are mixed (Uca et al., 2017; Maghzi et al., 2011; Martin et al., 2018). Martin et al., (2018) stated that age has a significant influence on guest satisfaction in the hotel industry. Uca et al. (2017) argued that gender and age have significant effects on the hotel selection of tourists. Maghzi et al. (2011) have not found any significant influence of age, but the current study has found that age is a significant factor in satisfaction in the hotel industry.

The study has implications for managers who can enhance the tourists' satisfaction level. This study has identified the factors that have a significant influence on customer satisfaction in the hotel industry. Hence, managers can get a clear picture of which factors are significant in enhancing the satisfaction level of customers. Thus, the study's outcome will certainly help the hotel industry managers improve the hotel's service quality level. Moreover, the study outcome has showed the effect of demographic factors on the satisfaction level of the hotel customers.

The study's findings will allow managers to utilize resources best in order to meet and exceed customer expectations. Common Room Entertainment has the most significant positive relationship with Satisfaction; hence, hotel management can focus on televisions, TV Channels, Movies, Gaming, etc, for a better common room experience. The hotel managers should focus on female customer segments regarding the location of the hotel. The overall influence of hotel location on visitor satisfaction is negative but the influence of hotel location in case of male visitors shows a positive outcome. Therefore, hotel managers should try to identify negative issues that female customers face regarding the location of hotels and respond appropriately to solve those. The hotel authority should focus on check-in and check-out service and online booking service because both demonstrate significant positive influence on satisfaction. The hotel managers must confirm a comfortable atmosphere all over the hotel for the visitors.

Hotel authorities should concentrate on various age segments to enhance the satisfaction level of tourists. The study shows that with the increase in age level the satisfaction level of the tourists enhances. Hence, opinions should be taken from the younger customers regarding their satisfaction with hotel services to pinpoint specific areas where younger customers reveal lower satisfaction levels. Satisfaction of the younger customers is essential to ensure the future success of the firm.

Hotel location has a significant positive effect when customers plan personal travelling. Therefore, the problems of group travelers with hotel locations should be investigated by the hotel authority. The influence of food and drink on tourists who have chosen personal travelling is negative. Therefore, individual travellers are not satisfied with the food and drinks of the hotels. Appropriate measures are needed to ensure an effective food plan for the individual travellers.

Limitations of the Study and Future Research Directions

The study is based on a large dataset, but the data are secondary data. Future research works can be focused on experimental studies that will provide causal effects of the variables. The research has showed the moderating influence of the demographic and hotel related variables, but the mediating impact analysis can provide more information. The study has been focused on the European context, and the findings of the study cannot be generalized to other parts of the world such as Asia, Africa, Latin America, Arab countries, etc. To make the research results more generalized, the study can be replicated in other parts of the world. The study has not found significant effect of a few variables such as purpose of the study on satisfaction. Future studies can focus on extensive studies on such variables and include other critical variables.

The study has several limitations. The dataset has been collected from a secondary database, and whether the data have been collected through probability sampling has not been discussed. Without probability sampling, the sample may not be representative of the population. The dependent variable of the study is binary. The dataset has not categorized neutral and dissatisfied customers. Rather, it has kept neutral and dissatisfied customers in a single column. However, obviously, the neutral and dissatisfied customers are not the same. Future studies can measure the satisfaction variable using a continuous scale.

REFERENCES

- [1] Ali, F., Amin, M., & Cobanoglu, C. (2016). An integrated model of service experience, emotions, satisfaction, and price acceptance: an empirical analysis in the Chinese hospitality industry. *Journal of Hospitality Marketing & Management*, 25(4), 449-475.
- [2] Amin, M., Yahya, Z., Ismayatim, W. F. A., Nasharuddin, S. Z., & Kassim, E. (2013). Service quality dimension and customer satisfaction: An empirical study in the Malaysian hotel industry. *Services Marketing Quarterly*, 34(2), 115-125. DOI: 10.1080/15332969.2013.770665
- [3] Ariffin, A. A. M., Maghzi, A., Soon, J. L. M., & Alam, S. S. (2018). Exploring the influence of hospitality on guest satisfaction in luxury hotel services. *E-review of Tourism Research*, 15(1).
- [4] Barsky, J., & Nash, L. (2003). Customer satisfaction: Applying concepts to industry-wide measures. *Cornell Hotel and Restaurant Administration Quarterly*, 44(5-6), 173-183. DOI: 10.1177/001088040304400523
- [5] Choi, T. Y., & Chu, R. (2001). Determinants of hotel guests' satisfaction and repeat patronage in the Hong Kong hotel industry. *International journal of hospitality management*, 20(3), 277-297. DOI: 10.1016/S0278-4319(01)00006-8
- [6] Davras, O., & Caber, M. (2019). Analysis of hotel services by their symmetric and asymmetric effects on overall customer satisfaction: A comparison of market segments. *International Journal of Hospitality Management*, 81, 83-93. DOI: 10.1016/j.ijhm.2019.03.003
- [7] Ekinci, Y., Dawes, P. L., & Massey, G. (2008). An extended model of the antecedents and consequences of customer satisfaction for hotel services. *European Journal of Marketing*, 42(1/2), 35-68. DOI:10.1108/03090560810840907
- [8] Kim, B., Kim, S., & Heo, C. Y. (2016). Analysis of satisfiers and dissatisfiers in online hotel reviews on social media. *International journal of contemporary hospitality management*, 28(9), 1915-193. DOI: 10.1108/IJCHM-04-2015-0177
- [9] Kim, M., Lee, E., Kim, S. J., Cha, J., & Cichy, R. F. (2023). Impact of indoor environmental quality on hotel guests' behaviors. *International Journal of Hospitality & Tourism Administration*, 24(2), 288-313. DOI: 10.1080/15256480.2021.1981188
- [10] Kim, W. H., Lee, S. H., & Kim, K. S. (2020). Effects of sensory marketing on customer satisfaction and revisit intention in the hotel industry: the moderating roles of customers' prior experience and gender. *Anatolia*, 31(4), 523-535. DOI: 10.1080/13032917.2020.1783692
- [11] Lee, M., Cai, Y., DeFranco, A., & Lee, J. (2020). Exploring influential factors affecting guest satisfaction: Big data and business analytics in consumer-generated reviews. *Journal of Hospitality and Tourism Technology*, 11(1), 137-153. DOI: 10.1108/JHTT-07-2018-0054
- [12] Li, H., Liu, Y., Tan, C. W., & Hu, F. (2020). Comprehending customer satisfaction with hotels: Data analysis of consumer-generated reviews. *International Journal of Contemporary Hospitality Management*, 32(5), 1713-1735. DOI: 10.1108/IJCHM-06-2019-0581
- [13] Liu, Y., Teichert, T., Rossi, M., Li, H., & Hu, F. (2017). Big data for big insights: investigating language-specific drivers of hotel satisfaction with 412,784 user-generated reviews. *Tourism Management*, 59, 554-563. DOI: 10.1016/j.tourman.2016.08.012
- [14] Lloyd, A. E., & Luk, S. T. (2011). Interaction behaviors leading to comfort in the service encounter. *Journal of Services marketing*, 25(3), 176-189. DOI:
- [15] Maghzi, A., Abbaspour, B., Eskandarian, M., & Hamid, A. B. A. (2011, December). Brand trust in hotel industry: Influence of service quality and customer satisfaction. In *2nd International Conference on Business, Economics and Tourism Management*, 24, pp. 42-46.
- [16] Martin, J. C., Sanchez-Rebull, M. V., & Rudchenko, V. (2018). Hotel Guests' Satisfaction: A Segmentation Analysis Based on Age and Gender Using Topsis Fuzzy Methodology. *Fuzzy Economic Review*, 23(2), 63-85. DOI: 10.25102/fer.2018.02.04
- [17] Mobility Foresights. (2021, September 7). *Hotel Industry In Europe 2021-2026 | March 2022 Updated*. Retrieved from:
- [18] Mukhtarom, H., & Prasetyo, A. (2020). Rating Analysis of Service Quality, Comfort, Cleanliness, Food and Location of Hotels in DIY to Customer Satisfaction in Hotel Customers in Traveloka. *International Journal of Multicultural and Multireligious Understanding*, 6(6), 682-692. DOI:
- [19] Oliver, R. L. (2010). *Satisfaction: A Behavioral Perspective on the Consumer*, 2nd ed. M.E. Sharpe: Armonk, NY.
- [20] Olsen, D. (2010, May 21). One negative customer review online can cost you 30 customers. *Dynamic Business*. Retrieved from: <https://dynamicbusiness.com/topics/news/negative-customer-review-online-1562.html>
- [21] Parker, C., & Mathews, B. P. (2001). Customer satisfaction: contrasting academic and consumers' interpretations. *Marketing intelligence & planning*, 19(1), 38-44.
- [22] Radojevic, T., Stanisic, N., & Stanic, N. (2015). Ensuring positive feedback: Factors that influence customer satisfaction in the contemporary hospitality industry. *Tourism management*, 51, 13-21. DOI:

- [23] R Core Team (2021). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from: <https://www.R-project.org/>
- [24] Rhee, H. T., & Yang, S. B. (2015). Does hotel attribute importance differ by hotel? Focusing on hotel star-classifications and customers' overall ratings. *Computers in Human Behavior*, 50, 576-587.
- [25] Robinot, E., & Giannelloni, J. L. (2010). Do hotels' "green" attributes contribute to customer satisfaction? *Journal of Services Marketing*, 24, 157-169. DOI:
- [26] Ryu, K., Lee, H. R., & Kim, W. G. (2012). The influence of the quality of the physical environment, food, and service on restaurant image, customer perceived value, customer satisfaction, and behavioral intentions. *International journal of Contemporary Hospitality Management*, 24(2), 200-223.
- [27] Su, A. Y. L. (2004). Customer satisfaction measurement practice in Taiwan hotels. *International journal of hospitality management*, 23(4), 397-408.
- [28] Suki, N. M. (2014). Moderating role of gender in the relationship between hotel service quality dimensions and tourist satisfaction. *Journal of Quality Assurance in Hospitality & Tourism*, 15(1), 44-62. DOI: 10.1080/1528008X.2014.855104
- [29] Singh, I. (2020). Europe Hotel Satisfaction Score. Available from <https://www.kaggle.com/datasets/ishansingh88/europe-hotel-satisfaction-score> (Accessed on February 25, 2022)
- [30] Schiffman, L. G., & Kanuk, L. L. (2004). *Consumer Behavior*. Pearson Prentice-Hall: Upper Saddle River, NJ.
- [31] Torres, E. N., & Kline, S. (2013). From customer satisfaction to customer delight: Creating a new standard of service for the hotel industry. *International Journal of Contemporary Hospitality Management*, 25(5), 642-659.
- [32] Uca, S., Altintas, V., Tuzunkan, D., & Toanoglou, M. (2017). A study on the effects of demographic factors on hotel selection process. *International Journal of Tourism Sciences*, 17(4), 231-246. DOI: 10.1080/15980634.2017.1383763
- [33] Wilkins, H., Merrilees, B., & Herington, C. (2007). Towards an understanding of total service quality in hotels. *International Journal of Hospitality Management*, 26(4), 840-853. DOI:
- [34] Xu, X., & Li, Y. (2016). The antecedents of customer satisfaction and dissatisfaction toward various types of hotels: A text mining approach. *International journal of hospitality management*, 55, 57-69. DOI: 10.1016/j.ijhm.2016.03.003

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Appendix: R codes

R codes for logistic regression

```
model2=glm(Satisfaction.coding~Departure.Arrival..convenience+Ease.of.Online.booking+Hotel.location+Food.and.drink+Stay.comfort+Common.Room.entertainment+Checkin.Checkout.service+Cleanliness+Other.service+Gender+Age+purpose_of_travel+Type.of.Travel+Hotel.location:Age+Hotel.location:Gender+Hotel.location:purpose_of_travel+Hotel.location:Type.of.Travel+Food.and.drink:Gender+Food.and.drink:Type.of.Travel+Food.and.drink:purpose_of_travel,data = European_hotel_satisfaction,family=binomial)
```