Article

Online Customer Reviews and Satisfaction with an Upscale Hotel: A Case Study of Atlantis, The Palm in Dubai

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Abstract: The main purpose of this study is to explore the insights of customers' reviews from the upscale hotel Atlantis, The Palm in the Dubai area. The data was collected from the SCTM 3.0 (smart crawling and text mining) platform developed by the Wellness & Tourism Big Data Institute at Kyungsung University. A total of 2051 online reviews were collected from the period from 29 October 2018 to 29 October 2021. The following steps were conducted by RStudio and UCINET 6.0 to analyze the collected data and to visualize the results. The results showed the top 50 keywords customers used in the reviews, such as 'great', 'amazing', or 'service'. Exploratory factor analysis (EFA) and linear regression analysis were applied for an in-depth understanding of customer satisfaction. The analysis results demonstrated that the 'value' and 'dining' factors had a negative influence on overall customer satisfaction. These findings could provide managerial and marketing insights for upscale hotel managers when formulating and implementing strategies and tactics to improve customer satisfaction.

Keywords: Dubai tourism; upscale hotels; customer reviews; customer satisfaction; big data

1. Introduction

Dubai, the mysterious Arabian city, the intersection and trading hub of Europe, Africa, the Middle East, and Asia [1]. It has not just oil resources but also many tourism resources and attracts millions of travelers each year [2]. Statistics from the Dubai Annual Report 2019 showed 16.73 million visitors stayed overnight in Dubai in 2019. This figure had increased by 5.3% from 2018 [3]. During the COVID-19 pandemic period, with the dramatic decline of the international tourism market, Dubai still welcomed 5.51 million visitors [4]. It is a widely recognized fact that oil resources on the planet are limited; thus, the Dubai government is actively seeking new development sectors for its future, sustainable economic growth [2]. Tourism has become one of the major economic incomes for the local government in Dubai; according to the Dubai Annual Visitor Report 2019, the tourism sector contributed 11.5% in GDP by the end of the year 2019 [4].

Even though Dubai has long been a famous destination in the world, attracting an inflow of numerous tourists each day, there is a problem that cannot be ignored. There are hundreds of hotels with different stars and different categories in the Dubai area [5] and, since the competition is becoming more and more fierce, it is vital for hotels to differentiate themselves and stand out from competitors. Introducing theme parks, for instance, water parks within upscale hotels could be one of the strategies to attract customers. The study [6] shows that theme parks have an important function in attracting tourists to a certain destination. The Atlantis, The Palm hotel built a popular water park and it was listed as one of the top tourism destinations in Dubai by the TripAdvisor website [5]. It has always been a famous spot since its opening. Since its costly grand opening back in November 2008,

the Atlantis, The Palm hotel has generated attention worldwide and attracted numerous tourists to Dubai [7,8].

Atlantis, The Palm is not only famous for its water park but also for its vast, underwater museum named 'The Lost Chambers Aquarium.' The name of the aquarium is closely related to the myth of Atlantis described by Plato in his book [9]; artificial lost ruins laying down on the bottom of the water tank of the aquarium, illustrating the picture of the lost civilization which sank into the Atlantic Ocean a thousand years ago. The lost Atlantis and Middle Eastern elements combined to bring a mysterious atmosphere to this hotel. Aside from these fantastic water facilities, another special feature of Atlantis, The Palm is its unique location. There are three artificial islands in the Dubai area, the very first one is called 'Palm Jumeirah.' The name is based on the unique shape of the island; it looks like a palm when viewed from the sky [10]. This island is where the Atlantis, The Palm hotel is located. The view from the hotel is incomparable, not only in Dubai but also in the world, which means customers see such views nowhere else, only in Atlantis, The Palm. This hotel provides special room types; the most significant one is the underwater suite that is surrounded by aquarium glass. Guests staying there can enjoy the underwater view with thousands of marine animals and immerse themselves into the sense of living in the real Atlantis—the missing country [8]. The physical environment there is attractive, and the dining service is another attraction for customers. The cultural diversity of Dubai brings plenty of foreign foods to the local area. There are different restaurants and bars open for guests and, among all the restaurants and bars, some are owned and run by celebrities. Location, facilities, dining service, and great views are special advantages for Atlantis, The Palm.

Research using online reviews to assess customer satisfaction in the hospitality field has been increasing recently [11–15]. However, there is limited research using online reviews to conduct customer satisfaction research of upscale hotels with theme parks. Previous studies related to theme parks were mainly focused on theme parks themselves [16–18] or comparisons between different theme parks in a certain area [19]. Hence, there is a lack of studies demonstrating the importance of having theme parks within hotels. In addition, using online reviews is helpful when assessing the precise influencing factors for customer satisfaction. Therefore, it is necessary to study the niche aspect of theme parks in hotels to explore whether building theme parks in upscale hotels is a functional strategy. For the case of Atlantis, The Palm, exploring customer reviews can generate insights that could hardly be achieved from a traditional survey method. Furthermore, whether the water park and related facilities contribute to improved hotel customer satisfaction levels or not is a valuable exploration for both researchers and hotel managers.

The next section presents literature reviews related to this study, followed by a methodology section demonstrating the methods used for conducting this study. The fourth section presents the results from the collected data. The fifth section is the discussion of the results and findings. Lastly, a conclusion of the study sums up major findings and some limitations, and future directions are also suggested.

2. Literature Review

2.1. Dubai Tourism and Upscale Hotels

In the past few years, Dubai has become a hot spot among all the tourism destinations. With the economic development in the Middle East, countries located in the area tend to be seeking higher income service industries such as tourist industries. Forty years ago, Dubai was only relying on fishing, trading, and limited oil resources. The fast economic growth started from the 1970s in the UAE and was closely related to the production and exportation of its oil resources [20]. Dubai, as one of the seven emirates in the UAE, is considered to be an oil-rich area. However, the oil industry accounts for only 7% of the total GDP; thus, high dependence on oil trading is difficult for Dubai [21]. The transformation of Dubai is mainly related to the decrease in its dependence on limited oil resources [22]. During the pandemic, the UAE not only kept attracting international tourists but also tried to

boost its domestic tourism market [23]. The EXPO 2020 was delayed due to the unexpected worldwide pandemic spreading. Nowadays, Dubai is reopening its border lines for tourism with some special regulations made by the local government [24]. According to Langton, Dubai is planning to attract 25 million tourists by the year 2025 [25].

Upscale hotels are 4-star or 5-star hotels [26,27]; the hotel rating system is believed to be connected with the level of its quality, and it has a strong influence on the expectations of customers [28,29]. Furthermore, for many upscale hotels sales, other than room revenues, are strategically important [30]. Statistics show that there were 33,120 rooms in 4-star hotels and 44,133 rooms in 5-star hotels in 2019 in the Dubai area; upscale rooms accounted for about 75.68% of the total hotel rooms in the Dubai area. Compared to the figures from the year 2018, both upscale hotel numbers and hotel rooms had increased dramatically [31]. This indicates the prosperity of upscale hotel development in Dubai.

2.2. Customer Satisfaction and Online Reviews

Since Dubai has shifted its economic focus from oil to the tourism industry, it must follow certain standards in the tourism industry. In the service industry knowing how to attract and obtain customers is critical, and these factors are closely related to customer satisfaction level, which determines a customer's willingness to choose and return to a hotel [32]. In the field of hospitality, researchers are passionately exploring factors, which affect hotel customer satisfaction [11,12,15]. Customer satisfaction can be seen as the difference between expectations and experiences. For example, if customer experiences reach or exceed their expectations, then customers normally are satisfied; if their experiences are below their previous expectations, then it prompts dissatisfied outcomes [33–35]. Kennedy and Schneider indicated that there is a common agreement between management, marketing, and real-life practice on the importance of customer satisfaction, the key factor of success for business [36].

A way that managers can understand the satisfaction levels of customers is through online reviews. Since both customers and business sectors use online reviews during the pre-purchase decision-making process and after-purchase stage, reviewers provide massive online information. Online reviews are also known as electronic word-of-mouth, online recommendations, or online opinion. They are becoming more and more important with the rapid development of technology [37]. Due to the significant development of word-of-mouth communication online, customers use online reviews as the main source of information acquiring [38]. Thus, managing online reviews has brought a new challenge for hotel managers, especially in upscale hotels since their targeted customer groups have higher standards than economic hotel customer groups. Online reviews mainly contain two parts, the textual review part, and the rating part; these two parts are consistent, emotionally [39]. Compared with the rating part, textual reviews reflect more of the true attitudes of customers [40]. Aside from this, the emotional intelligence profile affects tourist satisfaction [41], and tourist products that generate positive emotions for customers increase the satisfaction level [42].

2.3. Big Data Analysis

Big data analysis is a broad concept; it is a term used to describe the massive structured and unstructured information online [43,44]. Sentimental analysis of these massive online data is becoming a popular method of business performance analysis. This technique is used for assessing the feelings of users [45], and it is helpful for managers to obtain an idea of the true feelings of customers.

The rapid technology development has enabled researchers to gain meaningful and insightful information from the unstructured massive online data through sentimental analysis [46]. Sentimental analysis is a relatively new big data approach to conducting hotel customer satisfaction research that has its advantages. For instance, in the past year, customer satisfaction research was mainly conducted through questionnaires [32,34,47,48].

There were some tools used in this study to conduct sentimental analysis: R language and RStudio. They are related but not the same; thus, they must be clearly distinguished before the use [49]. On the GitHub RStudio webpage, R is defined as a programming language that is used for statistical computing, while RStudio is an integrated development environment (IDE) for running the R language. In addition, R language can be used alone, but RStudio must be used along with R language [50].

Borgatti, Freeman, and Everett indicated that UCINET is a computer program, and the UCINET software official website described this tool as designed for analyzing network relationships, especially in social science studies [51]. Hanneman and Riddle introduced the UCINET dataset in their book as a special way of storing datasets. For example, there were two separate files included: file.##h, the named header information dataset, and file.##d containing data lines [52]. UCINET software is used for sentimental analysis by many researchers in the field of hospitality [53–56]. Based on the previous literature, the following hypotheses were formulated:

Hypothesis 1 (H1). *Service has a positive impact on customer satisfaction at Atlantis, The Palm.*

Hypothesis 2 (H2). *Water park facilities have a positive impact on customer satisfaction at Atlantis, The Palm.*

Hypothesis 3 (H3). *Hotel star ratings have a positive impact on customer satisfaction at Atlantis, The Palm.*

3. Methodology

A big data method was chosen to conduct this study mainly due to the limitations that the survey method has in exploring more possibilities. As shown in Figure 1, this study was analyzed through three processes. To assess factors that influence the customer satisfaction level, three years of review data of Atlantis, The Palm was collected from Google Travel on 30 October 2021; the collecting period of reviews was set from 29 October 2018 to 29 October 2021. Data collection was done by a professional data crawling and text mining platform named SCTM 3.0, which stands for Smart Crawling and Text Mining. Data analysis was primarily done by using RStudio to extract the high-frequency words and matrix, and then UCINET was used to analyze the word centrality and CONCOR. Furthermore, the results were also presented using NetDraw, which creates a network diagram visualizing the high-frequency words [51,52]. The results of factor and regression analyses of the data appear in this paper to demonstrate the main factors related to overall customer satisfaction.
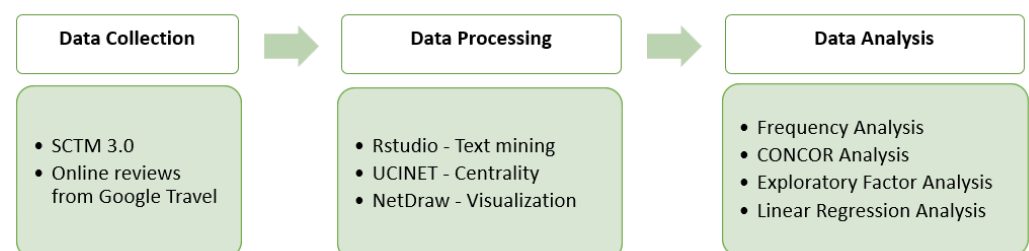
Figure 1. Research procedures.

4. Results

Frequency analysis was carried out on Atlantis, The Palm data collected from the webpage of Google Travel, and the results were turned into a 270 KB data file with 2051 reviews. The top 50 most frequent keywords were extracted from each dataset. There were some repeated words, unnecessary words, and some symbols which misled the results. As a result, these words were deleted from the dataset. Table 1 below shows the top 50 keywords of customer reviews of Atlantis, The Palm.

Table 1. Top 50 keywords of customer reviews of Atlantis, The Palm.

Rank	Word	Freq.	%	Rank	Word	Freq.	%
1	amazing	516	6.884%	26	sea	94	1.254%
2	great	490	6.537%	27	trip	90	1.201%
3	service	451	6.017%	28	expensive	84	1.121%
4	water	382	5.096%	29	clean	84	1.121%
5	experience	373	4.976%	30	fantastic	81	1.081%
6	staff	302	4.029%	31	dinner	75	1.001%
7	family	301	4.015%	32	club	73	0.974%
8	park	292	3.895%	33	facilities	67	0.894%
9	beautiful	291	3.882%	34	helpful	66	0.880%
10	restaurants	281	3.749%	35	island	66	0.880%
11	view	276	3.682%	36	friend	64	0.854%
12	aquarium	250	3.335%	37	property	53	0.707%
13	food	233	3.108%	38	buffet	51	0.680%
14	kid	193	2.575%	39	hospitality	48	0.640%
15	beach	180	2.401%	40	quality	47	0.627%
16	world	158	2.108%	41	entertainment	44	0.587%
17	recommend	149	1.988%	42	incredible	42	0.560%
18	resort	148	1.974%	43	walk	42	0.560%
19	pool	142	1.894%	44	amenities	42	0.560%
20	luxury	115	1.534%	45	spacious	39	0.520%
21	fun	114	1.521%	46	reception	38	0.507%
22	wonderful	112	1.494%	47	covid	38	0.507%
23	activities	110	1.467%	48	price	38	0.507%
24	friendly	102	1.361%	49	front	36	0.480%
25	breakfast	98	1.307%	50	spa	35	0.467%

After the data cleaning process was done, the 50 top keywords were selected to present what the customers of Atlantis, The Palm cared the most about. The results are shown in Table 1. The top 50 keywords of customer reviews of Atlantis, The Palm indicate that customers chose Atlantis, The Palm as their destination mostly for its value, rather than the basic hotel functions there. For instance, the famous, underwater aquarium and on-the-ground water park are very suitable for a family trip. The 5-star-hotel-level service is another reason customers chose this hotel. The visibility rate of the most frequent keyword, 'amazing', accounted for 6.884%, and it appeared 516 times; the reviews seemed to be positive about Atlantis, The Palm. Aside from the entertainment function, their service aspect was also very attractive to customers who went there; 'service' and 'staff' had a 6.017% and 4.029% frequency, respectively, and appeared 451 times and 302 times. Since the data collection included the COVID-19 pandemic period, some customers left reviews about their concerns regarding the virus. High-frequency words demonstrate what customers value the most about a specific hotel. The frequency list mainly consisted of words related to the service and facilities aspects. Figure 2 is the network illustrating the high-frequency words with node size representing the level of effect and lines representing the connections between words.

Table 2 shows the comparison of keyword frequency and centrality rankings. The top three words in the frequency ranking were 'amazing', 'great' and 'service'; the top three words in the degree ranking were 'water', 'service' and 'great'; and the top three words in the eigenvector ranking were 'water', 'park' and 'great'. The word 'water' appeared in the top four in all three categories. It was a vital word among all the words in the customer reviews, even though it ranked fourth on the frequency word list. However, this word ranked top on both the degree and eigenvector lists, which means it had a strong connection with other keywords, and it showed a strong influential effect among all the keywords. The top-ranked word in terms of frequency, 'amazing', only ranked fifth for both the degree and eigenvector lists. Customers felt positive about the hotel, yet this keyword had a limited effect on other keywords. It was more likely to be an independent description word. The

last top keyword, 'spa', ranked 50th on the frequency list; nevertheless, it ranked at 38th and 40th on the degree and eigenvector lists. This result indicates the word 'spa' had a relatively strong relationship or had a relatively high effect on other keywords. This means that customers were concerned about this kind of service in the hotel.
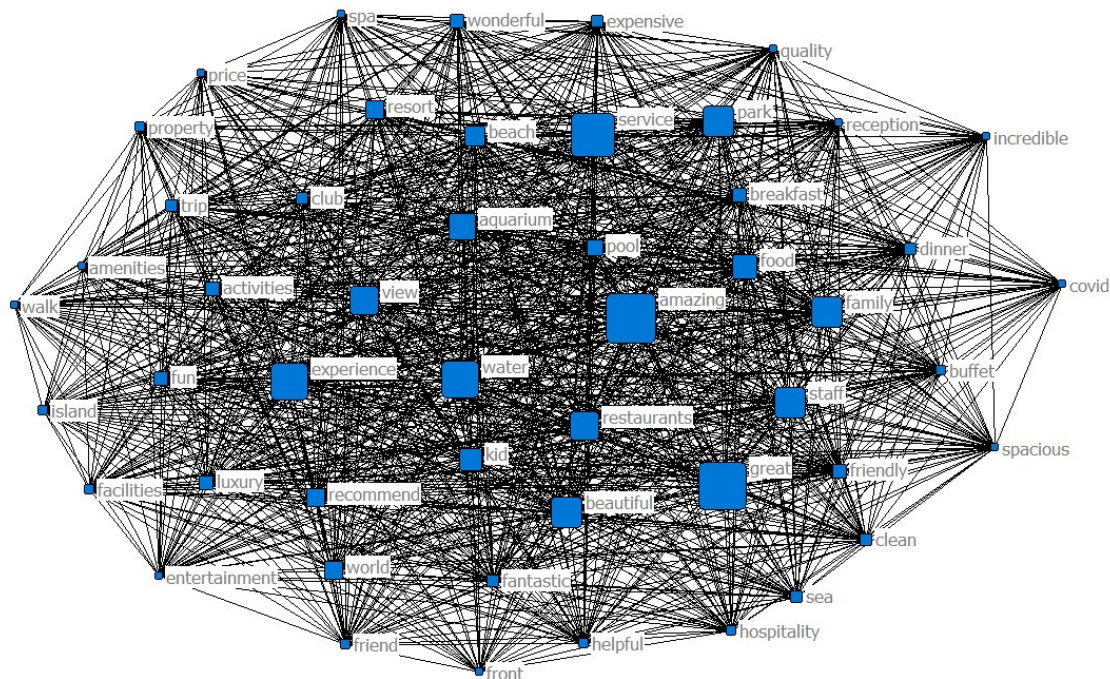

Figure 2. Atlantis, The Palm—keywords visualization of network analysis.

Table 2. Comparison of keyword frequency and centrality analysis.

	Freq.		Degree		Eigenvector			Freq.		Degree		Eigenvector	
Word	Freq.	Rank	Coef.	Rank	Coef.	Rank	Word	Freq.	Rank	Coef.	Rank	Coef.	Rank
amazing	516	1	13.331	5	0.265	5	sea	94	26	3.368	31	0.070	31
great	490	2	13.825	3	0.283	3	trip	90	27	3.862	26	0.085	25
service	451	3	14.549	2	0.283	4	expensive	84	28	2.919	34	0.064	33
water	382	4	15.284	1	0.317	1	clean	84	29	3.994	25	0.085	24
experience	373	5	10.753	8	0.217	7	fantastic	81	30	3.643	28	0.075	29
staff	302	6	10.851	7	0.216	8	dinner	75	31	3.665	27	0.076	27
family	301	7	10.577	9	0.215	9	club	73	32	3.522	29	0.072	30
park	292	8	13.474	4	0.290	2	facilities	67	33	2.864	35	0.059	35
beautiful	291	9	7.867	13	0.162	13	helpful	66	34	3.215	32	0.066	32
restaurants	281	10	12.453	6	0.250	6	island	66	35	2.348	37	0.046	37
view	276	11	8.811	12	0.170	12	friend	64	36	2.633	36	0.057	36
aquarium	250	12	10.171	10	0.213	10	property	53	37	1.920	42	0.038	43
food	233	13	9.710	11	0.199	11	buffet	51	38	3.061	33	0.062	34
kid	193	14	7.615	14	0.158	15	hospitality	48	39	1.799	44	0.039	42
beach	180	15	7.593	15	0.161	14	quality	47	40	2.041	41	0.043	39
world	158	16	5.080	20	0.103	21	entertainment	44	41	1.865	43	0.037	45
recommend	149	17	6.452	17	0.135	17	incredible	42	42	1.372	48	0.031	47
resort	148	18	5.223	19	0.107	19	walk	42	43	1.415	47	0.028	50
pool	142	19	7.011	16	0.150	16	amenities	42	44	2.096	39	0.044	38
luxury	115	20	4.136	24	0.081	26	spacious	39	45	2.041	40	0.041	41
fun	114	21	4.191	23	0.093	23	reception	38	46	1.799	45	0.038	44
wonderful	112	22	3.412	30	0.075	28	covid	38	47	1.350	50	0.030	48
activities	110	23	4.784	22	0.103	20	price	38	48	1.547	46	0.031	46
friendly	102	24	4.817	21	0.101	22	front	36	49	1.361	49	0.029	49
breakfast	98	25	5.519	18	0.109	18	spa	35	50	2.118	38	0.043	40

Figure 3 shows the visualized results of the CONCOR analysis. There are four groups named for the four categories; their names are 'facility', 'service', 'scenery', and 'dining'. To make the result visual, Table 3 lists the significant words from the CONCOR analysis.

The four groups have their characteristics. 'Service' contains words, such as 'trip', 'helpful', 'reception', 'wonderful', 'great', 'service', 'staff ', 'experience', 'hospitality' and 'amazing', which are closely related to the service features. 'Dining' contains words 'breakfast', 'dinner', 'price', 'food', 'buffet', 'spacious', 'clean', 'expensive', 'quality' and 'restaurants', which relate to the hotel dining facilities. 'Scenery' contains 'beach', 'walk', 'sea', 'view', 'beautiful' and 'island', which are words that reflect the scenery of Atlantis, The Palm. 'Facilities' contains 'luxury', 'water', 'park', 'activities', 'aquarium', 'spa', 'club', 'entertainment', 'pool' and 'amenities'; these are the words related to the perfect facilities which Atlantis, The Palm provides.
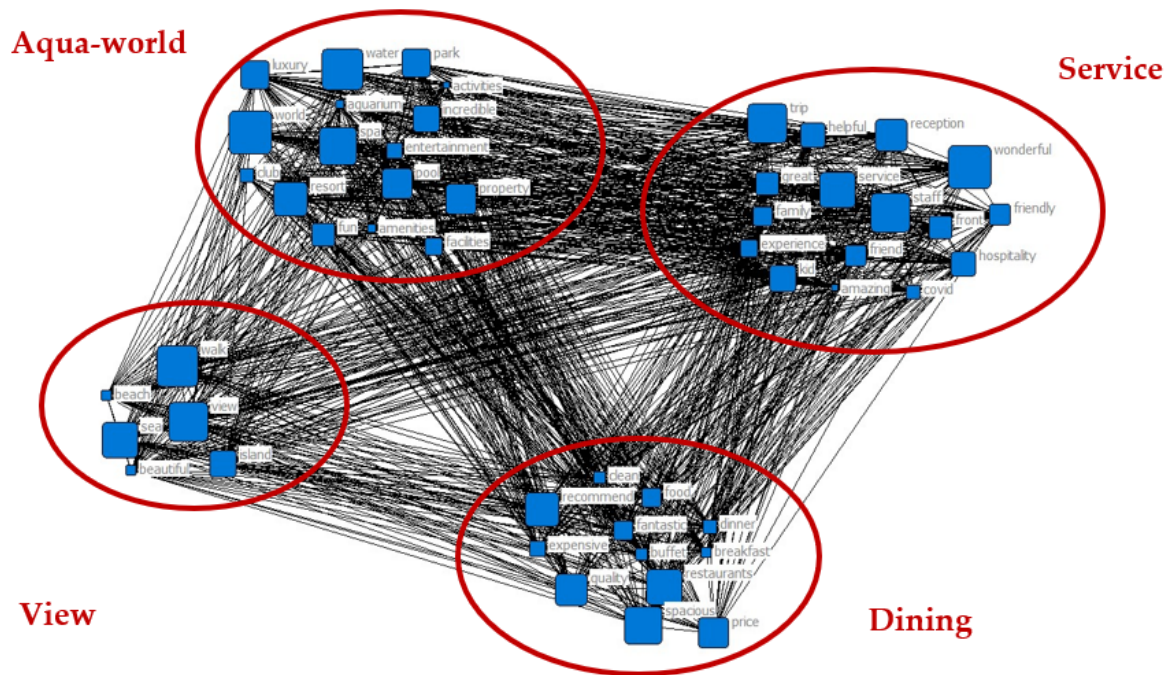

Figure 3. Atlantis, The Palm—visualization with CONCOR analysis.

Table 3. Results of CONCOR analysis.

	Extracted Words	Significant Words
Service	Trip/helpful/reception/wonderful/great/service/Staff/ family/front/friendly/experience/friend/ Hospitality/kid/amazing/covid	Trip/helpful/reception/wonderful/great/ service/Staff/experience/Hospitality/amazing/
Dining	Breakfast/dinner/price/food/fantastic/buffet/facilities/ Spacious/clean/recommend/expensive/amenities/ Quality/Restaurants	Breakfast/dinner/price/food/buffet/ spacious/clean/expensive/quality/restaurant
Scenery	Beach/walk/sea/view/beautiful/island	Beach/walk/sea/view/beautiful/island
Facilities	Luxury/water/park/activities/world/aquarium/ incredible/Spa/club/entertainment/resort/pool/ property/fun/amenities/facilities	Luxury/water/park/activities/aquarium/spa/club/ entertainment/pool/amenities

Factor analysis is a process of reduction and a process of looking for commonalities between the variables. The process of reducing a large number of variables to a small number of variables allows the main factors to come out and represent the total variables. The principal component analysis method was carried out for analysis of the Atlantis, The Palm case, and the minimum factor loading was set at 0.400 in the final step. The final results showed 16 words extracted from 50 words, covering 48.032% of all variance. Table 4 shows the results of the factor analysis of Atlantis, The Palm. The KMO figure was 0.696;

this figure is acceptable with a value greater than 0.5, and 0.696 is within a good, acceptable range, which means that the use of factor analysis was suitable for this case study. Bartlett's test of sphericity value (X^2) was 5845.187, the overall significance of the correlation matrix was $p < 0.001$. The factors were named "Facility (Factor 1)", "Value (Factor 2)", "Dining (Factor 3)", and "Service (Factor 4)". The Factor 1 category contains words such as 'Park', 'Water', 'Aquarium', 'Beach', 'Pool', 'Restaurants'; these words describe the facilities in Atlantis, The Palm. Factor 2 contains 'Trip', 'Service' and 'Family', which indicate the value of Atlantis, The Palm; these words explain the reason why customers chose this hotel. In other words, the value of the hotel. Factor 3 contains 'Dinner', 'Buffet', 'Breakfast', 'Food'; they are all food- and dining-related words, describing the food customers mentioned in the reviews. Factor 4 contains 'Staff', 'Friendly' and 'Helpful'; these are words related to the service provided in the hotel.

Table 4. Result of the factor analysis.

	Words	Factor Loading	Eigenvalue	Variance (%)
	Park	0.813	3.057	19.108
	Water	0.804		
Facility	Aquarium	0.601		
	Beach	0.538		
	Pool	0.482		
	Restaurants	0.469		
	Trip	0.846	1.794	11.212
Value	Service	0.785		
	Family	0.611		
	Dinner	0.705	1.492	9.325
Dinning	Buffet	0.693		
	Breakfast	0.628		
	Food	0.448		
	Staff	0.775	1.342	8.387
Service	Friendly	0.718		
	Helpful	0.688		

Total Variance (%) = 48.032
KMO (Kaiser–Meyer–Olkin) = 0.696
Bartlett chi-square (p) = 5845.187 ($p < 0.001$)

After the factor analysis was performed, a regression analysis of the customer experiences and the overall satisfaction was performed. The regression results are as shown in Table 5. There were four independent variables: Facility (F), Value (V), Dining (D), and Service (S), and one dependent variable: Customer Satisfaction (CS). The overall variance explained by the four predictors was 3% ($R^2 = 0.03$), and the standard error of the estimated value was calculated as 0.873. The correlation between the independent and dependent variables was low; this kind of situation might have been caused by some words being lost due to their low frequency in the reviews [57].

Table 5. Results of linear regression analysis.

Model	Unstandardized Coef.		Standardized Coef.	t
	B	Std. Error	Beta	
(Constant)	4.620	0.019		239.693
Facility (F)	−0.004	0.019	−0.005	−0.227
Value (V)	−0.140	0.019	−0.158	−7.256 *
Dining (D)	−0.058	0.019	−0.066	−3.025 **
Service (S)	−0.014	0.019	−0.016	−0.718

Notes: dependent variable: Customer Satisfaction (CS); $R^2 = 0.030$; adjusted $R^2 = 0.028$; F = 15.593; * $p < 0.001$; ** $p < 0.005$.

Value (V, beta = −0.158, *p* = 0.000) and Dining (D, beta = −0.066, *p* = 0.003) were significant at the *p* < 0.005 level, and both predictors had negative, standardized coefficients, which indicates that they were negatively related to customer satisfaction, and it also indicates that customers were not very satisfied with these two aspects. Atlantis, The Palm needs to put more attention on these two aspects and improve their management efforts on these two aspects rather than other, unrelated aspects.

5. Discussion

This study was conducted to explore customer satisfaction with attributes of Atlantis, The Palm using the analysis of online customer reviews from the Google Travel webpage. To analyze reviewing data, there were several steps. First of all, keywords were extracted using a text mining method. The second step was the calculation of the frequency of keywords from reviews. The third step was accomplished upon the previous step. The degree and eigenvector centrality of the top 50 words were analyzed. This step was aimed to reveal the connection of the keywords and present the most affecting keywords among them. The fourth step was CONCOR analysis; this step was carried out to group keywords. The results showed four groups dividing the top 50 keywords; they were named 'Service', 'Dining', 'Scenery' and 'Facility'. These keyword groups were also visualized by nodes and networks using the NetDraw function in the UCINET software. Furthermore, this study also conducted an exploratory factor analysis and linear regression analysis; the original 50 keywords were reduced to 16 keywords, and they were grouped into four factors, named 'Facility', 'Value', 'Dining' and 'Service'.

The factor analysis result showed the factor 'Value' had the highest beta coefficient; this factor contained words, such as 'Trip', 'Service' and 'Family', in the factor analysis. Most customers visited Atlantis, The Palm for their purposes based on their perceptions of the special value of this hotel [29]. For instance, customers who visited Dubai for a trip and chose Atlantis, The Palm to stay overnight expect a high standard of service. They might also have gone there with their families with the consideration that Atlantis, The Palm is more suitable for families than other kinds of hotels. The results of regression analysis indicated the negative relationship between the 'Value' factor and the overall satisfaction; customers might have had high expectations which led to disappointing feelings at the end. The hotel managers should improve the value of their hotel to meet customers' expectations because, if they fail to do so, other hotels with similar facilities and settings might achieve it and attract more potential customers away from Atlantis, The Palm.

The second highest beta coefficient factor in the linear regression analysis was 'Dining'; this factor contained words such as 'Dinner', 'Buffet', 'Breakfast' and 'Food'. Atlantis, The Palm has its buffet, and the hotel also offers food from different restaurants. Among them, some restaurants are even run by world-famous chefs such as British chef Gordon Ramsay, etc. Due to this reason, customers might have relatively high expectations about the dining experiences at Atlantis, The Palm. However, the results turned out to be the opposite. Linear regression analysis showed a negative relationship between this factor and overall customer satisfaction. According to this managerial team at Atlantis, The Palm should pay more attention to the dining experiences in their hotel. For instance, focusing more on the improvement of the food quality, the clean environment and short waiting times, etc.

The other two factors, 'Facility' and 'Service', showed no relationship with the overall customer satisfaction based upon the linear regression analysis result. This result was somewhat surprising since facilities in this hotel, especially the waterpark, appeared on the top 10 keyword ranking list. They also had high centralities among all keywords, which means they were mentioned by customers very frequently, and they had more connections and influence than other keywords. Nevertheless, the facility aspect had no direct relationship with customer satisfaction.

The above results failed to support hypotheses 1–3 since the service and water park facilities had no significant relationship with customer satisfaction. While hypothesis 3

assumed that the star rating is considered to be the value of the hotel, it had a negative relationship with the overall satisfaction.

6. Conclusions

This study aimed to explore the insights of customers' reviews of Atlantis, The Palm. The main findings indicated that customers used words such as 'amazing' and 'great' with high frequency; words, such as 'water' and 'park', also showed high frequency among reviews. However, exploratory factor analysis and linear regression results showed that overall customer satisfaction had no relationship with hotel facilities and service. This study has significance as it applied semantic analysis to a relatively new field. This study conducted empirical customer satisfaction analysis through big data analysis. With the results analyzed based on the hotel customer reviews, hotel managers could obtain a better understanding of the key attributes of customer satisfaction. It is essential to know which aspects need more attention to formulate functional, future managerial strategies that are valuable for hoteliers to save time and make the right decisions. Online reviews are not only for collecting feedback for business operators but are also an important way to investigate how customers could have higher satisfaction, and which aspects customers do not value as much as business operators thought. In this study, the Atlantis, The Palm hotel management team should seriously consider the 'Value' and 'Dining' aspects for their hotel. Among these two factors 'Value', was more important than the other factor; thus, how they improve the value perceived by customers of Atlantis, The Palm is a crucial issue for the managerial team. It seems against intuition that customer satisfaction has no direct relationship with facilities and service, but the findings pointed out that dining and value aspects play a higher role in meeting the satisfaction of customers visiting Atlantis, The Palm.

This study has practical significance but, on the other hand, it has limitations as well. The most important limitation is the time range of the data collection. This study contains a three-year range and that might not be long enough to make strong suggestions for industries. Additionally, this study focuses only on a single hotel, which is the Atlantis, The Palm, and whether the result from this study could apply to other similar hotels remains unknown. Future research might collect more data from a longer time range, which could provide more accurate solutions for hotels. Future research could also conduct comparative research on different hotels with similar facilities, such as water parks, to see whether these facilities contribute to the overall customer satisfaction or not in most cases. Lastly, since technology development is fast and there are thousands of ways to explore customer satisfaction attributes, it would be promising to conduct this kind of research by different methods. It would be a way to seek the best analyzing tools for both academics and industries.

Author Contributions: Conceptualization, S.W.; writing—original draft preparation, S.W.; supervision, H.-S.K. All authors contributed to the revision of this paper and had full access to all of the research data and took responsibility for the integrity of the study and the accuracy of the data analysis. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Lohmann, G.; Albers, S.; Koch, B.; Pavlovich, K. From hub to tourist destination—An explorative study of Singapore and Dubai's aviation-based transformation. *J. Air Transp. Manag.* **2009**, *15*, 205–211. [CrossRef]
2. Anthonisz, A.; Mason, G. Reinventing tourism: The Dubai phenomenon. *Worldw. Hosp. Tour. Themes.* **2019**, *11*, 279–286. [CrossRef]
3. Dubai Department of Economy and Tourism. *Dubai Annual Report 2019*; Dubai Department of Economy and Tourism: Dubai, United Arab Emirates, 2020.
4. Dubai Department of Economy and Tourism. *Dubai Annual Report 2020*; Dubai Department of Economy and Tourism: Dubai, United Arab Emirates, 2021.
5. Khudhair, H.Y.; Mardani, A. The positive role of the tourism industry for Dubai city in the United Arab Emirates. *Int. J. Econ. Manag.* **2021**, *06*, 185–199.
6. Park, S.B.; Kim, J.; Lee, Y.K.; Ok, C.M. Visualizing theme park visitors' emotions using social media analytics and geospatial analytics. *Tour. Manag.* **2020**, *80*, 104127. [CrossRef]
7. Salama, H.H. Dubai: An urbanism shaped for global tourism. *J. Archit. Eng. Tech.* **2015**, *4*, 154. [CrossRef]
8. Nuseir, M.T. Assessing the impact of brand equity and customer experience on brand loyalty in the United Arab Emirates' hotel industry. *Int. J. Bus. Excell.* **2021**, *25*, 459–473. [CrossRef]
9. Rapisarda, M. Atlantis: A grain of truth behind the fiction? *Heritage* **2019**, *2*, 254–278. [CrossRef]
10. Gregory, J. *Palm Islands*; Weigl Publishers: Calgary, AB, Canada, 2019.
11. Kim, Y.J.; Kim, H.S. The Impact of hotel customer experience on customer satisfaction through online reviews. *Sustainability* **2022**, *14*, 848. [CrossRef]
12. Yu, J.; Kang, B.N.; Kim, H.S. A comparative study between Hilton hotels in South Korea and USA through user-generated content analytics. *Culi. Sci. Hosp. Res.* **2021**, *27*, 200–213. [CrossRef]
13. Fu, W.; Kim, H.S. A study on wine cognition using semantic network analysis focused on Chinese wine market. *Culi. Sci. Hosp. Res.* **2021**, *27*, 221–231. [CrossRef]
14. Kwon, H.J.; Ban, H.J.; Jun, J.K.; Kim, H.S. Topic modeling and sentiment analysis of online review for airlines. *Information* **2021**, *12*, 78. [CrossRef]
15. Zhang, X.; Kim, H.S. Customer experience and satisfaction of Disneyland hotel through big data analysis of online customer reviews. *Sustainability* **2021**, *13*, 12699. [CrossRef]
16. Bigné, J.E.; Andreu, L.; Gnoth, J. The theme park experience: An analysis of pleasure, arousal and satisfaction. *Tour. Manag.* **2005**, *26*, 833–844. [CrossRef]
17. Geissler, G.L.; Rucks, C.T. The overall theme park experience: A visitor satisfaction tracking study. *J. Vacat. Mark.* **2011**, *17*, 127–138. [CrossRef]
18. Torres, E.N.; Milman, A.; Park, S. Delighted or outraged? Uncovering key drivers of exceedingly positive and negative theme park guest experiences. *J. Hosp. Tour. Manag.* **2017**, *1*, 65–85. [CrossRef]
19. Albayrak, T.; Cengizci, A.D.; Caber, M.; Nang Fong, L.H. Big data use in determining competitive position: The case of theme parks in Hong Kong. *J. Dest. Mark. Manage.* **2021**, *22*, 100668. [CrossRef]
20. Stephenson, M.L. Tourism, development and 'destination Dubai': Cultural dilemmas and future challenges. *Curr. Issues Tour.* **2014**, *17*, 723–738. [CrossRef]
21. Bagaeen, S. Brand Dubai: The instant city; or the instantly recognizable city. *Int. Plan. Stud.* **2007**, *12*, 173–197. [CrossRef]
22. Sharpley, R. Planning for tourism: The case of Dubai. *Tour. Hosp. Plan. Dev.* **2008**, *5*, 13–30. [CrossRef]
23. Al-Qasem, D.A. Impact of pandemic coronavirus disease (COVID 19) on United Araba Emirates tourism industry. *PalArch's J. Archaeol. Egypt Egyptol.* **2021**, *18*, 2556–2570.
24. Haak-Saheem, W. Talent management in Covid-19 crisis: How Dubai manages and sustains its global talent pool. *Asian. Bus. Manage.* **2020**, *19*, 298–301. [CrossRef]
25. Langton, J. Dubai Plans to Be the World's Most Popular Tourist Destination by 2025. The National, 2018. Available online: https://www.thenational.ae/uae/dubai-plans-to-be-world-s-most-popular-tourist-destination-by-2025-1.776970 (accessed on 28 January 2022).
26. Liu, C.R.; Wu, T.C.; Yeh, P.H.; Chen, S.P. Equity-based customer loyalty mode for the upscale hotels—Alternative models for leisure and business travels. *Tour. Manag. Perspect.* **2015**, *16*, 139–147. [CrossRef]
27. Hsu, C.H.C.; Oh, H.; Assaf, A.G. A customer-based brand equity model for upscale hotels. *J. Travel Res.* **2012**, *51*, 81–93. [CrossRef]
28. Israeli, A.A. Star rating and corporate affiliation: Their influence on room price and performance of hotels in Israel. *Int. J. Hosp. Manag.* **2002**, *21*, 405–424. [CrossRef]
29. Ariffin, A.A.M.; Maghzi, A. A Preliminary Study on Customer Expectations of Hotel Hospitality: Influences of Personal and Hotel Factors. *Int. J. Hosp. Manag.* **2012**, *31*, 191–198. [CrossRef]
30. Musante, M.D.; Bojanic, D.C.; Zhang, J. An Evaluation of Hotel Website Attribute Utilization and Effectiveness by Hotel Class. *J. Vacat. Mark.* **2009**, *15*, 203–215. [CrossRef]
31. Heyes, A.; Nadkarni, S. Luxury consumption in tourism: The case of Dubai—Part 2. *J. Hosp. Tour. Manag.* **2020**, *10*, 51–53. [CrossRef]

32. Choi, T.Y.; Chu, R. Determinants of hotel guests' satisfaction and repeat patronage in the Hong Kong hotel industry. *Int. J. Hosp. Manag.* **2001**, *20*, 277–297. [CrossRef]
33. Ban, H.J.; Kim, H.S. Understanding customer experience and satisfaction through airline passengers' online review. *Sustainability* **2019**, *11*, 4066. [CrossRef]
34. Afthanorhan, A.; Awang, Z.; Rashid, N.; Foziah, H.; Ghazali, P. Assessing the effects of service quality on customer satisfaction. *Manag. Sci. Lett.* **2019**, *9*, 13–24. [CrossRef]
35. Ahn, J.; Jun, K.; Kim, H.S. An exploration of the relationships among brand value, customer satisfaction and behavioral intention in fast food restaurant visitors. *Culi. Sci. Hosp. Res.* **2015**, *21*, 14–24.
36. McColl-Kennedy, J.; Schneider, U. Measuring customer satisfaction: Why, what and how. *Total Qual. Manag.* **2000**, *11*, 883–896. [CrossRef]
37. Serra Cantallops, A.; Salvi, F. New consumer behavior: A review of research on EWOM and hotels. *Int. J. Hosp. Manag.* **2014**, *36*, 41–51. [CrossRef]
38. Hu, N.; Liu, L.; Zhang, J.J. Do online reviews affect product sales? The role of reviewer characteristics and temporal effects. *Inf. Technol. Manage.* **2008**, *9*, 201–214. [CrossRef]
39. Li, M.; Ma, Y.; Cao, P. Revealing customer satisfaction with hotels through multi-site online reviews: A method based on the evidence theory. *IEEE Access* **2020**, *8*, 225226–225239. [CrossRef]
40. Wang, Y.; Lu, X.; Tan, Y. Impact of product attributes on customer satisfaction: An analysis of online reviews for washing machines. *Electron. Commer. Res. Appl.* **2018**, *29*, 1–11. [CrossRef]
41. Borges, A.P.; Vieira, E.; Lopes, J.M. Emotional intelligence profile of tourists and its impact on tourism. *J. Qual. Assur.* **2021**, 1–22. [CrossRef]
42. Xu, X. How do consumers in the sharing economy value sharing? Evidence from online reviews. *Decis. Support Syst.* **2020**, *128*, 113162. [CrossRef]
43. Kitchin, R.; McArdle, G. What makes big data, big data? Exploring the ontological characteristics of 26 datasets. *Big Data Soc.* **2016**, *3*, 2053951716631130. [CrossRef]
44. Sehgal, D.; Agarwal, A.K. Real-time sentiment analysis of big Data applications using twitter data with Hadoop framework. In *Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing*; Pant, M., Ray, K., Sharma, T.K., Rawat, S., Bandyopadhyay, A., Eds.; Springer: Singapore, 2018; pp. 765–772. [CrossRef]
45. Sohangir, S.; Wang, D.; Pomeranets, A.; Khoshgoftaar, T.M. Big data: Deep learning for financial sentiment analysis. *J. Big Data* **2018**, *5*, 3. [CrossRef]
46. Shayaa, S.; Jaafar, N.I.; Bahri, S.; Sulaiman, A.; Seuk Wai, P.; Wai Chung, Y.; Piprani, A.Z.; Al-Garadi, M.A. Sentiment analysis of big data: Methods, applications, and open challenges. *IEEE Access* **2018**, *6*, 37807–37827. [CrossRef]
47. Barsky, J.D. Customer satisfaction in the hotel industry: Meaning and measurement. *Tour. Hosp. Res.* **1992**, *16*, 51–73. [CrossRef]
48. Kim, H.D.; Choi, H.Y.; Kim, H.S. The study on job satisfaction, turnover intention and organization commitment of employees in domestic independent hotel and international chain hotels. *Culi. Sci. Hosp. Res.* **2017**, *23*, 216–224.
49. Alaei, A.R.; Becken, S.; Stantic, B. Sentiment analysis in tourism: Capitalizing on big data. *J. Travel Res.* **2017**, *58*, 175–191. [CrossRef]
50. Van der Loo, M.P.J. *Learning RStudio for R Statistical Computing*; Packt Publishing Ltd.: Birmingham, UK, 2012.
51. Stiglic, G.; Watson, R.; Cilar, L. R You ready? Using the R programme for statistical analysis and graphics. *Res. Nurs. Health* **2019**, *42*, 494–499. [CrossRef] [PubMed]
52. Borgatti, S.; Everett, M.; Freeman, L. *UCINET for Windows: Software for Social Network Analysis*; Analytic Technologies: Harvard, MA, USA, 2002.
53. Johnson, J.D. UCINET: A software tool for network analysis. *Commun. Educ.* **1987**, *36*, 92–94. [CrossRef]
54. Tao, S.; Kim, H.S. Cruising in Asia: What can we dig from online cruiser reviews to understand their experience and satisfaction. *Asia Pac. J. Tour. Res.* **2019**, *24*, 514–528. [CrossRef]
55. Yu, J.; Kim, H.S. A study on the perception of maratang restaurants in Busan area through online review analysis. *Culi. Sci. Hosp. Res.* **2021**, *27*, 246–255. [CrossRef]
56. Shadiyar, A.; Ban, H.J.; Kim, H.S. Extracting key drivers of air passenger's experience and satisfaction through online review analysis. *Sustainability* **2020**, *12*, 9188. [CrossRef]
57. Ban, H.J.; Choi, H.; Choi, E.K.; Lee, S.; Kim, H.S. Investigating key attributes in experience and satisfaction of hotel customer using online review data. *Sustainability* **2019**, *11*, 6570. [CrossRef]