

Article

A Study of Inbound Travelers Experience and Satisfaction at Quarantine Hotels in Indonesia during the COVID-19 Pandemic

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Abstract: The tourism and hospitality sectors contribute significantly to the Indonesian economy. Meanwhile, COVID-19 affects these sectors. During the pandemic, the Indonesian government applied quarantine regulations at designated hotels to support its tourism industry. Since COVID-19 is becoming endemic and travel bans are being relaxed, hotel satisfaction becomes a crucial factor in quarantine hotels. If guests have a positive experience while staying at these hotels, they are likely to return for a staycation or vacation in the near future. The study examined 4856 reviews from Google reviews on 15 quarantine hotels in Indonesia. Following word frequency calculations in a matrix, UCINET 6.0 is used to analyze the network centrality and perform CONCOR analysis. The CONCOR analysis categorizes the review data into five categories. As quantitative analysis was performed, exploratory factor analysis was grouped into six variables: tangible, assurance, frontline, accommodation, quarantine, and location. As a result, tangible, assurance, and frontline negatively impacted guest satisfaction. Furthermore, three other variables: accommodation, quarantine, location, which have a positive influence, will lead to increased trust from inbound travelers. For managerial implication, results allow managers of quarantine hotels in Indonesia to focus more on improving tangible, assurance, and frontline factors.

Keywords: quarantine hotel Indonesia; COVID-19; service quality; online review; semantic network analysis

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1. Introduction

As the COVID-19 virus spread around the world and became a pandemic, it impacted the tourism industry sector [1]. It is a recent crisis which has changed the world, substantially affecting the tourism and hospitality sectors [2,3]. The crisis is unprecedented and is moving rapidly, yet its outcome remains deeply uncertain. The COVID-19 pandemic has impacted almost every sector across the globe, with the hotel industry being one of the most affected [4]. The ramifications of the COVID-19 pandemic such as travel bans, border closures, and quarantine instructions have forced many tourism and hospitality businesses to reduce or close operations [1]. This sector has lost millions in revenue due to the unprecedented efforts to deal with the pandemic; it is estimated that 75 million jobs and USD 2.1 trillion in turnover are at risk [5].

As an industry, tourism and hospitality contribute significantly to the Indonesian economy since it generates income, creates jobs, and generates foreign exchange earnings [1]. COVID-19 has a broad impact on countries where a number of provinces are greatly dependent on tourism. The number of tourists arriving in Indonesia at the beginning of

2020 decreased by 13.5 percent due to Indonesia's closure to international tourists as of April 2020. Meanwhile, Indonesia received about 1.56 million international visitors in 2021, a significant decrease over the previous year due to the COVID-19 travel restrictions [6].

International travelers who have received one dose of the COVID-19 vaccination must undergo quarantine for 5×24 h at a designated hotel approved by Indonesia government at their own expense following the issuance of Health protocol No. 15, 2022 regarding international travel during the COVID-19 pandemic. The 15 hotels are certified by the Indonesia Hotel and Restaurant Association to accommodate international arrivals who require quarantine. International travelers with a minimum of two doses of vaccination are allowed to continue their journey without quarantine [7]. Travelers can view and compare the prices of government-appointed quarantine hotels in Indonesia by visiting quarantinehotelsjakarta.com [7]. Indonesia has set a limit on quarantine hotel prices so that inbound travelers do not feel disadvantaged by the hoteliers' unilateral rates. Tourism quarantine regulations are considered the key to the hotel industry's recovery. Due to this program, Indonesian hotels may continue to receive international guests. Additionally, a number of health protocols are in place to prevent the spread of COVID-19 [8] in order to ensure the sustainability of the tourism industry.

When Indonesia slowly opened its borders for tourism in 2021, the government supported the tourism and hospitality industries by creating regulations for travelers who entered the country by staying in quarantine hotels. The government has appointed 15 hotels in Jakarta and nearby cities where the city's biggest airport, Soekarno Hatta International Airport, is located. The closer a hotel is to a destination's various points of interest, including transportation portals such as airports, the more efficient it is for inbound travelers to reach the hotel [9]. When the government regulation was first implemented, inbound travelers were quarantined for 14 days, which was changed to 8 days, 5 days, and then 3 days in December 2021 [10]. However, hotels would receive more income, due to the inbound travelers staying in quarantine at the hotels for a number of days. Despite the reduced number of tourists, several hotels which were designated as quarantine hotels received income from inbound travelers. This study focuses on how the designation of hotels for quarantine has provided support to the tourism industry facing pandemic related challenges by providing hotel rooms for inbound travelers.

Indonesia is a developing country, and some studies already examined the impact of COVID-19 in such countries. The impact of COVID-19 has been examined in a number of studies, including one that examined the impact of COVID-19 on psychological disorders in Bangladesh [11]. Meanwhile, another study focused on the increase in unhealthy infections caused by COVID-19 in Africa [12]. As a developing country, it is important to examine the impact of COVID-19 from the perspective of a country that does not have the same infrastructure, income, or level of preparation to face crises as a developed country might [13].

Furthermore, satisfaction has become an important factor in quarantine hotels since it is crucial to use the experiences from crises to identify future challenges [1]. Additionally, in this study, satisfaction is a key factor, as in the future, satisfied customers are likely to return to these hotels when it has been reverted back to an ordinary hotel. Following the end of the pandemic, hotels will resume normal operations [4]. Quarantine hotels are concerned with providing satisfactory services to quarantined lodgers and wish to expand their revisiting clientele base in the future. However, they have made every effort to provide guests with satisfaction, as guests will choose a highly rated and well-reviewed hotel for quarantine.

This study assesses the customer networks at Indonesian quarantine hotels by analyzing online guest reviews and classifying their influencing factors, in addition to examining the relationship between guest feedback and guest satisfaction through its rating system. The hoteliers are challenged by the pandemic by providing quarantine services, which require more effort than simply providing services as normal. Additionally, the

evaluation focus and its influencing factors are described. This study provides an overview of the common characteristics of online reviews by guests at the quarantine hotels in Indonesia and provides more general recommendations regarding the marketing of quarantine hotels. These recommendations can also benefit the industry in the future when the pandemic ends.

2. Literature Review

2.1. Service Quality and Customer Satisfaction

Satisfaction can be defined as the feelings of like or dislike that someone has for a product or service after comparing the performance against their expectations [14]. The measurement of customer satisfaction as the difference between expected service and perceived service in one of the earliest studies of service quality (SERVQUAL) [15,16]. Service quality has been a popular and important subject among practitioners and researchers for many decades [17]. In previous studies, researchers have shown that service quality influences a customer's decision-making process [18].

Recently, service quality has increased focus on the hotel industry in developing countries. For instance, research has been conducted on Malaysian hotel satisfaction and dissatisfaction through big data analysis of collected service quality related terms to explain customer experience [17]. A previous study examined the quality of service in Pakistani hotels. Given the importance rating of guest satisfaction, it was concluded that room service, cleanliness and comfort, and complaints handling were the most important areas to focus on [19]. Meanwhile, previous studies in China and Taiwan revealed that service perception dimensions are significantly related to customer satisfaction, and there is a positive correlation between customer satisfaction and their intentions to revisit in terms of the hotel quarantine industry [20].

It is common for customers to feel aggrieved when a service is deemed inadequate, and dissatisfaction will increase with the length of stay, especially during a relatively long period of time [21]. In addition to meeting basic hygiene and facility requirements, all hotels assigned for quarantine have shown short-term profitability. Due to the COVID-19 pandemic, there is a strict contact-less management system that limits the ability to provide general services. Considering the effects of the COVID-19 pandemic, hotels are worried about maintaining their reputation. Hotels that operate as quarantine hotels must figure out how to stay in business while protecting their reputation and possibly even growing their customer base [4].

2.2. Online Review

The Indonesian government continues to change the rules for the quarantine period for international travelers, both for Indonesian citizens (WNI) and foreign nationals (WNA) who enter the country. Since the COVID-19 Delta variant emerged in July 2021, the government has changed the quarantine rules more than four times [22]. Recently, the high cost of quarantine hotels has been a topic of complaint by many Indonesian citizens (WNI) who return from abroad, both for work and travel, despite the quarantine hotel rates being set by the government. According to inbound travelers, quarantine hotel prices are still expensive. They claimed to have paid more than ten million rupiah for quarantine hotel rates that were only 2 and 3 stars in Jakarta and nearby cities. The alternative to using quarantine facilities from the government also has complicated procedures [14].

There have been several cases of complaints about hotel quarantines in Indonesia, some of which have gone viral: an Indonesian public figure stated that she was disappointed when quarantined at a 5-star hotel after returning from Turkey. She complained that even though she paid a high price, the facilities were lacking, and she likened it to being in a prison because she could not go anywhere. Meanwhile, she also complained about cold food, towels not being replaced, and the cleanliness of the room due to a lack of hotel room cleaners [23]. In another case, a few months ago, it was suspected that there

were individuals who took advantage of the hotel quarantine rules for inbound travelers. This began with an upload from the Indonesia Minister of Tourism and Creative Economy which showed the contents of a complaint from a tourist from Ukraine who was on vacation in Bali. The traveler received a positive PCR test result at the end of the quarantine. However, the tourist and his child were not allowed to take PCR tests elsewhere, so they felt disadvantaged because they needed to increase the cost of quarantine [24].

Online reviews are more detailed, contain better information, and are thus more reliable than information provided by the company [22]. Essentially, customers tend to be more sympathetic towards information from previous customers than the promotional information provided by the company. Online reviews are used as a new source of information for potential customers who are seeking information about the hotel. Thus, reviewers play the role of opinion leaders, whether or not they intended to be so [23]. Customer reviews are a particularly valuable source of consumer information and can contribute to continuous improvement management [24]. Additionally, for consumers, bad reviews can be especially influential and valuable, as they can help prevent negative experiences [24,25]. Customers' online reviews offer an opportunity for observing the factors associated with customer satisfaction. Customer satisfaction is indicated by positive reviews, whereas customer dissatisfaction is indicated by negative reviews [26,27].

There is a wide recognition of the importance of online reviews in the existing literature [27,28]. Researchers have extensively examined the effects of different rating values on consumer preferences and behavior [15,27,29]. Furthermore, online reviews have a considerable impact on the decision-making process [27]. As a result, it is important to study popular online travel communities, in order to determine travelers' behavior and preferences as it is an excellent instrument for evaluating travelers' satisfaction [27,30]. Furthermore, one of the main advantages of analyzing customer reviews and ratings is that it provides direct evidence of the level of satisfaction from customers [27,31].

2.3. Semantic Network Analysis

The semantic network is a useful analytic technique which uses paired associations based on shared meaning as opposed to paired associations of behavioral or perceived communication links. This method, which scholars use to develop their networks, continues to vary. Implicit to the various techniques is a debate about valid measurements of meaning [32,33]. As a qualitative method analysis, it provides a strong theoretical and methodological foundation with which to describe the semantic nature of the online tourism domain [34]. Based on the studies, different measures such as centrality could be derived to measure the structure of a semantic network and to compare the differences between two semantic structures [35].

In this research, Freeman's degree centrality, Eigenvector centrality, and CONCOR were selected as indicators for analyzing the semantic network of top frequency words. Specifically, Freeman's degree centrality refers to the quantity of direct ties a word possesses. The higher the degree a word has, the more connected it is within the network. The Eigenvector centrality refers to a measure of influence of a node in a network. A high Eigenvector score means that a node is influential to other nodes in a network [36]. In the semantic network analysis, different clusters of words may be extracted by CONCOR (Convergence of iterated Correlations) analysis [33,37]. CONCOR analysis identifies the blocks of nodes according to the parametric statistics of the matrices of the current keywords and forms clusters that include keywords with similarities [38].

3. Methodology

3.1. Data Collection

Recently, it is common for guests to express opinions or write reviews about the hotel that they visit. Online guest reviews are more important than ever. In researching hotels, potential customers are proactively seeking information about the experiences of previous guests. Reviews and star ratings on websites such as TripAdvisor, Google, and Facebook all play an extremely important role in getting new customers to book. The more reviews available, the more trustworthy a hotel will appear [39].

In this study, customer reviews are sourced from Google Travel, which is a trip planner service developed by Google for the web [40]. Specifically, this study uses the data from the D-Hots website that are provided by PHRI (The Association of Hotel and Restaurant) which can be accessed at quarantinehotelsjakarta.com. The Indonesia Ministry of Health appointed PHRI to provide and facilitate the accommodation for all international arrivals whose profile require mandatory quarantine under own expenses.

The list includes quarantine hotels in Jakarta and nearby cities. This study collected reviews from customers who had stayed in one of the 15 quarantine hotels listed in Table 1. The data collection was performed by SCTM 3.0 (Smart Crawling and Text Mining), which is a program for web crawling and data processing developed by Wellness & Tourism Big Data Institute of Kyungsung University. The data collection period was from 2021 to 2022, since the regulation for inbound traveler quarantining at designated hotels in Indonesia started in 2021. A total of 4856 reviews from the 15 hotels in Jakarta and nearby cities were collected from Google reviews.

Table 1. Hotel reviews included in the study.

Hotel Star Rating	Hotel Name	Average Review Rating	Number of Reviews	Std.	Std. Error
3-star	Sahid Mutiara Karawaci Hotel Tangerang	4.2	42	1.22	0.04
	Blue Sky Petamburan Jakarta		202		
	Zuri Expres Mangga Dua Hotel Jakarta		334		
	Holiday Inn Express Jakarta		310		
	Arcadia by Horison Jakarta		105		
4-star	Novotel Tangerang	4.3	403	1.04	0.02
	FM 7 Resort Bandara Tangerang		166		
	Aloft South Jakarta		335		
	JS Luwansa Hotel Jakarta		407		
	Aston Kemayoran City Hotel Jakarta		169		
	Sahid Jaya Lippo Cikarang		194		
	Java Palace Hotel Cikarang		142		
5-star	Ayana Mid Plaza Jakarta	4.5	295	1.00	0.02
	Mandarin Oriental Jakarta		643		
	Grand Mercure Kemayoran Jakarta		1109		
Total			4856	1.07	0.02
Average rating = 4.4					
F = 29.742, $p < 0.001$					

3.2. Data Analysis

This study utilizes a method of data analysis that consists of three steps. In the first step, the refined data are extracted, and the main 70 words are selected. Then, the data pre-processing is performed by using text mining techniques. The sentence contained in the dataset are divided into single words with their relative frequency. The second step consists of semantic network analysis of the top frequency words which are selected based on the relationship of each word to the research subject. In this study, centrality (Freeman's degree and Eigenvector) analysis and CONCOR analysis are conducted to, firstly, identify the significance of the top frequencies with their corresponding centrality values, and secondly, to obtain the dimensions reflecting customer perception and cognition of quarantine hotels in Indonesia. Then, the frequency of words is calculated and categorized into a matrix for semantic network analysis, and UCINET 6.0 is used to analyze the network centrality and perform CONCOR analysis [41]. The final result is visualized by Netdraw to illustrate the top frequency words.

In this study, quantitative analysis is conducted based on factor analysis and linear regression analysis. This study explores factors that reflect customer experience and customer satisfaction. The steps of the research procedures can be seen in Figure 1. In this way, customer satisfaction is evaluated based on ratings provided by customer reviews from Google Travel. The review contains a score from 1 to 5, with 1 representing 'least satisfied', and 5 representing 'most satisfied' [33,42].

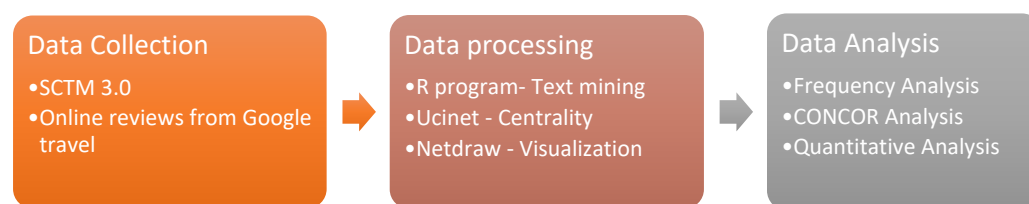


Figure 1. Research Procedures.

4. Results

4.1. Analysis of Word Frequency

As the result of text mining, 4856 reviews were sorted and collected from 15 hotels which were appointed by the Indonesian government. Table 2 summarizes the frequency of numerical ratings from 1 to 5. This table can be used as a baseline to evaluate customer satisfaction levels. Reviewers at the quarantine hotels in Jakarta and nearby cities gave their experiences at the hotel an average rating of 4.4 out of 5, and 83% of reviewers gave the hotel a four- or five-star rating. In general, 7% of customers are not satisfied with their experience since they gave a rating of 1 or 2.

Table 2. Summarization of overall satisfaction rating.

Rating	Frequency	Percent	Cumulative Percent
1	265	5.5%	5.5%
2	111	2.3%	7.8%
3	259	5.3%	13.1%
4	808	16.7%	29.8%
5	3413	70.2%	100%
Total	4856	100%	-
Average Score 4.4			

Quarantine hotels in Indonesia are grouped into three categories: 3 stars, 4 stars, and 5 stars, with a minimum qualification of three star hotels, as determined by the Indonesian government. According to Table 3, the results show that the lowest rating (rating 1) is obtained from 3-star hotels. However, 4- and 5-star hotels receive a minimum rating of 2. There is proof that guests are less interested in 3-star hotels since they receive the least number of reviews, while 5-star hotels receive the most reviews, averaging 2047 with an average rating of 4.53 to 4.61.

Table 3. Descriptive Analysis Result.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum Rating	Maximum Rating
					Lower Score of Rating	Upper Score of Rating		
3-star	994	4.27	1.22	0.04	4.19	4.34	1	5
4-star	1815	4.40	1.04	0.02	4.35	4.45	2	5
5-star	2047	4.57	1.00	0.02	4.53	4.61	2	5
Total	4856	4.44	1.07	0.02	4.41	4.47	1	5

As a result, the words that appeared in the valid comments collected were ranked by their frequency. Table 4 shows the top 70 words with high frequency relating to customer experience that were extracted and sorted. The top frequency word is “hotel”, with 4227 frequencies. This first result is familiar with this research which focusses on the hotel industry. The words “good” and “room” are in second and third position, with a frequency of 2549 and 2110, respectively. In fourth position is “service”, with a frequency of 2063.

Table 4. Frequency of Top Keywords for Indonesia Quarantine Hotel.

Rank	Words	Frequency	Rank	Words	Frequency
1	hotel	4227	36	experience	245
2	good	2549	37	price	227
3	room	2110	38	excellent	217
4	service	2023	39	covid	212
5	food	1710	40	close	211
6	clean	1316	41	bad	198
7	friendly	1223	42	fast	197
8	comfortable	1213	43	swimming	194
9	quarantine	891	44	complete	194
10	stay	884	45	airport	187
11	place	881	46	floor	180
12	jakarta	583	47	water	179
13	great	576	48	big	178
14	breakfast	558	49	front	174
15	delicious	503	50	come	168
16	spacious	489	51	wifi	166
17	time	467	52	guests	165
18	location	433	53	near	164
19	view	425	54	people	155
20	check	405	55	bed	153
21	facilities	402	56	easy	152
22	strategic	375	57	bathroom	144
23	days	349	58	new	144

24	parking	334	59	pandemic	142
25	pool	302	60	receptionist	142
26	best	297	61	staycation	139
27	restaurant	296	62	located	128
28	star	295	63	quality	126
29	helpful	281	64	cozy	126
30	recommended	271	65	health	124
31	lobby	250	66	small	124
32	security	249	67	reception	123
33	city	247	68	amazing	119
34	area	247	69	hospitality	116
35	experience	245	70	basement	115

Meanwhile, “quarantine”, as this word is the main topic of this research, is in the ninth position with a frequency of 891. The main reason that this word is not in the first position, nor top five highest frequency words, is that the data were taken in 2021, before the designated hotel quarantining in Indonesia started. Some guests were unfamiliar with “quarantine” as a word, since previous hotel bookings were likely associated as being used for leisure and vacation. It was only as the COVID-19 pandemic began, that hotels started to be a place of quarantine. The other words that relate to quarantine hotels, such as “clean”, “stay”, “days”, “covid”, “pandemic”, “health”, etc., also have a high frequency.

4.2. Centrality (Freeman’s Degree and Eigenvector) Analysis

This research utilized centrality analysis which consists of two indicators. Freeman’s degree centrality which is an index that measures the degree of connection between one node and the other nodes in the network [42,43]. The second indicator is Eigenvector centrality which is used to identify the most influential node in the network [33].

The comparison of frequency between top-frequency words and their centrality is illustrated in Table 5. The centrality words show the relationship between impact and relation between their nodes. Table 5 shows the comparison of the 30 top-frequency words of Freeman’s centrality and Eigenvector centrality. The word “hotel” showed the highest frequency, the highest coefficient of Freeman’s degree centrality, also the highest coefficient of Eigenvector centrality. This indicates that “hotel” has the highest connection to other words [44]. As this research is focused on quarantine hotels, it is evidently a common and relevant word that has a strong connection with the other words. The words “good”, “room”, “service”, and “food” also have a high frequency and a high coefficient of Eigenvector centrality, which indicates that these words are connected to other high frequency words. Although “quarantine” is not in the top 5 most frequent words in the Freeman degree nor the Eigenvector, it is at the tenth position for both, which indicates it has connections to other high frequency words.

Table 5. Comparison of Frequency and Centrality of Words.

No	Word	Frequency		Freeman Degree Centrality		Eigenvector Centrality	
		Freq.	Rank	Coefficient	Rank	Coefficient	Rank
1	hotel	4227	1	20.30	1	0.39	1
2	good	2549	2	16.10	2	0.35	2
3	room	2110	3	15.78	3	0.31	3
4	service	2023	4	13.84	4	0.31	4
5	food	1710	5	13.66	5	0.29	5
6	clean	1316	6	10.73	6	0.25	6

7	friendly	1223	7	10.06	7	0.23	7
8	comfortable	1213	8	8.64	9	0.19	8
9	quarantine	891	9	7.15	10	0.16	10
10	stay	884	10	8.91	8	0.19	9
11	place	881	11	5.25	14	0.12	12
12	Jakarta	583	12	5.01	15	0.10	17
13	great	576	13	4.86	16	0.11	16
14	breakfast	558	14	5.78	11	0.12	11
15	delicious	503	15	4.72	17	0.11	15
16	spacious	489	16	5.44	12	0.11	14
17	time	467	17	5.43	13	0.11	13
18	location	433	18	3.98	21	0.08	22
19	view	425	19	4.10	19	0.09	19
20	check	405	20	4.10	20	0.08	21
21	facilities	402	21	3.80	22	0.08	20
22	strategic	375	22	3.11	27	0.07	27
23	days	349	23	4.22	18	0.09	18
24	parking	334	24	2.32	29	0.05	30
25	pool	302	25	3.74	23	0.07	26
26	best	297	26	2.81	28	0.06	28
27	restaurant	296	27	3.47	24	0.07	23
28	star	295	28	3.26	26	0.07	25
29	helpful	281	29	3.28	25	0.07	24
30	recommended	271	30	2.23	30	0.05	29

4.3. CONCOR Analysis

In Figure 2, the top 70 words were extracted and arranged into five clusters using CONCOR Analysis. CONCOR analysis is used to performing correlation analysis to find an appropriate level of similarity groups [42], and it was used in this research to find different clusters of top frequency words reflecting perception and interest of quarantine hotels in Jakarta and nearby cities. The words were grouped based on their similar positions and mutual relationships [43]. In the CONCOR result, the review data are divided into the following five clusters: location, reliability, quarantine, assurance, and tangible. According to the literature review that mentions SERVQUAL, the three clusters are contained in the CONCOR result and part of the SERVQUAL dimension, which are tangible, assurance, and reliable.

In this analytical method, the extracted words are grouped based on similar position and mutual relationship [42,43]. After grouping the extracted words and significant words, the data are divided in Table 6. The corresponding word clusters are shown in Table 6. Some words which do not belong to their cluster such as “easy” and “cozy” in the location cluster; “quality”, “come”, “close”, and “time” in the reliability cluster; “floor” and “staycation” in the quarantine cluster; were eliminated due to these words not belonging to that cluster.

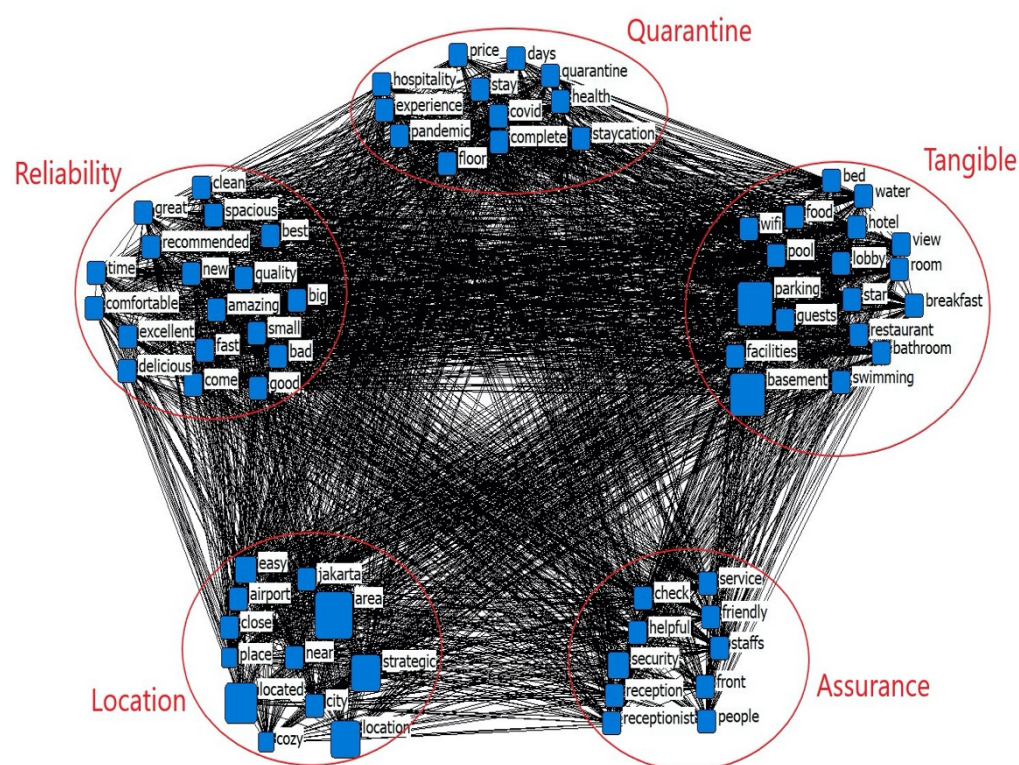


Figure 2. Visualization of CONCOR Analysis.

Table 6. Clustering of CONCOR Analysis.

Clusters	Extracted Words	Significant Words
Reliability	Good/quality/spacious/big/come/great/best/clean/time/bad/recommended/comfortable/delicious/excellent/small/fast/new/amazing	Good/spacious/big/great/best/clean/bad/recommended/comfortable/delicious/excellent/small/fast/new/amazing
Tangible	Bed/food/pool/star/facilities/guests/swimming/water/hotel/lobby/breakfast/restaurant/parking/view/basement/wifi/room/bathroom	Bed/food/pool/star/facilities/guests/swimming/water/hotel/lobby/breakfast/restaurant/parking/view/basement/wifi/room/bathroom
Location	Jakarta/easy/strategic/cozy/place/airport/area/located/location/near/city/close	Jakarta/strategic/place/airport/area/located/location/near/city/close
Quarantine	Price/experience/stay/health/quarantine/days/pandemic/covid/floor/complete/hospitality/staycation	Price/experience/stay/health/quarantine/days/pandemic/covid/complete/hospitality
Assurance	Check/helpful/security/staffs/front/receptionist/service/friendly/reception/people	Check/helpful/security/staffs/front/receptionist/service/friendly/reception/people

4.4. Quantitative Analysis

Factor analysis is a technique used to find factors that explain the relationship and correlation between the various independent indicators observed in this study. This shows the connections between variables based on the variance of keywords in the customer reviews of quarantine hotels in Indonesia. The purpose of factor analysis is to reduce many variables into smaller variables using an oblique rotation process. In this research, the Eigen value is greater than 1.0 and represents a substantial percentage of total variance. As a result, a total of 19 words were removed from the 70 keywords.

Table 7 shows the result of the factor analysis with a KMO (Kaiser Meyer Olkin) value of 0.677, which is higher than 0.6. Therefore, this result indicates that the use of factor analysis is still acceptable for this study. The Bartlett's test result (X^2) was 65,934.718, with overall significance of the correlation matrix ($p < 0.001$). This result indicated that the data did not produce an identity matrix, and that the distribution of the data was multivariate normal. As a result of the factor analysis, the six factors are: "Accommodation (Factor 1)", "Tangible (Factor 2)", "Quarantine (Factor 3)", "Frontline (Factor 4)", "Assurance (Factor 5)", and "Location (Factor 6)". Factor 1 consists of "room", "clean", and "come", which are related to accommodation. Factor 2 consists of "pool", "swimming", "breakfast", and "fast", which are related to tangibility. Factor 3 consists of "airport", "water", "quarantine", and "days", which are related to quarantining and is also the main topic of this research. Factor 4 consists of "receptionist" and "reception", which are related to the frontline. Factor 5 consists of "staffs", "friendly", and "helpful", which are related to assurance. Factor 6 consists of "strategic", "location", and "close" which are related to location.

Table 7. Result of the factor analysis.

Factor	Words	Factor Loading	Eigen Value	Cumulative Variance
Accommodation	room	0.968	3.050	16.050
	clean	0.967		
	come	0.963		
Tangible	pool	0.813	2.123	27.225
	swimming	0.794		
	breakfast	0.628		
	fast	0.612		
Quarantine	airport	0.763	1.940	37.437
	water	0.739		
	quarantine	0.584		
	days	0.474		
Frontline	receptionist	0.907	1.786	46.837
	reception	0.904		
Assurance	staffs	0.757	1.657	55.558
	friendly	0.717		
	helpful	0.596		
Location	strategic	0.760	1.554	63.735
	location	0.752		
	close	0.435		
KMO (Kaiser Meyer Olkin) = 0.677				
Bartlett's chi square (p) = 65,934.718 ($p < 0.0001$)				

Linear regression was used after the factor analysis to analyze guest experiences and satisfaction, as shown in Table 8. The linear regression analysis has six independent variables: Accommodation (A), Tangible (T), Quarantine (Q), Frontline (F), Assurance (A), Location (L). All the variance explained by six variables were 44.3% ($R^2 = 0.443$). All

variables were significant at 0.01. Three factors, “Tangible” ($\beta = -2.144$, $p < 0.001$), “Frontline” ($\beta = -0.335$, $p < 0.001$), and “Assurance” ($\beta = -1.828$, $p < 0.001$) were negative impacts to the guest average satisfaction rating based upon its standardized coefficient values. Reviews written by guests suggest that they are not pleased with “Tangible”, “Frontline”, and “Assurance” factors, with reviews such as the following: “It has to be the worst breakfasting experience I have had in Jakarta so far. Poor choice of limited buffet”; “It was horrible quarantine staying in this hotel, awful rice for breakfast-lunch-dinner”; “My hotel bill was made wrong by the receptionist, and I asked for it to be corrected it turned out to be a very slow response. I was disappointed”; “As too many guests contact these hotels, mostly staff need be professional all the time (the frontline) is the main problems”, etc.

Table 8. Result of linear regression analysis.

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>
	β	Std. Error	Beta	
(Constant)	4.482	0.011		416.975
Accommodation	0.858	0.060	0.863	14.250 *
Tangible	-2.144	0.066	-2.159	-32.451 *
Quarantine	0.939	0.101	0.943	9.279 *
Frontline	-0.335	0.048	-0.335	-6.953 *
Assurance	-1.828	0.108	-1.838	-16.887 *
Location	2.962	0.081	2.987	36.460 *

Notes: Dependent variable: Guest Satisfaction (GS); $R^2 = 0.443$; adjusted $R^2 = 0.442$; $F = 633.653$; * $p < 0.001$.

The three other variables, “Accommodation” ($\beta = 0.858$, $p < 0.001$), “Quarantine” ($\beta = 0.939$, $p < 0.001$), and “Location” ($\beta = 2.962$, $p < 0.001$) were shown to have a positive impact to guest satisfaction, with reviews such as: “Hotels with good service, clean rooms and strategic location”; “A place that is quite comfortable to carry out quarantine to return to Indonesia the place is quite strategic and close to toll road access”; “Transfer from the airport to quarantine was fast and flawless. I have very enjoyable stay at MO Jakarta”, etc. Identifying favorable Accommodation, Quarantine, and Location aspects makes more guests trust these hotels for quarantining as inbound passengers entering Indonesia.

5. Discussion and Conclusions

There is a significant amount of research that has been conducted in the hotel and guest satisfaction field, but there still no precedent of studies on quarantine hotels in Indonesia that utilize big data. This is because the regulation of using designated hotels for inbound travelers to Indonesia, excluding student and migrant workers, began in 2021, and thus is a short period to collect data from.

The results of this study provide a general outline of COVID-19 hotel quarantine prevention practices that can better prepare quarantine hoteliers when dealing with future health crises by following government rules and regulations and improving customer satisfaction by upgrading hotel values and menus. For the present and future, hoteliers should focus on hygiene and cleanliness and offer convenient options for guests to ensure they feel comfortable and safe during their stay.

5.1. Main Findings of the Study

The purpose of this study was to investigate the customer experience and customer satisfaction of 15 quarantine hotels in Indonesia by examining online reviews. The process of conducting this study involved several steps. To identify the most influential words from all keywords, 70 words with the highest frequency were examined for degree and eigenvector centrality based on the results of frequency analysis. The CONCOR analysis

grouped these keywords into five categories, namely, "Reliability", "Quarantine", "Tangible", "Location", and "Assurance". After conducting factor analysis, 18 words were divided into six categories, namely "Accommodation", "Tangible", "Quarantine", "Frontline", "Assurance", and "Location". As a result, the clusters between CONCOR and factor analysis were able to be correlated; for instance, "Reliability" with "Accommodation", "Quarantine" with "Quarantine", "Tangible" with "Tangible", "Assurance" with "Assurance", and "Frontline" and "Location" with "Location".

The result of linear regression has six independent variables: Accommodation (A), Tangible (T), Quarantine (Q), Frontline (F), Assurance (A), and Location (L). All the variance explained by the six variables were 44.3% ($R^2 = 0.443$). All variables were significant at 0.01. Three factors, "Tangible", "Frontline", and "Assurance" negatively impacted average guest satisfaction ratings based upon its standardized coefficient values. Meanwhile, the three other variables "Accommodation", "Quarantine", and "Location" were identified as having a positive impact to guest satisfaction. Using this finding, hoteliers of quarantine hotels in Indonesia may improve aspects in which guests still feel dissatisfied. Previous studies revealed some positive guest feedback at quarantine hotels, such as the fact that service requests were met immediately, and the fact that hoteliers asked about their satisfaction with the service [4]. Guests may find this information useful as it provides details about the quality and previous experiences of other guests.

5.2. Theoretical Implications

This study analyzed 70 words through semantic network analysis by using big data and mainly focused on the centrality analysis (Freeman's degree centrality and Eigenvector centrality), proximity analysis, and CONCOR analysis. This study also utilized UCINET 6.0 packaged with Netdraw for visualizing data [41]. The ranking of "hotel" as the word with the highest frequency is an unsurprising result. CONCOR analysis was performed to categorize the understanding and awareness of Internet users. These data help clarify the implications for empirical application.

The quantitative analytic results showed different factors contributing to guest satisfaction/dissatisfaction. In the linear regression analysis result, Quarantine is in the second position for beta value. These words were positioned in the analysis result based on frequency analysis and are strongly related to the research topic of quarantine hotels. The result implies that the quarantine variables such as "quarantine", "airport", "days" and "water" are highly relevant to guest satisfaction who stayed at quarantine hotels in Indonesia. Since these words appear in the CONCOR results, it can be concluded that guests are already satisfied with quarantine variable. The 15 designated hotels were selected due to their location nearby Soekarno Hatta International Airport. This improves guest satisfaction regarding location. In addition, the Indonesian government uses a standard for choosing these 15 hotels, which increases assurance of quality for inbound travelers.

According to CONCOR analysis, there were three clusters, which these clusters adopted SERVQUAL dimensions such as "tangible", "reliable" and "assurance". Accordingly, service quality is of utmost importance in the hospitality and tourism industries [17]. In a study of Ghanaian hotels, all aspects of SERVQUAL contributed to customer retention, but two dimensions which were 'tangibles and 'reliability' were the most crucial factors [17,45]. Quarantine can be an unforgettable experience for some travelers, but it can also be ambiguous. Since quarantine hotel guests are confined in a small space and have external restrictions on their movements, hoteliers must pay greater attention to the quality of services provided. In other words, they will pay more attention to punctuality and service delivery. Therefore, assurance is another important aspect of evaluating quarantine hotel services [4]. As the two SERVQUAL dimensions (tangible and assurance) negatively impact guest satisfaction, it can be seen as proof that these aspects require improvement. This study may become an example for the application of online guest reviews in the hospitality industry, especially for quarantine during the COVID-19 pandemic, and it could provide new insights for the research of quarantine hotels.

5.3. Implications for Management

It is unknown when the COVID-19 pandemic will end. The pandemic certainly made a negative impact on the tourism and hospitality industries. Indonesia, with 5% Gross Domestic Product earning from the tourism sector, requires hard work to revive its tourism sector. Likewise with hoteliers, the Indonesian government imposing quarantine rules on inbound travelers is certainly an opportunity for hoteliers to revive their business and earn income, despite the impact of COVID-19.

As for the managerial implications of this study, the examined factors from the factor analysis, such as Tangible, Frontline, and Assurance which dissatisfied customers, would be the focus points for developing a relative marketing strategy. For instance, managers of quarantine hotels in Indonesia should pay more attention to the improvement of these aspects since most of their customers were more interested in these dimensions, and in this case, were dissatisfied. Thus, it is essential to provide guests with high-quality service to make customers feel “worthy”, as they cannot leave their room during the quarantine period. They must be satisfied by the staff and food since they can only stay inside their quarantine room and cannot leave.

Although the 3 variables (Tangible, Frontline, Assurance) have significant negative impact on guest satisfaction, three other variables (Accommodation, Quarantine, Location) have significant positive impacts and can be used for improving quality of the quarantine hotel in Indonesia. However, it does not mean that many guests give negative reviews regarding Tangible, Reliability, and Assurance factors, the other aspects of hotel quarantine in Indonesia are all considered negative. Guests are tired from traveling abroad, plus the time-consuming process of immigration. Additionally, they must quarantine for several days. This results in guests becoming tired and emotional, writing negative reviews about the quarantine process at hotels in Indonesia. Furthermore, the reviews in this study can be used as a basis for developing marketing strategies for quarantine hotels in Indonesia. They can develop the parts that should be improved and maintained.

5.4. Limitations and Future Research

Though the study has been completed, it has some limitations. The data are drawn from reviews posted on only fifteen hotels based on the D-hots website. Additionally, the data period in this study is short, due to the government regulation starting in 2021. Hence, future research would be better conducted with a larger period of data to procure more accurate findings to the industry.

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