

Unlocking Customer Satisfaction of Halal Restaurant in South Korea through Online Review Analysis

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Abstract: The purpose of this study is to examine customer satisfaction of halal restaurants that have received halal certification from the Korea Muslim Federation (KMF). A total of 1,544 reviews from 11 halal-certified restaurants in South Korea were collected from Google reviews using SCTM 3.0 (Smart Crawling and Text Mining). UCINET 6.0 is used to analyze the network centrality and perform CONCOR analysis. This study quantitatively identified the relationship among five dimensions: halal cuisine, Islamic dining, food menu, service and value. However, Islamic dining, service, and value were positively impacted to customer satisfaction. This study indicates that the Halal label is a significant factor in the dining preferences of halal restaurant customers in South Korea. The results of this study may be useful in marketing halal restaurants in South Korea which have not applied for halal certification from the Korea Muslim Federation.

Keywords: Halal food; South Korea halal restaurant; Halal certification; Customer satisfaction; Semantic network analysis

1. Introduction

Tourism is a highly competitive sector, where the requirements, interests, expectations, and behaviors of foreign tourists have a significant impact on destination development^[1,2]. Consequently, practitioners and experts acknowledge halal tourism's significance as a lucrative business^[1]. In response to the increasing expansion of

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halal tourism and hospitality, a number of foreign locations have devised innovative marketing methods to target this market^[3]. In addition, research indicates that the interest in halal tourism is affected by the ongoing development of the Muslim population^[4]. As the Muslim population accounts for around thirty percent of the global population, and this number indicates that it will grow, the Muslim population is expected to expand^[2].

Some Islamic nations (Saudi Arabia, Malaysia, Iran, etc.) are introducing halal tourism by forbidding illegal Islamic tourist operations^[2,5]. In addition, an increasing number of non-Muslim countries (such as Japan and South Korea) are embracing halal tourism by providing Muslim-friendly goods and services. Meanwhile, the Global Muslim Travel Index survey lists Singapore, South Africa, Thailand, the United Kingdom, Bosnia and Herzegovina, India, Germany, Australia, and Tanzania as the 10 most Muslim-friendly locations among non-Islamic nations^[6].

In recent years, South Korea has seen tremendous growth in the number of overseas Muslim visitors. Specifically, in 2010 there were 113,670 Malaysian visitors and 95,239 Indonesian tourists. In 2014, the number of Malaysian and Indonesian visitors increased to 244,520 and 208,329 respectively. In addition, incoming Muslim visitors to South Korea are anticipated to have an economic effect of around \$40 billion (production cause) and \$20 billion (consumption cause) (value added). As a consequence of its expansion, the Islamic tourism sector in South Korea is anticipated to create 80,000 direct and indirect employment^[1].

As Muslim customers are one of the fastest growing market segments, their needs cannot be ignored by destination marketers and tourism operators^[7]. Consequently, avoiding the need for Muslim tourists in tourism development can result in negative outcomes such as lower incomes and profits, decreased customer satisfaction and loyalty, and diminished competitive advantage. Further, previous studies have shown that the availability of halal products and services in tourist destinations would positively lead to a high level of Muslim travel satisfaction. This would also increase cooperation with Islamic countries in other disciplines, such as medicine, sports, education, culture, media, and trade^[1,8]. As a result, customer satisfaction with halal-certified restaurants can result in future repurchases and patronization^[9].

This study analyzes the consumer satisfaction of halal restaurants in South Korea. The purpose of this study is to examine consumer satisfaction regarding halal tourism, particularly in South Korea, with a focus on halal-certified restaurant. An analysis of online guest reviews and classification of their influencing factors is employed in this study to evaluate the customer networks of halal eateries in South Korea. In addition, the rating system is used to examine the relationship between online customer reviews and customer satisfaction^[10]. As part of this study, qualitative analysis by semantic network analysis is employed to investigate consumer satisfaction. Then this study used quantitative method by exploratory factor analysis and linear regression analysis to examine the factors from semantic network analysis. The outcomes of this study, which is anticipated to disclose the customer satisfaction of halal-certified eateries in South Korea, would be beneficial to researchers and practitioners.

2. Literature review

2.1. Halal restaurants in South Korea

Muslims consume halal food as a core practice. According to the Holy Quran, Muslims are only permitted to consume food prepared using the halal method of killing animals. Halal is the antonym of haram, which is defined as something that is forbidden^[6,11]. The market for halal food and drinks is driven by a number of reasons, including the fast rise of the Muslim population and the increasing awareness of halal cuisine among non-Muslims^[12-14]. The two notions of halal and haram interact to shape the entire way of life of Muslim believers^[15,16].

Thus, halal refers to a broad variety of topics, including not only the intake of food and drink, but also commerce, money, interpersonal connections, and other aspects of conduct^[17].

Approximately 0.4 percent of South Korea’s population is comprised of Muslims, or approximately 200,000 individuals. Some of them are South Koreans who have converted to Islam, but the bulk of them are immigrants from countries where Islam is extensively practiced^[18]. These days, it’s easier than ever to get your hands on some authentic Korean cuisine. The Korea Tourism Organization (KTO) has published a pamphlet with the intention of assisting Muslim tourists who are interested in visiting the nation and experiencing its distinctive approach to food and dining.

According to KTO, there are four designated categories of restaurants^[19]. The first type is halal-certified foods. This certification proves that the establishment adheres to the standards set out by a recognized halal certification organization, such as the Korea Muslim Federation (KMF). The second type of certification is called “self-certified”, and it guarantees that all of the products are halal. These establishments have been given the halal seal of approval by Muslims who run the eateries themselves. Due to the fact that halal-certified restaurants are required to pay a fee to a halal certification organization, self-certified restaurants have a higher quantity of customers than halal-certified restaurants do. This is because the restaurant owner uses only their own halal food components. In addition, the proprietors of self-certified restaurants do not serve pork or alcoholic drinks. The third category is referred to as being Muslim-friendly. This category, the total amount spent at restaurants is higher than the amount spent in previous categories. These eateries have halal food option, however, they also serve alcoholic beverages. As a consequence of this, these eateries are able to serve both Muslim visitors and tourists who do not practice Islam. The absence of pork products makes up the fourth group. Nevertheless, despite the absence of pork in the components, these eateries do not have halal labeling on their packaging, even if the ingredients are all vegetarian^[19]. As a result of these factors, the focus of this study is on halal-approved dining establishments in South Korea.

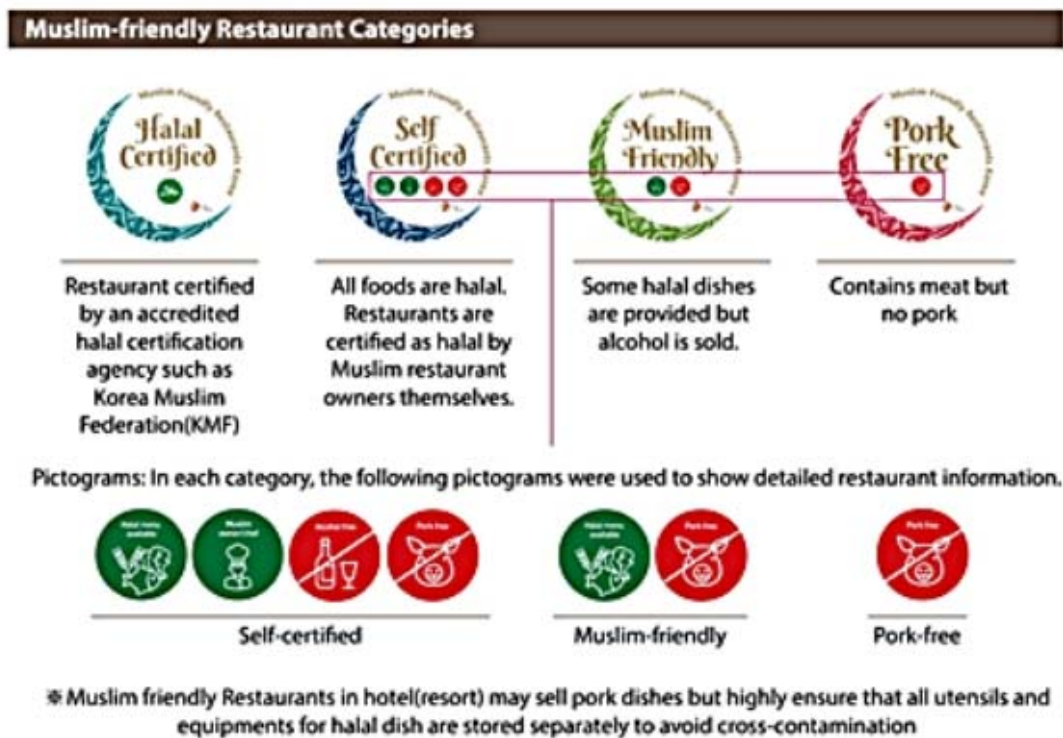


Figure 1. Muslim-friendly restaurant categories.

2.2. Customer satisfaction

The enjoyment that vacationers want or anticipate from the goods, services, and locations they experience is known as satisfaction. It is the appraisal of halal tourist products and service facilities in terms of their significance, or lack thereof, advantages, or deficiencies^[20,21]. Because of the reliance on its customers, the tourism industry is known for its strong customer focus. In the tourist industry, businesses consistently work toward the goal of providing their clients with the highest possible level of service. These businesses or service providers are attempting to maintain a bigger profit margin by operating in this manner. The pleasure of customers is an essential element in achieving success in the tourist industry, particularly in terms of developing long-term offerings that have the potential for expansion^[21,22]. On the other hand, tourist satisfaction may be influenced by several factors, such as service quality and customer value, for example, customer religiosity^[7,21,23]. The challenge of ensuring client pleasure is not simple. Since it is a subjective kind of evaluation, customer satisfaction provides businesses with significant difficulties in developing, gaining, and keeping customer happiness^[21,24].

The satisfaction of tourists might have a good effect. This is due to the fact that pleased visitors are expected to return and suggest the place to others, but unsatisfied tourists are not anticipated to return or make extra purchases, resulting in bad outcomes^[21,22]. According to previous studies, searching through reviews indicates that there is a strong indication that online product ratings are reflective of customer satisfaction^[25]. Based on other studies, review ratings were also used as a proxy for consumer satisfaction as the experience evaluations based on review ratings were used to determine the overall level of satisfaction with the product or service^[26]. This study adopts the overall satisfaction of tourists who emphasize on reviews taken from the Google travel site, which consumer satisfaction will be influenced by halal certification.

2.3. Online reviews

The information provided in online reviews is considered to be more detailed and trustworthy than what is offered by the company itself^[27]. Consumers tend to be more inclined to trust feedback from other customers rather than promotional information from the company. Online reviews serve as a new source of information for prospective customers looking for information about restaurants and tourist destinations. Reviewers can serve as opinion leaders, even if they do not intend to do so^[26]. Customer reviews are a valuable source of information for consumers and can help with ongoing improvements in management^[28]. Negative reviews can be particularly influential and useful for consumers, as they can help prevent negative experiences^[28,29]. Online reviews provide an opportunity to understand the factors that contribute to customer satisfaction. Positive reviews indicate customer satisfaction while negative reviews indicate dissatisfaction^[30,31].

The significance of online reviews is widely recognized in the literature^[31,32]. Researchers have studied the impact of different rating values on consumer preferences and behavior^[10,31,33]. Online reviews have a significant impact on the decision-making process^[31]. Therefore, it's important to study popular online customer reviews to understand customer behavior and preferences, as it is an effective tool for evaluating customer satisfaction^[31,34]. Analyzing customer reviews also provides direct evidence of customer satisfaction levels^[10,35].

3. Methodology

3.1. Data collection

It has become a common practice for customers to provide feedback in the form of reviews or thoughts on

the establishments that they dine in. This is due to the ease and cost-effectiveness of doing so, resulting in a substantial amount of customer review being submitted in this manner^[36]. Customers are able to provide feedback on a restaurant through the use of Internet reviews, which enables other people who may be interested in eating there to learn more about the establishment in question.

Google Travel is a trip planning tool that was built by Google for the web, and its client reviews are being used as a source for this research^[37]. For the purpose of this particular study, data were collected from halal-approved eateries situated in the cities of Seoul and Gyeonggi-do. The opinions of consumers who have previously patronized halal-approved eateries in Korea were solicited for the purpose of this study. To gather the data, SCTM 3.0, also known as Smart Crawling and Text Mining, is a program that was developed by the Wellness & Tourism Big Data Institute of Kyungsoo University specifically for the purpose of web crawling and data processing^[10,38]. The period of data collection is from January 2016 to October 2022. Halal tourism usually has a large number of visitors; however, between 2020 and 2022, it has been dramatically reduced^[39]. For an unbiased translation result, only the English comments were selected, and the review without text has been removed^[40]. Thus, more than thousand data were collected prior to COVID-19 and post-COVID-19 in 2022 as part of this study. A total of 1,544 reviews from 11 halal-certified restaurants in South Korea were collected from Google reviews. Ten of these restaurants are located in Seoul and one is located in Gyeonggi-do. Although there are a total of 13 halal-certified restaurants in South Korea, data is only available on Google reviews for 11 of these restaurants.

3.2. Data analysis

Data analysis for this study is divided into three distinct stages, as illustrated in **Figure 2**. During the first step of the process, the revised data is retrieved, and a list of the 60 most important terms is chosen for analysis. After then, the approaches for text mining are used to do the pre-processing of the data. The sentences that are included in the dataset are broken down into individual terms and ranked according to the frequency with which they appear^[10,38,41].

In the second part of the research, a semantic network analysis is performed on the most frequently occurring terms. These words are chosen based on the relationship that each word has to the topic of the study^[42,43]. Qualitative analysis might be said to have taken place at this phase because it focused on the text. In this study, the centrality analysis (Freeman's degree and eigenvector) as well as the CONCOR analysis are carried out in order to identify the significance of the top frequencies in relation to their centrality values and, secondly, to determine the dimensions related to customer perception and cognition of halal-certified restaurants in South Korea^[42,44,45]. This research was carried out in order to answer the following questions. (1) What are the top frequency keywords related to halal-certified restaurants? (2) What are the dimensions related to customer perception and cognition of halal-certified restaurants^[38]. After that, the frequency of words is computed and organized into a matrix for semantic network analysis. Then, UCINET 6.0 is utilized to execute CONCOR analysis and examine the network's centrality. The culmination of the process is shown graphically by Netdraw, which highlights the words with the highest frequency^[38].

As the third step, quantitative analysis is carried out in this investigation using exploratory factor analysis and linear regression analysis as the primary methods. To determine how each factor affects customer satisfaction, exploratory factor analysis is used to reduce the words from online review to find commonalities between variables. Then, linear regression analysis is used to determine how each variable affects the overall satisfaction of customers^[26]. In this study, we investigate the elements that contribute to satisfied customers. The ratings that are offered by customers' reviews on Google Travel are used in this manner to measure the level of satisfaction felt

by customers. Every review has a score ranging from one to five, with one signifying the reviewer being the least satisfied and five representing the reviewer being the most satisfied^[38,42,46,47].

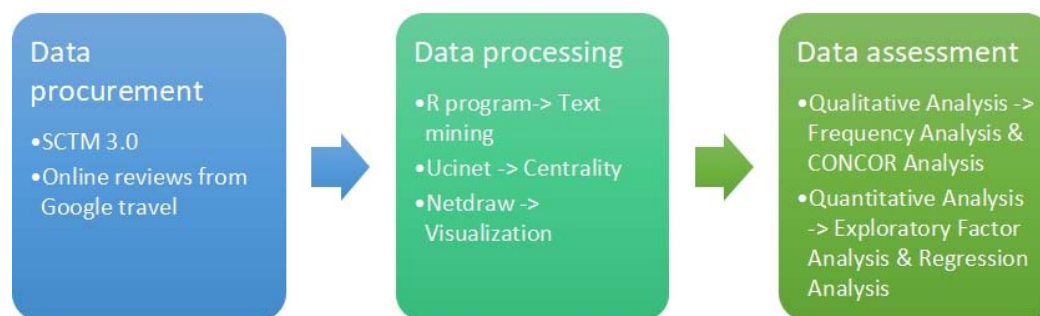


Figure 2. Research flow.

4. Results

4.1. Analysis of word frequency

Text mining was used to organize and collect 1,544 data points from 11 halal-certified eateries in South Korea. These establishments were selected at random. Then, the top 60 most frequent terms were identified, categorized, and laid out as shown in **Table 1**. The word “food” appears 707 times, making it the most frequent

Table 1. Frequency of top keywords for halal-certified restaurants

No.	Word	Frequency		Freeman degree centrality		Eigenvector centrality	
		Freq.	Rank	Coefficient	Rank	Coefficient	Rank
1	Food	707	1	20.936	1	0.475	1
2	Good	445	2	13.242	2	0.328	2
3	Delicious	374	3	10.608	3	0.263	4
4	Turkish	279	4	8.694	6	0.218	6
5	Halal	262	5	10.572	4	0.296	3
6	Restaurant	258	6	9.633	5	0.234	5
7	Taste	258	7	8.072	7	0.198	9
8	Kebab	230	8	5.999	12	0.126	15
9	Place	205	9	7.901	8	0.203	8
10	Korean	193	10	7.67	9	0.205	7
11	Eat	158	11	4.268	18	0.104	18
12	Menu	146	12	6.511	10	0.157	11
13	Itaewon	140	13	6.243	11	0.159	10
14	Staff	137	14	4.877	14	0.127	14
15	Price	135	15	4.731	16	0.119	17
16	Great	123	16	4.829	15	0.137	12
17	Friendly	111	17	4.707	17	0.125	16
18	Service	107	18	5.048	13	0.131	13
19	Best	95	19	3.195	24	0.083	23
20	Tasty	89	20	3.073	26	0.081	25
21	Expensive	89	21	2.561	31	0.063	30
22	Chicken	87	22	3.926	19	0.084	21
23	Lamb	85	23	3.097	25	0.067	28
24	Lunch	80	24	2.939	27	0.07	27
25	Seoul	80	25	3.463	22	0.093	19
26	People	79	26	3.378	23	0.081	24
27	Time	75	27	2.768	29	0.061	31
28	Small	73	28	3.5	21	0.09	20
29	Recommend	57	29	3.512	20	0.084	22
30	Meal	54	30	2.512	32	0.057	33

of all the words. This first finding is acquainted with this research, which focuses on the word “halal” in relation to food. The terms “excellent” and “delicious” come in at positions two and three, respectively, with a frequency of 445 and 374, respectively. The term “Turkish” comes in at number four, with a frequency of 279 times. While this is going on, the term “halal”, which is the primary focus of our investigation, is in the fifth spot with a frequency of 262 occurrences. The client base is not entirely comprised of Muslims, which is the primary reason why this term is not in the top place. Some of the customers are Korean and are not familiar with the word “halal”, and some of the customers are tourists who are not Muslims. Prior studies have used frequency top keywords to determine the frequency of words based on online reviews^[10,42,48]. Word frequency statistics are derived from online reviews and can be used to determine the frequency of words. This study can identify the relevant keywords from the halal restaurant in South Korea as the main topic of the study based on the frequency of the words^[49].

The network visualization result, as shown in **Figure 3**, indicates the frequency of a word based on the size of the label, such as “food”, “good”, “delicious”, “turkish”, “halal”, “restaurant”, “taste”, “kebab”, “place”, and “korean”. Due to the fact that these ten words are the top ten high-frequency words, their nodes are larger than the nodes of other words, and they appear in the center because they are related to other words and frequently written. The Ucinet software was used to construct a high-frequency keyword into a network visualization (**Figure 3**). A network’s size is directly proportional to the centrality of its nodes, and its connectivity is directly proportional to its frequency of co-occurrence^[50,51].

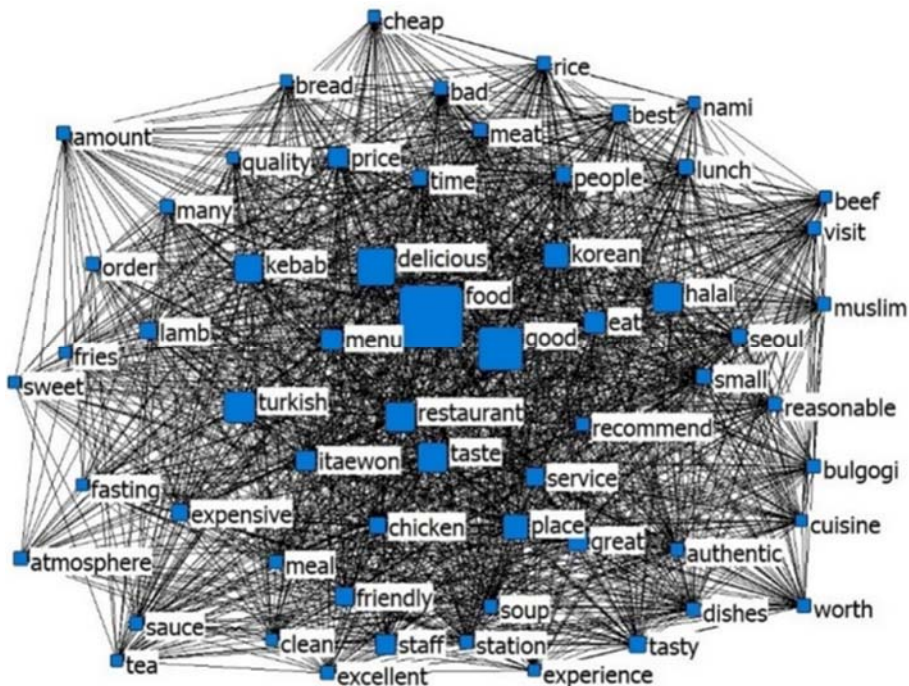


Figure 3. Network visualization of top keyword frequency.

4.2. Centrality (Freeman’s degree and eigenvector) analysis

Freeman’s degree centrality used as one of indicators, which assesses the degree of connection between one node and the other nodes in a network^[46,52]. The degree centrality is a straightforward metric that measures the number of neighbors a node has. It gauges the extent to which a word is central and influential, with more connections resulting in a greater impact on other words and a stronger dominant position. The eigenvector centrality takes the idea of connective centrality further by considering not just the number of connections, but also the significance of the connections^[53,54]. The frequency indicator indicates the frequency of the word based on an online review.

Table 1 also presented a comparison of the frequency of terms that are among the most often used and the centrality of those words. The words demonstrating centrality indicate the import-export link between impact and the relation between their nodes. The results of a comparison between Freeman’s centrality and eigenvector centrality are presented in **Table 1**, which lists the top 60 most frequent terms. The term “food” was found to have the highest frequency, as well as the highest coefficient of both Freeman’s degree centrality and eigenvector centrality. This suggests that “food” has a stronger link to another word than any other term^[55]. As a result of the fact that this investigation is centered on the topic of halal food, the term “food” is obviously an everyday word that is pertinent to the topic at hand and has a strong link with the other words. In addition to having a high frequency, the terms “excellent”, “delicious”, “halal”, and “restaurant” also have a high coefficient of eigenvector centrality, which suggests that these words are related to other high frequency words. A high coefficient of Freeman’s degree is also found in the terms “taste”, “good”, “halal”, “service”, and “itaewon”.

The findings of the comparison between frequency, Freeman’s degree centrality, and eigenvector centrality have demonstrated that the extracted words are relevant to this research^[10,43]. In the meanwhile, this investigation is centered on the topic of restaurants that have been certified as being halal, and the findings indicate that the terms are connected to halal cuisine, restaurants, and eating. In addition, the data from Freeman’s degree centrality and eigenvector centrality have demonstrated that there is a correlation between the keywords and halal-approved dining establishments. In addition, the findings shown in **Table 1** demonstrate that the degree centrality and eigenvector centrality rankings follow a pattern that is analogous to the findings on the frequency of the major terms.

4.3. CONCOR analysis

The CONCOR analysis was used to retrieve the top 60 most frequent words in **Figure 4**, which were then grouped together into four distinct clusters. The four clusters are the results of UCINET’s software, which divides it into four clusters. There is no precise number of how many clusters CONCOR should be divided, since this is a qualitative analysis, however some previous studies have resulted in four clusters from the UCINET software^[43,56-58]. To evaluate the degree of similarity that exists between groups in order to carry out correlation analysis, CONCOR analysis is utilized^[46]. Therefore, the method was utilized in this study in order to identify

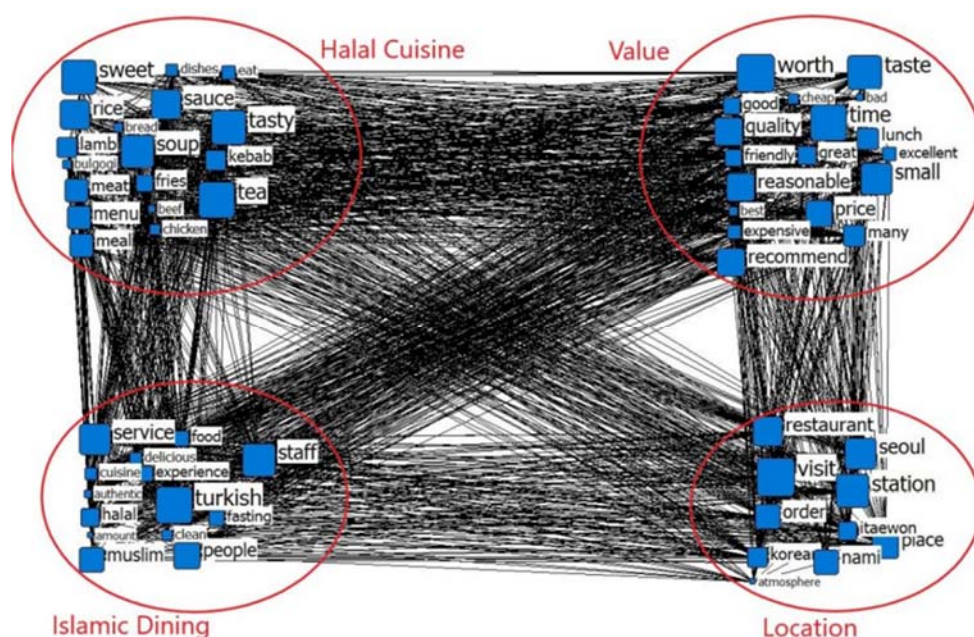


Figure 4. Visualization of CONCOR analysis.

different clusters of top frequency words which reflect the perception and interest of halal-certified restaurants in South Korea. Taking into account their similarity in position and mutual relationship, the words were grouped accordingly^[59].

The CONCOR analysis was used for this study in order to discover clusters of top frequency terms that indicate perceptions of and interest in halal-certified restaurants in South Korea. This analysis was carried out in order to identify clusters of top frequency phrases. In this kind of analysis, the extracted words are organized into groups according to how similarly they are positioned and how closely they relate to one another^[60,61]. The data are then separated in **Table 2** after the extracted terms and important words have been grouped together.

Table 2. Clusterization of CONCOR analysis

Clusters	Extracted words	Significant words
Halal cuisine	Lamb/bulgogi/meal/amount/meat/beef/menu/sauce/fries/kebab/chicken/dishes/sweet/bread/soup/rice/tea/eat/tasty	Lamb/meal/beef/menu/sauce/fries/kebab/chicken/dishes/sweet/bread/soup/rice/tea/eat
Islamic dining	Food/delicious/clean/halal/experience/authentic/cuisine/Turkish/service/people/staff/Muslim/fasting	Food/delicious/clean/halal/experience/authentic/cuisine/Turkish/staff/Muslim/fasting
Location	Nami/Seoul/visit/station/place/order/Korean/restaurant/Itaewon/atmosphere	Nami/Seoul/visit/station/place/Korean/restaurant/Itaewon
Value	Many/lunch/expensive/worth/price/time/reasonable/good/recommend/cheap/excellent/great/best/bad/friendly/small/quality/taste	Many/expensive/worth/price/time/reasonable/good/excellent/great/best/bad/friendly/small/quality

As the results, the CONCOR analysis divided the review data into the four main clusters: halal cuisine, Islamic dining, location, and value. The corresponding word clusters are shown in **Table 2**. Meanwhile, in the **Table 2** clearly demonstrates that only a limited number of the extracted words are significant words.

4.4. Factor analysis

Factor analysis is an advanced statistical approach that operates on the basis of correlation. It is utilized in this study to demonstrate the connections between variables based on the variation of terms found in customer evaluations of halal-certified restaurants in South Korea^[10,62]. An oblique rotation method is utilized in factor analysis, with the end goal being the reduction of a large number of variables into a smaller number of component variables. When extracting the factors, common factor criteria are put to use, and for the final model, a factor loading threshold of 0.5 is maintained as a requirement^[63]. As a direct consequence of this, a total of 18 terms were removed from the original list of 60 keywords.

The findings of the factor analysis are shown in **Table 3**, along with a KMO (Kaiser Meyer Olkin) value of 0.603, which is a value greater than 0.6^[64,65]. Therefore, the conclusion that can be drawn from this finding is that the application of factor analysis was appropriate for this investigation. The value of the Bartlett's test's X^2 parameter was 2,312.518, and the overall significance of the correlation matrix was found to be less than 0.001 ($p < 0.001$). This result suggested that the data did not form an identity matrix and that the distribution of the data was multivariate normal^[66]. Additionally, the multivariate normal distribution of the data was indicated by this result. As a consequence of this, the utilization of exploratory factor analysis is appropriate. Based on the factor analysis, the five factors are "halal cuisine (Factor 1)", "Islamic dining (Factor 2)", "food menu (Factor 3)", "service (Factor 4)", and "value (Factor 5)". Factor 1 consists of "sauce", "kebab", "lamb", "fries", and "meat", which are related to halal cuisine, which is predominantly consumed by Muslim customers. Factor 2 consists of "korean", "halal", "authentic", "food", and "muslim", which are related to Islamic dining. Note that the word "korean" appeared due to the fact that the halal restaurants in this study are located in Korea. Factor 3 consists of "soup", "lunch", "bread", and "menu", which are related to ordinary food menus. Factor 4 consists of "staff" and

“friendly”, which are related to customer service. Finally, Factor 5 consists of “best” and “good”, which refer to value.

Table 3. Result of the factor analysis

	Word	Factor loading	Eigen value	Variance (%)
Halal cuisine	Sauce	0.613	2.072	11.509
	Kebab	0.609		
	Lamb	0.542		
	Fries	0.533		
	Meat	0.531		
Islamic dining	Korean	0.645	1.839	10.217
	Halal	0.644		
	Authentic	0.578		
	Food	0.502		
	Muslim	0.479		
Food menu	Soup	0.732	1.443	8.017
	Lunch	0.645		
	Bread	0.640		
	Menu	0.531		
Service	Staff	0.837	1.386	7.697
	Friendly	0.824		
Value	Best	0.834	1.330	7.391
	Good	0.793		

KMO (Kaiser Meyer Olkin) = 0. 603
 Bartlett’s chi square (p) = 2312.518 (p < 0.001)

4.5. Regression analysis

Following the factor analysis, linear regression was employed to investigate the level of customer satisfaction, as can be shown in **Table 4**. Furthermore, linear regression was used after the factor analysis to analyze guest experiences and satisfaction^[10,38,48]. Halal cuisine (H), Islamic dining (I), food menu (F), service (S), and value (V) are the five independent variables that are used in the linear regression analysis. The total variation that could be attributed to these five categories was 5% ($R^2 = 0.05$), and the estimated value had a standard error of 1.051 when it was determined. Because there are many factors that can influence customer satisfaction but they were not included in the five clusters due to their low frequency in the collected data, the correlations between independent and dependent variables were relatively low. This is because of the many factors that can affect customer satisfaction. It seems hard to incorporate all of the relevant factors when examining output variables from text mining data, such as customer opinion. According to the previous studies, the R^2 value may be rather low^[67-69].

Table 4. Result of linear regression analysis

Model		Unstandardized coefficients		Standardized coefficients	t
		β	Std. error	β	
1	(Constant)	4.152	0.027		55.258
	Halal cuisine (H)	-0.163	0.027	-0.151	-6.098***
	Islamic dining (I)	0.076	0.027	0.071	4.090***
	Food menu (F)	-0.006	0.027	-0.005	-0.214***
	Service (S)	0.084	0.027	0.078	3.127***
	Value (V)	0.083	0.027	0.078	4.503***

Notes: Dependent variable: Customer Satisfaction (CS); $R^2 = 0.052$; adjusted $R^2 = 0.05$; $F = 16.803$; *** $p < 0.001$

“Islamic dining (I, $\beta = 0.071, p = 0.000$)”, “Service (S, $\beta = 0.078, p = 0.000$)”, and “Value (V, $\beta = 0.078, p = 0.000$)” are significant at the $p < 0.001$ level, which indicates a positive relationship with customer satisfaction.

Based on the standardized β , the regression equation is:

$$CS = 4.152 - 0.151 H^{***} + 0.071 I^{***} - 0.005F + 0.078S^{***} + 0.078 V^{***}$$

(1)

5. Discussion and implication

5.1. Discussion

This study examined customer reviews of halal-certified restaurants in South Korea in order to determine customer satisfaction. In order to conduct this study, several steps were involved. Based on the results of the frequency analysis, 60 words with the highest frequency were examined for degree and eigenvector centrality. The purpose of this study was to investigate consumer satisfaction with halal restaurants that have gained halal certification from the Korea Muslim Federation (KMF) by examining online reviews.

The CONCOR analysis classified these keywords into four groups: “halal cuisine”, “Islamic dining”, “food menu”, and “Value”. As a result of exploratory factor analysis, 60 words were reduced to 18 words, and then resulted into five categories, namely “halal cuisine”, “Islamic dining”, “food menu”, “service”, and “value”. As a result, the clusters between CONCOR and factor analysis were able to be correlated; for instance, “halal cuisine” with “halal cuisine”, “Islamic dining” with “Islamic dining”, “food menu” with “food menu”, and “value” with “value”. Islamic dining and halal cuisine are quite familiar, but the word clustering is not the same, halal cuisine focuses on the name or type of food, as stated in a previous research study that “All Muslims are obliged to consume halal cuisine”, which implies that cuisine refers to “food”^[70]. Meanwhile, the Islamic dining cluster places more emphasis on the experience or activities of Muslim or Islamic people while they are eating^[71]. Meanwhile, value factor represents customers’ perceptions of the worth of the product or service^[53].

In the linear regression analysis, halal cuisine was giving negative relation to customer satisfaction. There was a lack of satisfaction with this factor among customers. As discussed in the previous study, local cuisine has a negative relationship with customer satisfaction^[72]. According to the findings of other studies, the desire to deviate from routine and participate in novel experiences was associated with the drive to consume regional food^[72,73].

According to studies, Islamic dining is associated with higher levels of customer satisfaction. To put it another way, when it comes to eating food, the majority of consumers are pleased with this aspect of the experience. As the result shows that Islamic dining has a positive correlation with customer satisfaction, it shows that South Korean customers are satisfied with their dining experience in halal restaurants. As a result, customers will not only be satisfied, but also content with a dining experience that exceeds their expectations^[74]. Thus, dining is an important factor in customer satisfaction, and once they are satisfied, they are likely to return^[74].

Food menus are negatively affecting customer satisfaction. Another study shows similar findings, which indicate that poor and limited food choices negatively impact customer satisfaction^[75]. This aspect may be problematic if there is not a large variety of food menu choices, which results in the customer being dissatisfied.

Service gave positive relation to customer satisfaction. Regarding to this, prior research also has same result. Prior study proposed that service increases customer satisfaction and revisit intention^[76]. It is common knowledge that both the actual service quality and the customer’s perception of that service have a beneficial impact on overall customer satisfaction, and this is especially true in the context of dining establishments. Customers are more inclined to seek out restaurants that are tied to their emotions and social ties since these establishments are more likely to have a pleasant atmosphere, be clean, and have a good design^[77].

Value also giving positive impact to halal restaurant in South Korea. The value factor has the highest

standardized coefficient, which means that this experiential aspect of restaurant customers is the most important factor that is significantly related with customer satisfaction. For example, consider the following customer reviews: “Good place to eat halal food”, “Great food and friendly staff. Good portions as well”, and “The best place in Seoul for kebab sandwiches or any other type of food they have. I hardly recommend it”. As a result of this positive attitude, they are more likely to continue to engage with the company or brand. Customers who believe they are receiving more than they expected are likely to hold a positive opinion of a brand or company^[78].

5.2. Theoretical implications

There have been several studies conducted in the tourism and food service industries utilizing big data to identify critical characteristics that determine the satisfaction of consumers^[10,45,48]. On the other hand, there are not many studies that use big data to halal-certified eateries in South Korea. Researchers have used online reviews to model and test the influences of reviews, products, and consumer characteristics on consumer outcomes in order to gain a better understanding of consumer behavior^[79]. By using quantitative analytic methods, this study identified different factors that contribute to both customer satisfaction and dissatisfaction in halal restaurants in South Korea^[10]. This study focuses on online customer reviews derived by exploratory factor analysis, which has resulted in some factors that can have a significant effect on customer satisfaction. Specifically, this study used exploratory research in order to eliminate unnecessary words and identify the most important factors that contribute to customer satisfaction at halal restaurants in South Korea^[80]. As a result of factor analysis, it can be concluded that halal cuisine and food menus have a negative correlation with customer satisfaction. This can be attributed to a limited range of food choices. Nevertheless, halal cuisine, or Muslim food menus in Korean halal restaurants, reveals that customers are not satisfied with the choice of food since South Korea is not a majority Muslim country^[81]. Additionally, South Korea is still developing its reputation as a destination for Muslim tourists^[81,82].

As a result, this study can be considered a research project that used observational data to understand the satisfaction of customers at halal-certified restaurants. Online reviews are one of the new tools that can help halal restaurants boost sustainable and lasting growth. This is because it has significant economic value and can save time and effort in collecting data^[35]. CONCOR analysis was performed to categorize the understanding and awareness of Internet users. These data help clarify the implications for empirical application. For instance, the dimensional analysis explored through the CONCOR analysis and factor analysis can provide a reference for identifying key attributes that represent the customer’s experience of a halal restaurant^[41].

In addition, this study emphasizes that this research expands the field of semantic network analysis and has academic significance based on some previous studies^[10,42,48]. Due to the significance of the halal restaurant segment in the tourist industry, this study employs online review analytics to analyze the experience and satisfaction of halal restaurants^[83]. This study may serve as an example of how online customer reviews can be applied to the halal tourism industry. In particular, for South Korea’s role as a Muslim tourist destination, and for providing novel perspectives on the subject.

5.3. Managerial implication

By leveraging social media and Internet channels, customers may voice their ideas with greater freedom and candor than in the past. Businesses can obtain a competitive advantage by altering their tactics in light of this plethora of information. Customer happiness is essential to success in social media space’s intensely competitive markets^[84]. In the hospitality and tourism industries, achieving high levels of overall client satisfaction is an essential component.

As a consequence of these findings, this research demonstrates the significance of halal food to the level of customer satisfaction experienced by Muslim consumers in South Korea. This has significant repercussions for the formulation of marketing strategies for businesses in the tourist industry, particularly those operating in the foodservice sector. For instance, organizations involved in tourism and hospitality may create a hospitality and tourism market that is open to the sale of Shariah-compliant travel items^[85]. There is a significant opportunity for businesses involved in tourism to construct and develop novel modes of hospitality and tourism catering specifically to Muslim customers. If businesses in the tourist and hospitality industries recognize, cultivate, and advertise their capacity to satisfy the requirements of Muslim customers, this can increase the likelihood of those customers choosing those businesses when it comes to vacationing^[86].

The findings of this study also can be beneficial in marketing halal restaurants in South Korea that have not filed for halal certification from the Korea Muslim Federation. This certification is required in order to serve halal meat. In this study, it was found that halal labels play a very important role in influencing Muslim consumers' eating decisions in South Korea^[87,88]. In addition, the evaluations contained in this research might serve as a foundation upon which to build marketing strategies for halal tourism in South Korea. As a result of this study, it will be possible to determine what factors contribute to the satisfaction of customers in halal-certified restaurants. Alternatively, it can serve as a suggestion for managers to identify the factors that dissatisfied halal-certified restaurant patrons in South Korea. By doing so, they will be able to improve the quality of their products and services in order to improve customer satisfaction.

6. Conclusions

A restaurant's reputation may be enhanced or endangered by the satisfaction of consumers resulting from their opinion^[10]. It is important to note that negative comments can negatively impact a restaurant's image and influence potential customers to look for competing services or products^[89]. In recent years, consumers have increasingly used the internet to share their experiences with various companies, especially regarding the services they receive. Purchasing decisions can be influenced by consumer opinions posted online, which express the reliability and credibility of the consumer^[89].

The purpose of this study is to forecast total customer satisfaction using semantic network analysis. The data for the study comes from a sample of 1,544 online reviews. The phrases "food", "excellent", "delicious", "Turkish", and "halal" were the five that came up the most frequently in the conversation. Out of all of the independent factors that were looked at, this research found that providing good service and offering good value had the biggest beneficial impact on total customer satisfaction. In addition, Islamic dining made a beneficial contribution, albeit a more restricted one, to the overall contentment of the customers. Although this had a substantial effect on the level of customer satisfaction, the relationship between halal cuisine and the food menu was unfavorable.

7. Limitations

This study focuses exclusively on halal-certified restaurants in Korea and has a limited sample size. Due to the COVID-19 pandemic, South Korea strengthened its borders, preventing international tourists from entering the country. As a result, the number of people visited South Korea and dine at halal-certified restaurants is limited.

Ethics approval and consent to participate

Not applicable.

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Conflict of interest

The authors declare no conflict of interest.

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