A Comparative Study between User Generated Content (UGC) and online survey for measuring customer perception toward service quality in hotel industry: Case of Tolip Hotel in Egypt

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A Comparative Study between User Generated Content (UGC) and online survey for measuring customer perception toward service quality in hotel industry: Case of Tolip Hotel in Egypt

Dr. Sherif Taher Mohammed Farid   *Dr. Ghada Moustafa Mousa*

Abstract:

The research objective is to examine the value of UGC data specifically the online customer reviews. This can be achieved by analysing the online reviews on the online hotel booking website (Booking.com) using sentiment analysis (2157 online reviews) and comparing the results with the online survey data (315 respondents) aiming to find out whether it is possible to replace the traditional online survey with the UGC data to evaluate the hotel performance in terms of service quality perceptions of the customers to gain the advantages of the online reviews mentioned in previous studies. Moreover, the main focus is to identify the hotel service quality attributes which can be extracted from the online reviews with their polarity and compare them with the results of the online survey to find out if they are consistent. In addition, exploratory factor analysis using Principal Component Analysis with varimax rotation was conducted to examine the dimensionality of service quality SERVPERF instrument in an Egyptian environment for the online survey conducted in this study. The results show that there are no significant differences between the online survey results and the sentiment analysis results from online customer reviews. It is evident from the research results that online customer reviews could provide the management in hotel industry with valuable information in order to understand the perceptions of customers toward service quality which ultimately leads to customer satisfaction. PCA conducted on online survey data illustrates that "Tangibility" is the most important dimension of service quality perception which was also consistent with the attributes extracted from online reviews. Finally, some recommendations are introduced to each branch of Tolip hotel to improve service quality and support decision making.

Keywords: Tourism sector, Hotel industry, User Generated Content (UGC), online customer reviews, Sentiment Analysis, Online survey, SERVPERF, customer perception, Service Quality, Meaning Cloud, Tolip Hotel, Egypt.

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

I. Introduction:

Tourism is an important source of national income and foreign currency for the Egyptian economy. Based on the Travel & Tourism Competitiveness report 2019, Egypt had the fourth-highest rank in the Travel & Tourism Competitiveness Index (TTCI) , moving up nine places to rank 65th globally. Based on this report, Egypt was the top scorer of "Environmental Sustainability" and "Cultural Resources and Business Travel" and the most improved in "Safety and Security", "Ground and Port Infrastructure" and "Natural Resources". The hotel industry is an important part of this sector. Based on the Economic and Social Performance Monitoring Report 2018/2019 issued by the Ministry of Planning and Economic Development and the yearly report 2018/2019 by the Central Bank of Egypt, hotel/restaurant industry achieved the highest growth rate of 20% with a contribution of 9.8% of national GDP.

As in many industries, hotel industry is confronting various competitive challenges to survive and the keyword here is customer satisfaction. No hotel property will survive and grow if they are not oriented by the consumer to meet their needs and expectations to enhance the image of the property (Bayad Jamal Ali et.al 2021). There are many attributes to measure hotel performance in terms of its customer satisfaction (Carol Hargreaves 2015). There has been a vast number of studies indicated that the most important indicator to measure the customer satisfaction is the service quality (Kandampully,J. 2002; Katerina Berezina et.al 2015) and different models of service quality measurements are introduced in research (Parasuraman et al. 1988; Yi 1991)..

Traditionally service quality was assessed quantitatively by using customer comment cards and surveys. However, the development of the Internet and User-Generated Content (UGC) provides a strong opportunity for a qualitative approach to service quality. Online reviews available on online hotel booking websites like booking.com, TripAdvisor, Kayak became one of the most important sources of Consumer-Generated Content (UGC) such as online hotel reviews posted by the customers about their visit experience. They have greatly changed the way

customer obtaining hotel information, comparing multiple alternatives, and making consuming decisions) Carol Hargeaves,2015; Jain Dong et.al 2014; Paul Phillips and Krystin Zigan,2016; Nadeem Akhtara et.al,2017; Kateria Berezina et.al 2015). On the other side, they are used by the hotel management to evaluate performance and rationalize their decisions (Mendes Filho L.A.M et.al 2012). They provide valuable managerial information as they constitute immediate responses expressed from the customer perspective. UGC have also been considered to be an important data source for research of service quality and customer satisfaction because they are objective and do not involve sampling biases as in traditional surveys (Markus Schuckert et.al, 2015). Dong,H. Li and X.Zhang(2014) suggested comparing the findings of research on online hotel reviews with the traditional survey related to customer perceptions.

This research objective is to is to examine the value of UGC data by analyzing the online customer reviews on the online hotel booking website (Booking.com) using sentiment analysis and compare the results with the traditional online survey data aiming to find out whether it is possible to replace the UGC data with the traditional survey to assess the service quality perceptions of hotel customers. The focus is to identify the hotel service quality attributes which can be extracted from the online reviews with their polarity and compare them with the results of the online survey to discover if they are consistent. The dimensionality of service quality SERVPERF instrument in Egyptian environment is also examined in this study and its results are used in the comparison process of the two data sources. The next sections of the research contain the following: section Ⅱ contains the research motivations. Section Ⅲ presents the research questions. Section Ⅳ provides the literature review of the service quality in hotel industry, User Generated Content (UGC) and sentiment analysis specially in hotel industry and the researches that comparing between the traditional marketing research methods and online customer reviews. Section Ⅴ illustrates the methodology of the research followed by Section Ⅵ in which the research questions are answered and

research recommendations are provided. Section Ⅶ contains the conclusion and finally, practical implications and future work are provided in section Ⅷ.

II. Research Motivations:

1. Examine the UGC as a source of data to see if it can provide beneficial information to management specially in tourism and hotel industry as in traditional marketing research data sources like surveys and interviews to improve performance and support decision making specially in the circumstances of COVID-19 in which collecting data by distributing questionnaires and making interviews became a risky and unpreferable process. And even online surveys are used, the problem of weak responses still in place.

2. Although there are many studies have been conducted under the topic of sentiment analysis, Rohani et.al (2020) indicate that 46 percent of researches on tourism-sentiment analysis were conducted in Europe, followed by Asia (21 percent), North America (8 percent), South America (7 percent), Australia (4 percent), but only 3% in Africa (Rohani Hashim et.al, 2020). The authors hope adding value through this research in the area of sentiment analysis studies in Africa and contributing in a tourism sector which is considered one of the most importance sectors for the economy of countries all over the world.

III. Research Questions:

In this research, we are aiming to get answers for <u>the following two main questions:</u>

1. Can the UGC data; online customer reviews provide valuable information about the customer service quality perceptions in hotel industry? This question can be answered through the following sub questions:
   1.1 What are the most frequently mentioned service quality attributes by hotel customers?
       in the online customer reviews?
   1.2 What are the customers' opinions about each attribute?

1.3 Based on the results obtained from the online reviews sentiment analysis, what are the recommendations that can be given to each branch of Tolip hotel to improve their performance and guiding them to the upcoming business strategies?

2. Can the online customer reviews replace the traditional surveys used in marketing research? This question can be answered through the following sub question:

2.1 IS there a significant difference between the results obtained from the online survey and the results extracted from the online customer reviews using sentiment analysis?

2.2 Are the extracted attributes from the online reviews consistent with the most important dimensions of service quality examined in the online survey using PCA?

IV. Literature Review:

4.1 Service Quality in hotel industry

All hotels try to satisfy their customers' needs and wants to achieve customer satisfaction which is defined as "a person's feelings of happiness or sadness that results from comparing a product's perceived performance or outcome with his/her expectations" (Kotler and Keller, 2009).

Customer satisfaction is considered the most important goal to hotels and resorts as they always try to maintain the relationship with their consumers, which is meeting the customer expectations. So that hotels use instruments called SERVQUAL and SERVPERF to measure service quality in hotels and try to enhance customer perception toward the quality of services in hotels and meet customer expectations which serve as a baseline, or anchor, against which the actual experience is compared (Yi 1991).

Customer expectations for the quality of hotel services are formed based on many factors surrounding the customer, including advertising and word of mouth from relatives and friends, as well as customers' social networking reviews, brand reputation, and even past service experience. In addition, if expectations are met or exceeded, service quality

is perceived as satisfactory and this is what prompts hotels to use different quality measurement models including SERVPERF, which is initially based on ten dimensions of service quality (Parasuraman et al. 1985). These dimensions have been reduced to five general dimensions namely tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al. 1988). By looking at the various references and previous studies, researchers can reach the concept of these dimensions, where reliability is defined as the implementation of hotel services accurately in accordance with standards, while tangibles are defined as the appearance and arrangement of facilities and assets within the hotel, as well as one of the most important factors of hotel service quality is the responsiveness which means the responsibility and willingness of employees to providing prompt and correct services from the first time and every time in addition to empathy which is defined as taking individual notice and intimacy with customers and finally assurance, which is building trust with customers and staff efficiency to install confidence in customers (Grönroos, 1984; Parasuraman et al., 1985).

As per the above reasons, service quality assessment is a complicated process in itself while there is more complexity in hotel service quality assessment. Due to the high fluctuations in demand for hotels and the intensification of competition, this industry is very sensitive and needs to continue to follow up on customer feedback and level of satisfaction with service quality through the use of different methods of data acquisition (Chen & Yeh, 2011) which researchers found through the current study It consists of electronic customer reviews. In addition, identifying the strengths and weaknesses of hotels in providing service can help us improve quality, which helps in the continuation of these hotels in light of the intense competition between hotels while maintaining the quality of their hotel services constantly (Ku et al., 2011). Service quality has both direct and indirect effects on customers and their behavioral intentions towards the hotels under study (Ladhari, 2009). Most hotels that try to attract customer satisfaction have a better place in the hotel efficiency rating (Assaf & Magnini, 2012) and can undoubtedly influence customer behaviour.

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

(Cronin and Taylor,1992; Cronin and Taylor,1994) emphasized that service quality is only directly affected by perceptions of service performance. Accordingly, they have developed a Service Performance Tool (SERVPERF) which seems to give better results than Quality of Service model. Likewise, (Boulding et al.,1993) rejected the use of expectations as a comparison criterion and recommended that performance be measured only for service quality. In the more recent transcriptome study of SERVPERF (Brady et al.,2002) suggested that service quality can be measured using a performance-only approach rather than a gap-based measures. In this direction, many of the research presented below revealed that SERVPERF was more appropriate for measuring service quality in several service industries, including the hotel industry. In addition, (Marshall and Smith,2000) showed that SERVPERF has constructive validity in retail shopping. Also (Jain and Gupta,2004) compare measures of service quality and SERVPERF in the context of fast food. They found that the SERVPERF scale was more convergent and distinct between the valid measure of service quality and also (Johns et al.,2004) measured the quality of service provided by travel agents using the service quality scale. However, they indicated that only performance scores (SERVPERF) showed better reliability and validity than variance scores. (Karatepe and Avcı,2002) used SERVPERF to measure service quality in the hotel industry. (Luk and Layton,2004) conducted a similar study in hotels. They determined that performance scores are superior to performance gap scores in terms of a reliable measure of service quality. (Nediri and Hussain,2005) used the SERVPERF scale to measure the quality of service provided by hotels. The study results support that SERVPERF is a better indicator of service quality, and that only a performance measure of service quality is sufficient.

4.2 User Generated Content (UGC) and Sentiment Analysis in Hotel industry:

Modern marketing thought and global trends of many brands are moving very quickly into a new era of customer empowerment and listening to their reviews to improve services and quality especially in the hotel industry, where consumers are increasingly able to directly affect marketing outcomes by contributing User Generated Content (UGC). This transformation represents a fundamental change in the power relationship between marketing and consumers and may have significant repercussions on the thought and practice of marketing and attention to the different means and ways to

track customer opinions and reviews on social networks and sites specialized in tourism (Kahle, Marshall, and Kropp, 2003) such as (Booking.com). The rapid growth of user-generated content (UGC) has attracted the attention of researchers across a number of different fields, including marketing, computer science, management, and journalism (Brabham, 2013; Krishnamurthy and Dou, 2008; von Hippel, 2005).

User-Generated Content (UGC) can be defined as any form of content (written, audio, visual, and embedded) that has been created by Internet users and social media networks and made publicly available on the internet) Christodoulides et al. 2012; Organization for Economic Co-operation and Development 2007). Also known as electronic word of mouth (eWOM) it works just like the common word (Manap & Adzharudin,2013) except that it spreads the input through an online medium. (Blackshaw and Nazzaro,2006) define User Generated Content as "a mixture of fact, opinion, impression, feelings, habits, experiences, and even unfounded rumours." It serves as a essential means for its users to express their views and opinions and to communicate with others (Boyd & Ellison,2008). (Hennig et al.,2004) define E-WOM/UGC as "any negative or positive statement made by potential, actual or past customers about a product or company, which is made available to various people and organizations over the Internet". And as user-generated content (UGC) is becoming increasingly ubiquitous, companies need to develop an advanced business analytics capability to differentiate themselves from their competitors. (Shen Tian et al ,2016). User Generated Content can be social media content such as Twitter, Facebook, reviews, testimonials, blog posts, video content, Q&A forums (including comments and reviews), and case studies. This study specifically focuses on online customer reviews as a source of UGC data obtained from the online booking website (Booking.com).

 Due to the increase of UGC available on the internet, sentiment analysis has become an important field of research to process the text data and to extract insights in order to understand customers' opinion towards the hotels and their attributes. The feedback from the customers allows hotel manager to make actionable decisions from this sentiment analysis. (Siew Theng Lai and Mafas Raheem 2020).

In tourism research, sentiment analysis is usually used to determine visitors' attitudes towards the places visited and services by analysing the big data available online. (Rohani et.al 2020). The sentiment is known as a feeling, opinion, or emotion, made by a person. Sentiment analysis (SA), also known as opinion mining, is a computational process of identifying and categorizing opinions expressed in a piece of written to determine whether individuals' attitude toward a particular aspect is positive, negative, or neutral. (Mohd Ridzwan Yaakub et.al, 2019**)**

Analysis of sentiment can be investigated at three levels subjected based on the objective of the research. The first level is a whole text or named document level, one or several combined sentences named sentence level, or one or a few entities or features of those entities named feature/aspect level. (Zulfadzli Drus and Haliyana Khalid, 2019**)**.

Xin Tian et.al 2016 conducted a case study by analysing the reviews written in English of 58 three to five-star hotels in four big cities in China. 11042 English comments were captured from tripadvisor.com and analysed using text mining and sentiment analysis. This case study identified a number of attributes from the online hotel reviews, sentiment of each attribute as well as the correlations among them. The results offer clear managerial implications for hotel managers through the use of natural language pre-processing, text mining and sentiment analysis techniques. (Rohani Hashim et.al ,2020) recommend researches to consider conducting sentiment analysis for evaluating the quality of service and degree of satisfaction a visitor may experience when visiting a place.

The sentiment analysis is a complicated process that involves 5 different steps to analyze sentiment data. These steps are (Alessia D'Andrea 2015):

1. **Data collection:** This step consists of crawling data from UGC like blogs, forums, reviews and social networking sites. Many crawling tools are used to extract text from the UGC sites.

2. **Text preparation:** It contains cleansing the extracted data before analysis. Non-textual contents and contents that are irrelevant for the analysis are eliminated; It

also includes the data pre-processing such as Lemmatization, POS, and Parsing, stemming and stop words elimination.

3. **Sentiment detection**: This can be made on three levels as mentioned before. The extracted text of the reviews and opinions are examined.

4. **Sentiment classification:** Subjective sentences are classified in positive, neutral and negative.

5. **Presentation of output:** In this phase, the text results are displayed on graphs like pie chart, bar chart.

In previous studies, three types of sentiment analysis classification techniques are used: Machine Learning approach, Natural language Processing (NLP), and Hybrid approach

1) Machine Learning refers to the use of scientific algorithms and statistical models in order to extract sentiment from data. It is divided into supervised learning, unsupervised learning, and semi-unsupervised learning. Support Vector Machine (SVM) and Naïve Bayes are the standard classifiers used in most tourism-based studies (Rohani et.al 2020).

2) NLP also called Lexicon-based approach consists of dictionary based and corpus based which is also divided into statistical and semantic. It works by counting the positive and negative words that related to data. Chingakham Nirma Devi & R. Renuga Devi (2020) reviewed various studies that used machine learning approach and lexicon-based approach for sentiment analysis in tourism.

3) Hybrid approach is another classification method that combine machine learning and lexicon-based methods like in the study of Siew Theng Lai and Mafas Raheem (2020). They adopted a hybrid approach to improve the classification accuracy of the customers' online reviews sentiment analysis for hotels to improve the competitive values and customer relationship.

In this study, Meaning Cloud Add-in for Excel was used in conducting sentiment analysis. Meaning Cloud is a machine learning-based software system that enables text analytics and the semantic processing of text data (David Gonzalez-Marron et.al., 2017). The tool uses different pre-trained machine learning models for different types of analysis. It is a commercial grade software system used both in industry and academia. The free subscription available to researchers and academics is used in this research. Meaning Cloud provides a solution for performing a detailed multilingual sentiment analysis of texts from different sources. It is based on advanced natural language processing techniques for detecting the polarity of a text. In David Gonzalez-Marron et.al.2017 study, Meaning Cloud was used and achieve very good results. Meaning Cloud also has a very beneficial characteristic to this research, that it conducts the sentiment analysis on two levels, global and aspect /topic based level and the polarity of the reviews is shown in five categories which are P+, P, NEU, N, N- which can be compared with the answers of Likert Scale of 5 points in the online survey responses, "Totally Agree", "Agree", "Neutral" , "Disagree" and "Totally disagree" respectively.

4.3 Comparing survey data with UGC data:

Roland Schegg and Michael Fux （2010） study suggested that the evaluation (hotel attributes rating) of hotels via an online survey does not differ fundamentally from customer evaluations on booking websites (TripAdvisor & HohidayCheck).

Zhifang Wang et.al (2018) uses attractiveness as a factor to examine the strengths and weaknesses of Social Media Data (SMD) and survey data in understanding park and open space design. The results from SMD and survey data were so similar, particularly in identifying keywords. The similarity between the two confirms the potentiality of SMD in assessing landscapes as there are big data available online which implicitly represent users' attitudes and emotions. This research recommends a complementary process between the two data sources, which first utilizes SMD to build up an assessment framework, then applies traditional surveys for detailed information. This would result ultimately in comprehensive understanding.

Cody Buntain(2016) compares analyses and results from a panel survey and social media data of 2013 Boston Marathon Bombing. It suggests the two sources are complementary: social media gives better insight into behaviour more rapidly and cheaper than surveys, but surveys can give higher quality, targeted, and more proper data. Roland Schegg and Michael FUX(2010) 's explorative analysis of the Swiss tourism destination Saas-Fee shows that the customers' evaluation of offers do not differ fundamentally between traditional marketing research and the evaluations on review websites.

Ⅴ − Research Methodology:

5.1 Hotel Selection:

Tolip Hotels & Resorts was chosen in this research as it is a 5-star Egyptian hotel chain created to be the first National hospitality brand under the management of the National Hotel and Tourism Services Company which is one of the companies of the National Service Projects Authority of the Egyptian Armed Forces. In addition, there are no research studies that were conducted on this hotel before. Tolip has 17 branches in Egypt. Three branches are under consideration in this research:

1. Tolip Hotel Alexandria located in Alexandria
2. Tolip North coast Hotel located in El Alamein
3. Tolip Resort Elgalala Majestic located in Ain Sokhna

These three branches are chosen for some reasons:

1. They received the highest rating among other branches in the online survey results.
2. Significant number of customer reviews for these branches was available on Booking.com during the period of study.
3. They have similar characteristics in terms of location and sites around, covering Egypt from north coast overlooking Mediterranean to the Red Sea in the east of Egypt.

In order to compare between the online survey and online reviews, this research was conducted in two parts parallelly. Each part consists of 2 phases: data preparation and cleansing phase, and data analysis phase. Figure (1) illustrates the research process.
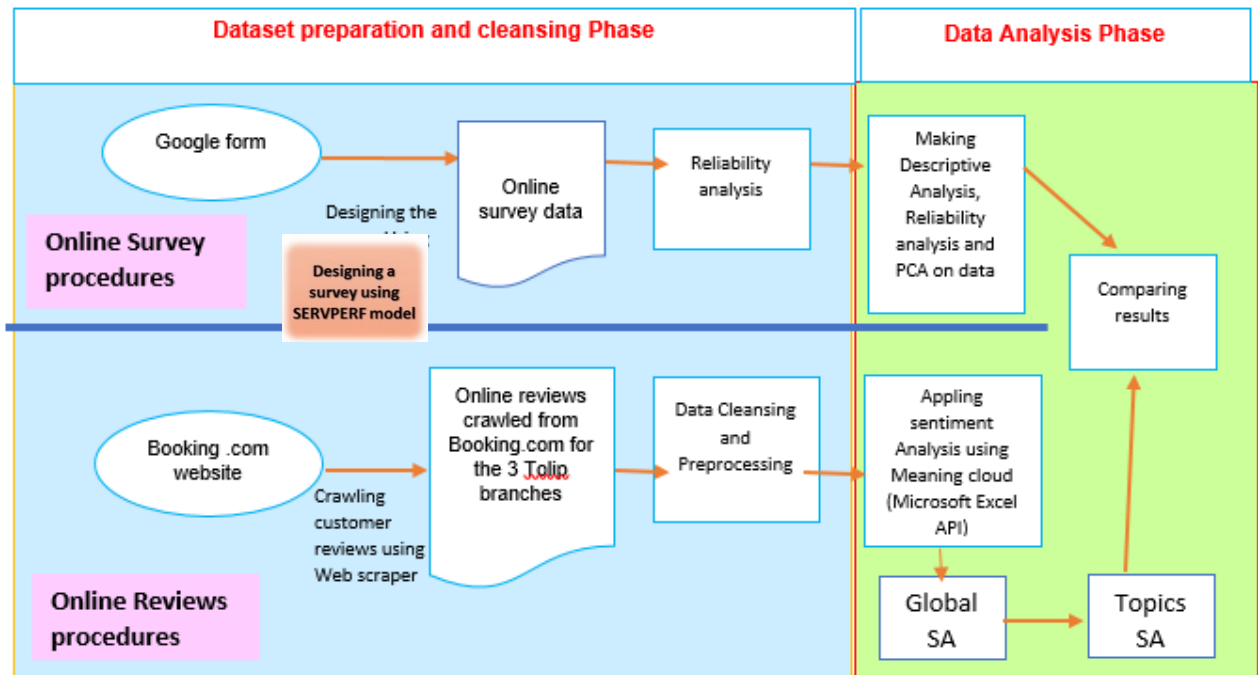

Figure (1): Conceptual diagram describing the Research Process

5.2 Online Survey process:

a) Dataset preparation phase:

The researcher used a questionnaire to collect data. The questionnaire was classified into two sections, the first section consisted of demographic questions asking about; age, gender and income. The second part of questionnaire was regarding four service quality dimensions based on SERVPERF model. The first part was Tangibility; consists of eighteen questions, second part was responsiveness containing seven questions, third part was Reliability containing

six questions, and the fourth part was Empathy containing three questions. The questionnaire structured in the form of multiple-choice questions derived from the previous studies. (Grönroos, 1984; Parasuraman et al., 1985; Nadiri and Hussain,2005; Ku et al., 2011;) related to SERVPERF and translated into Arabic.

The sampling technique was purposive sampling method in which the respondents were required to visit, at minimum, the target branches (Alex, North coast and al glala branches) in addition to that, the study was limited to Egyptian customers during the study period, where almost all guests in Tolip Hotels in different branches have equal chances of being selected for the sample. The researcher gathered 315 questionnaires in the period from sept.2020 to Jan,2021.

The participants were asked to mark each item on a five-point rating scale ranging from Totally agree to Totally disagree.

Data analysis phase:

In this part of study, a quantitative method used in order to analyze data gathered by the researcher. Data collected were subjected to descriptive analysis and reliability analysis, exploratory factor analysis using PCA with varimax rotation.

The reliability test has been assessed by computing the coefficient alpha (Cronbach, 1951), that measures internal consistency of the items means reliability which refers to the instruments ability to prove consistent results in repeated uses.

In order to examine the dimensionality of SERVPERF instrument in Egyptian hotel industry, 34 item (questions) scale was analysed by PCA with Varimax rotation. The aim was to identify the items which clarify most of the variance perceived in greater number of visible variables. In other words, PCA is conducted to determine which items have greater influence than others in measuring the perception towards hotel service quality in the case of Tolip hotel.

5.3 Online reviews process:

a) Dataset preparation and cleansing phase:

English written online customer reviews of three Tolip branches are crawled from booking.com using web scraper (google chrome add-in). Booking.com is used because of its popularity in Egypt as well as its unique review structure. Customers on booking.com are asked to distinguish between the place for writing positive feedbacks and the place for writing negative ones. This feature in booking.com gives customers a chance to think and express their opinions freely whether positive or negative. All customer reviews available on 9th of October 2020 on Booking.com website have been crawled. Web scraper which outputs the reviews in an excel sheet.

The online reviews dataset was cleansed by removing manually the missing values, non-English reviews, duplicate reviews, some spelling mistakes like "staff" and "stuff" and omitting the words "Disliked" in the negative reviews which crawled instead of the sad emoji in Booking.com website. Table (1) illustrates the number of reviews included in the research for each branch of Tolip hotel after cleansing and the date range of each one. Data pre-processing is done on data automatically through the Lemmatization, POS, and Parsing API of Meaning Cloud.

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

Table (1): Number of reviews included in the study for each branch of Tolip hotel after cleansing data

Tolip branches	Number of customer reviews included in the study	Percentage (%)	Customer reviews date range for each branch
North coast	489	22.7%	April 2019 to October 2020
Alex	980	45.4%	September 2018 to October 2020
Tolip Resort ElGalala Majestic	688	31.9%	February 2020 to October 2020
Total	**2157**	**100%**	

b) Data Analysis phase:

Meaning cloud Add-in for Excel is used to apply the sentiment analysis on the online review dataset. It can perform a detailed multilingual sentiment analysis of texts from different sources. Its sentiment analysis models are based on a proprietary technology for Deep Categorization. Deep Learning is used to generate candidate expressions relevant for sentiment analysis, and high-level semantic rules are written manually to express semantic generalizations. Original dataset excel spreadsheet will have two new sheets after conducting sentiment analysis, Global Sentiment Analysis, with the global sentiment results of the texts and Topics Sentiment Analysis, with aspect-based sentiment analysis. It provides two levels of analysis:

Global Sentiment Analysis: It is a global sentiment analysis of the whole text. The most important output of the analysis is the global polarity of each review; with values (P+, P, NEU, N, N+). If no polarity has been detected, its value will be "None". The frequencies of reviews polarity are calculated in % for each Tolip branch to obtain a global perception polarity towards the service quality in the hotel branch.

A Topic level Sentiment Analysis: where entities and concepts are extracted and their aggregated polarity in the text is obtained. The most important output of the analysis is the topic or aspect polarity. It behaves the same way as the polarity for global sentiment analysis with values (P+, P, NEU, N, N+).

The important attributes of service quality are determined based on the frequencies of the words extracted from the Topics Sentiment Analysis and also the guidance of previous studies (Jain Dong et.al 2014). 12 attributes of service quality are extracted from reviews which are Location, property facility, room facility, staff (professionalism), staff empathy, beach, pool, entertainment &sports, food/beverage, service, and value of money and others. Then, VLOOKUP function of Excel was used to categorize the topics extracted based on the attributes determined. Table (2) clarify the service quality attributes extracted from the topics sentiment analysis and the keywords assigned to each one.

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

Table (2): **Manually defined Service quality attributes extracted from Topics sentiment analysis and the keyword assigned to each category**

Location	location, place, area, compass, airport, railway station, position, access, Cairo, mountain
Staff (Professionality)	staff, team, waiter, people, employee, doorman, coach, driver, housekeeping, chef, lifeguard, entrance, administrator, manager, executive,
Staff empathy	friendly, nice
food& drinks	food, breakfast, dinner, pasta, restaurant, buffet, olive oil, beverage, tea, coffee, salad, juice, alcohol, Nescafé, dessert, bakery, seafood, snack, meat, coke, Coca-Cola, cake
room facilities	room, toilet, wi-fi, soup, internet, bedroom, bathroom, YouTube, videos, electricity, shower, balcony, wave, air conditioning, bed, slipper, lighting, kitchen, chair, shower, noise, tv channels, towel, curtain, Frigidaire, refrigerator, bathtub, sweet, connection, drain, water, cooling, iron, TV, mattress, floor, fan, AC, carpet
Pool	pool, swimming pool, swimming-pool, heater, snooking, adult
Beach	beach, jelly fish, jelly, sea, rock, sand, marine, rocky, stone, oil
service	service, room service, front, reception, maintenance, cleaning, housekeeping, check, traffic, technical support, complaint, insect, worm, ant, privacy, security, corona, coronavirus, virus, mask, face mask, medical care, pandemic, social distance, CVID-19, infection, glove, injury
Property facilities	property, hotel, interior design, taftaf, star, parking, roof, decoration, garage, garden, bus, car, building, transport, chalet, elevator, atmosphere, vehicle, coffee shop, music, corridor, architecture, hall, cup, glasses, environment, pharmacy, store, plant, hotel entrance
Entertainment and sports	program, activity, animation team, animation, gym, golf, cart, theater, spa, club, café, Jacuzzi, ski, tennis, kid, kids, baby, jungle, child, elder, family, father
Value of money	Value of money, Price, fee, Egyptian pound, EGP, bill, accusation, dollar, LE, extra, charge
Others	Eid, guest, client

The frequencies of each attribute are calculated with its polarity in each review for the 3 Tolip branches. To improve the results obtained from the sentiment analysis, meaning cloud gives its user the capability of building their own personal sentiment model to adapt the analysis to their subdomain. Eighteen new hotel industry related rules are built by the researcher.

Examples for these rules are:

- o Beach is itself has "NONE" means neutral polarity. But in case of be with the words "ROCKY", "STONES", or "ROCKS", it will get "N+" polarity.
- o Insect with Aliases worm, ant, worm, jellyfish, flies are all get "N+" polarity.
- o Value of money is itself has "NONE" means neutral polarity. But in case of be with words "High", "Expensive", "Extra", "Reduce", "Over", it will get "N+" polarity.

In order to compare between the online survey results and the online reviews sentiment analysis results, the service quality attributes obtained from the sentiment analysis are further categorized based on the four dimensions of service quality in SERVPERF model. The researchers investigated the questions and assign attributes to each dimension as follows:

Tangibility: contains Location, Property facilities, Food& Beverage, Pool, Beach, Entertainment / Sports.

Responsiveness: contains "staff professionality". It is all about staff proficiency in doing their jobs in different managerial levels.

Reliability: contains Room facilities, Value of money, services.

Empathy: It contains staff empathy in the context of friendly or nice staff.

Ⅵ－Research results and recommendations:

In this section, research questions are discussed and getting answered.

6.1 Results related to question No. 1 with its sub questions:

The first question is related to the value adding of online reviews in hotel industry. This question can be answered through the following three sub questions:

1.1 What are the most frequently mentioned service quality attributes by hotel customers in the online customer reviews?

1.2 What is the opinion of customers about each attribute?

1.3 What are the recommendations that can be given to each branch of Tolip hotel to improve their performance and guiding them to the upcoming business strategies?

These questions can be answered by investigating the sentiment analysis results of the online customer reviews:

6.1.1   Online reviews sentiment analysis results:

6.1.1.1 Global sentiment analysis results:
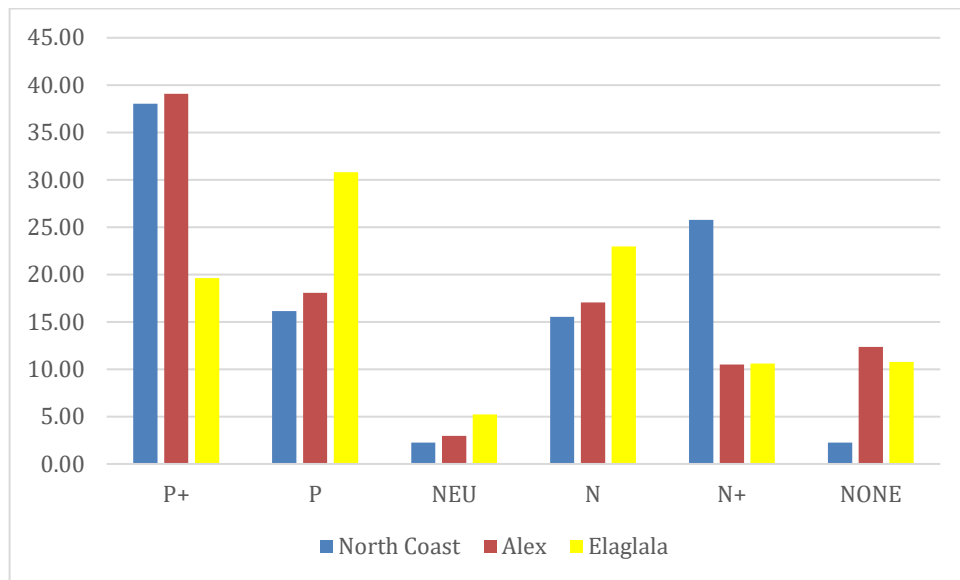

Figure (2): Global sentiment Analysis Results of Tolip Branches

The global sentiment analysis results in figure (2) illustrates that the general opinion of the customers towards service quality in the three branches of the hotel is positive. But there are some negative opinions that must be known to improve the performance of the hotel. So, further study must be done to get more details. The question here is what service quality attributes are perceived by the customers and what are their polarities "positive" or "Negative"?. This can be done by a deeper investigation of the results of the topics or aspects extracted from Topics sentiment analysis.

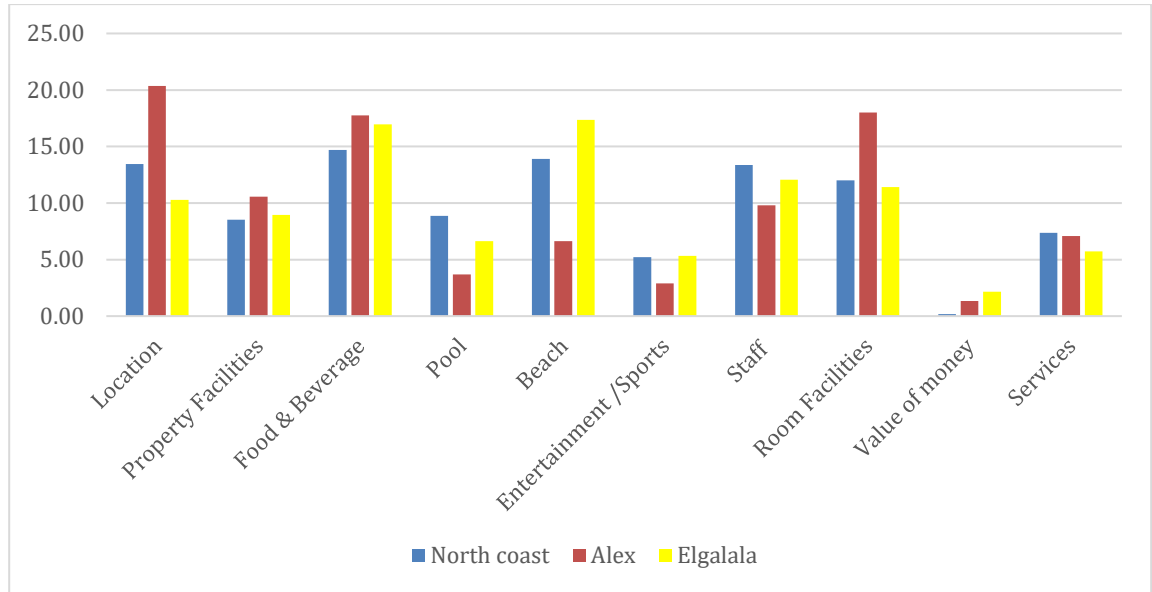### 6.1.1.2 Topics/Aspect sentiment analysis results:

Figure (3): Service Quality Attributes frequencies in % in branches

In Figure (3), the two staff attributes (staff professionalism + staff empathy) were merged to identify the total frequency of staff in reviews. The top 5 attributes mentioned in the reviews of each branch were as follows:

- In North Coast the most mentioned topic was "Food& beverage" and then "Beach", "Location", "Staff" and Room Facilities" in descending order.
- In Alex branch, the most mentioned topics was "Location" at the top, then "Room facilities" "Food and beverage", "Property facilities", "Staff" and "Beach".
- In Elgalala branch, the most mentioned topics was "Beach" at the top, then "Food& beverage", "Staff", "Room facilities" and "Location". Although The "Value of money" attribute frequency is relatively low compared with the other attributes, Topic Elgalala has reviews about "Value of money" more than the other two branches. This can be interpreted that Elgalala is relatively

high price than the other two branches. So, it seems logical to be mentioned in the reviews.

We can conclude that the common attributes of service quality perceived by the Tolip hotel customers in the three branches are related to Location, Food & beverage, Staff, Beach and Room facilities which is the answer to question1.1 of Question No.1. Question 1.2 is about the polarity which expressing customers' opinions toward each service quality attribute whether it was positive or negative. The answer for this question is in the next step of determining the polarity of each attribute in each branch.
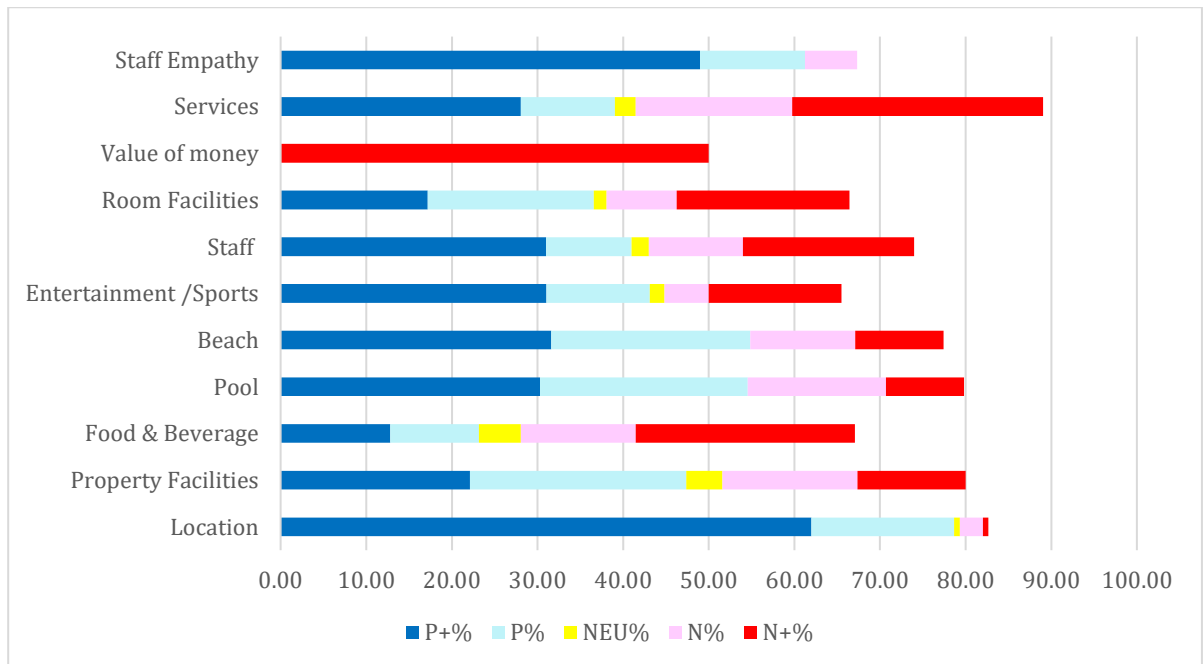

Figure (4): North Coast Attributes Polarity (%) without unclassified topics (None)

Figure (4) gives us more insights about the service quality in Tolip North Coast. The most mentioned attribute which was "Food & beverage" has relatively negative polarity. This means that the North Coast branch has some problems related to the meals provided to the customer. On the other, the "Location" has obviously positive polarity. "Staff" has an obviously positive polarity in terms of their empathy towards customers, but they seem to be not professional. "Services" was not from the top 5 attributes mentioned in the reviews, but the sentiment analysis shows that it has relatively negative polarity which indicates some problems in quality of the services provided by the hotel. This might be due to the professionalism of the staff. Although "Value of money" attribute was not frequent in the reviews, its negative polarity is important to be considered. The attributes that have almost 50% positive and 50% negative polarity also need to be considered because negative values reduce the value of positive ones.
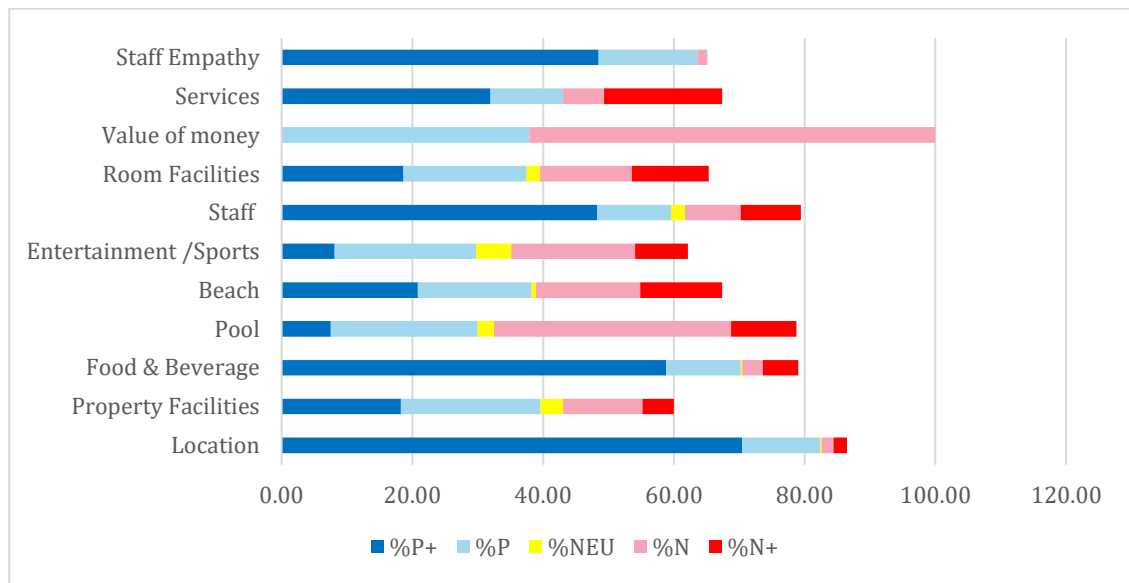

Figure (5): Alex Attributes Polarity (%) without unclassified topics (None)

In Alex Tolip branch, Figure (5) shows that there is obviously positive perception about "Location", "Staff" in both their professionalism and empathy and food & beverage. But there are problems in "Room facilities", "Property facilities", "Beach" and "Pool". This may be because the Alex branch is relatively old compared to the other two branches. So, if the branch does not have an efficient maintenance plan for its facilities, the data we see here is a logical implication of that.
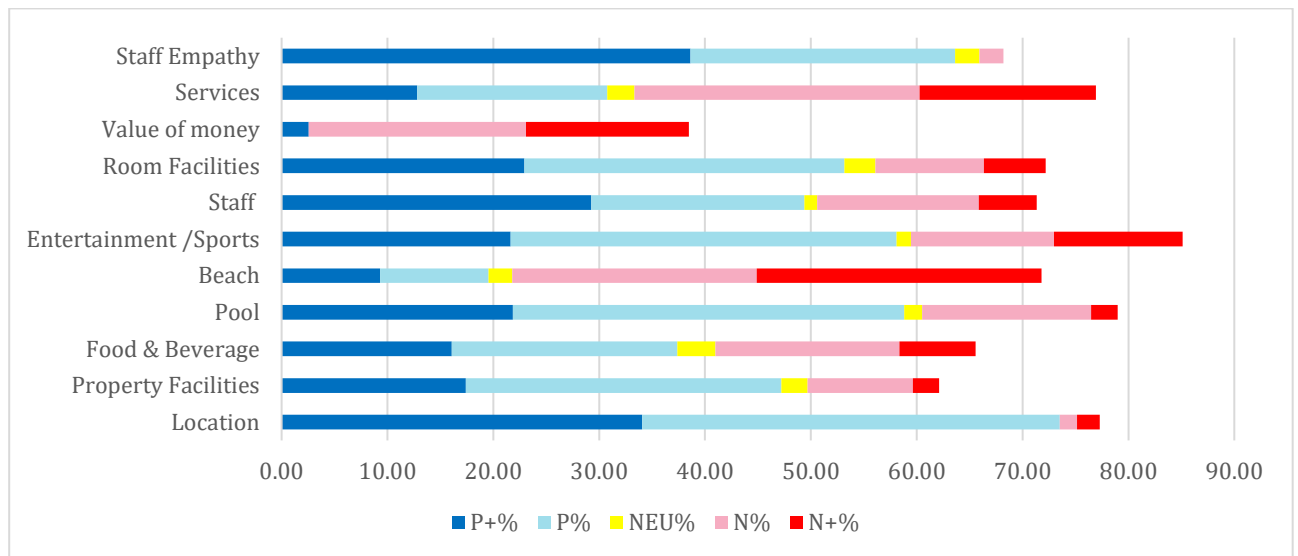

Figure (6): Algalala Attributes Polarity (%) without unclassified topics (None)

It is clearly shown in figure (6) that "Location" , "Staff" in terms of their professionalism and empathy, "Pool", "Entertainment/Sports", "Room facilities" and "Property facilities" are positivity evaluated by the customers. The "value of money" and "Beach" are obviously negatively evaluated. Approximately 25% of the food& beverage reviews were negative. The negativity of the value of money could be due to the relatively high price of Elgalala branch compared to the other two branches. High price is usually perceived by the customer as high-quality service and this is not seen in the "service" attribute which is negative by 44% of the total reviews as well as the negativity of the "beach" and "Food and beverage" mentioned before.

Question 1.3 can be answered by summarizing online reviews sentiment analysis results illustrated above in the form of some recommendations for each branch of Tolip hotel to support decision making related to the enhancement of service quality of the hotel that ultimately increase the customer satisfaction. Table (2) summarize the recommendations provided to each Tolip hotel branch.

Table (2): Recommendations for each Tolip hotel branch after conducting sentiment analysis

Tolip Branches	Recommendations provided from the online review sentiment analysis
Tolip North coast	1- The most frequent service quality attribute was in the category of "food & beverage" and its polarity was negative. So, the hotel must improve the quality of meals & drinks and increase their variety. This improvements in this attribute can have a positive effect also on the "value of money" feeling of the customer. 2- The "location" and "Beach" are competitive advantage factors of this branch which should be emphasized in the advertising messages, promotions and direct marketing. 3- "Staff" seems friendly and nice. But more training programs should be conducted to be more professional in dealing with customers and handling problems. It is recommended that they are motivated through financial or/ and incorporeal incentives to be able to cope better with the work load specially during high seasons. Incentives and rewards system should be revised. We suggest making monthly competition among staff by choosing "The best staff of this month". Customers is

	the main participant of this competition by voting during their visit. The best staff chosen can get bonus or other incorporeal rewards like put his/her name on the honor board. These ideas can motivate staff to improve their job performance and consequently have positive effect on the services provided all over the hotel. 4- "Services" in the hotel should be improved such as housekeeping, maintenance of room facilities, technical support, room services and medical care. This is also can have a positive effect on value of money. Having professional and trained staff also can have positive effect improving the services in the hotel.
Tolip Alex Branch	1- "Location" is a competitive advantage factor in this branch also which should be strongly mentioned in the promotions. 2- "Food & beverage" and "Staff" seems good. The hotel should keep the level of both attributes by revising menus regularly and train and motivate staff periodically. 3- Because this branch is relatively old, some renewing should be made in property facilities in general, room facilities like room furniture, electrical appliances, bathroom and so on. Periodical maintenance plan should be revised for these facilities.
Tolip Resort El Galala Majestic	1- The rocky "Beach" full of stones is a problem in this branch which should be solved by removing rocks and stones in the beach, while maintaining the beauty of

	nature. It may be costly, but it will definitely increase the customer satisfaction toward service quality of the hotel.
	2- This branch is the newest one. So, results show positivity in "property facilities", "room facilities", "pools" which should be maintained periodically to preserve its proper functionality as long as possible.
	3- The negativity of "food & beverage" should be considered in this branch in terms of quality of meals, their variety, and hygiene.
	4- The negativity of "value of money" attribute might be due to the negativity of "services" provided such as room services, housekeeping as well as the problems in meals and beach.
	5- "Staff" and "entertainment /sports" attributes was positively evaluated and should motivate the management to keep the quality level of human resources and increase the activities provided by the hotel such as animation team activities, kids areas, sport courts, spa, health club etc.

From the previous discussion, we can answer to question No.1 that by analyzing online customer reviews using sentiment analysis, the hotel management can be provided by valuable information about the customer service quality perceptions in the hotel which help it improving services and ultimately reaching customer satisfaction which improve the overall hotel performance.

6.2 Results related to question No. 2 with its sub questions:

The second question is related to the main objective of the research in which comparison is made between online survey results and online reviews sentiment analysis results in order to continue examining the value of online reviews sentiment analysis output. Before answering the second question and its sub questions, the results of the online survey were provided in the next section.

6.2.1 Online survey results:

6.2.1.1 Reliability Analysis:

The reliability test has been conducted by computing the coefficient alpha (Cronbach, 1951) using SPSS program, that measures internal consistency of the items. For a measure to be acceptable, coefficient alpha should be greater than 0.6 and within 0.8(Sekaran, 2005). Therefore, as in table (3) , perception scale demonstrated acceptable reliability in the four dimensions.

Table: (3) Reliability Statistics (Cronbach's Alpha) result

	Cronbach's Alpha	N of Items
Tangibility	0.915	18
Responsiveness	0.848	7
Empathy	0.789	3
Reliability	0.728	6

6.2.1.2 Online survey descriptive statistics results:
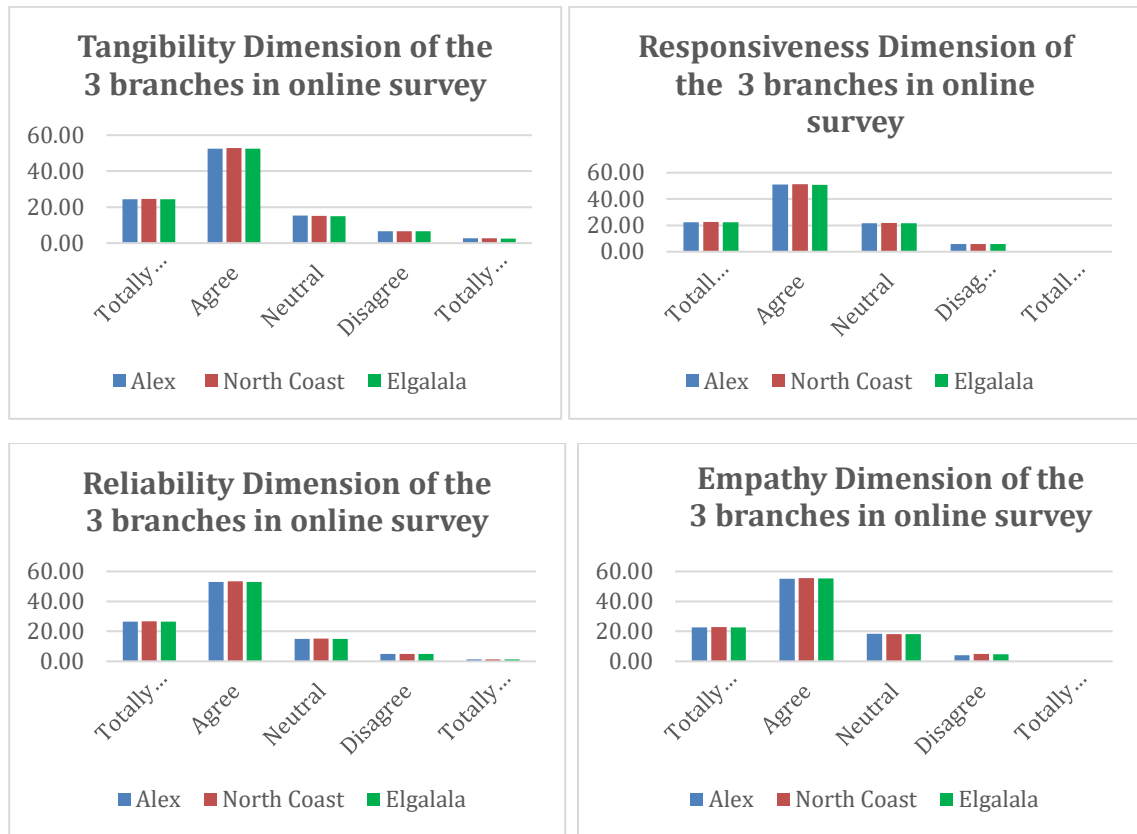
Figure (7): Online survey descriptive statistics results

It is evident from the graphs of the survey results that the opinions and attitudes of Tolip hotel customers towards the dimensions of service quality are positive, and this shows the customer satisfaction with the service provided by the branches under study, where researchers used the Mean to interpret the results. These results are consistent with the positivity shown in all branches in the global sentiment analysis results.

6.2.1.3 Mann-Whitney U (2 sample) test results:

After investigating the normality of the survey data which concluded that the distribution of data is not normal (Kolmogorov-Smirnov and Shapiro-Wilk were significant (0.001) even after transforming data with log10 function), Nonparametric Mann-Whitney U (2 samples) test was conducted to compare between the two data sources results. As table (4) illustrates that p-value of Mann-Whitney U (2 samples) test was in the range of 0.3 to 1 (not significant; bigger than 0.05). The exact significance of the test was chosen because the sample size is less than 30. These values are significantly high for all branches in different dimensions of service quality which means that the distribution of each dimension is the same across the two different data sources results; in other words, there are no differences between the mean of online survey results and sentiment analysis results of online reviews. And this result is the answer for the sub question 2.1, and it supports (Roland Schegg and Michael Fux 2010) and (Zhifang Wang et.al , 2018) studies.

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Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

Table (4): illustrates that p-value of Mann-Whitney U (2 samples)

Service quality Dimensions	Data Collection Method used	North Coast	Alex	Elgalala
Tangibility	**Survey**	0.841	0.841	0.841
	Online reviews SA			
Responsiveness	**Survey**	0.841	0.841	0.69
	Online reviews SA			
Reliability	**Survey**	0.841	1	0.69
	Online reviews SA			
Empathy	**Survey**	0.69	0.31	0.69
	Online reviews SA			

6.2.1.4 Exploratory Principal Component Analysis (PCA)

In order to examine the dimensionality of SERVPERF instrument from the Egyptian perspective, 34-item scale was factor analyzed using the PCA with Varimax rotation on the service quality perceptions of the customers. The main objective of conducting PCA is to identify the most important variables (items) contributing in measuring the customer service quality perception in the SERVEPERF model in Egyptian environment applied on Tolip hotel customers. This can be achieved by transforming a variable set which are highly correlated to a new set of variables (components) which are uncorrelated, and are ordered so that the first few retain most of the variation present in all of the original variables. (Deepak Gupta, 2017). These new set of variables are compared with the most frequently mentioned attributes extracted from the online review sentiment analysis to find out if there is any consistency between them.

Before conducting the PCA analysis, the adequacy of data for factor analysis has been analysed using SPSS software with the help of Kaiser-Meyer-Oklin (KMO) Measure of Sampling Adequacy (MSA) and Bartlett's test of sphericity. In this study, value of KMO is 0.892 which is acceptable exceeding the recommended value of 0.6 as suggested by Hair et al., (2010). Moreover, Bartlett's Test of Sphericity significant value is 0.000 which is less than 0.05. The results thus indicate that the sample taken is appropriate to perform factor analysis procedure. Communalities in table (5) which indicate the amount of variance in each variable that is accounted for, are moderate ranging from 0.5 to 0.777 which means that the components extracted have moderate amount of variance in the statements.

Table (5): KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.892
Bartlett's Test of Sphericity	Approx. Chi-Square	7685.644
	Df	561
	Sig.	0.000

The PCA was conducted 3 times by fixed number of components; by 3, 4, and 5 components. The four components solution was the best in the balanced number of items included in each component. The items that have component loading less than 0.5 were eliminated (Deepak Gupta 2017). The eigen values is bigger than 1 till the fourth components and the cumulative variance was around 59% which indicates that the four components can clarify the variance with 59% by the items included in them.

As shown in table (5), the first component has 13 items explaining 40.5% of the variance. 10 items of these 13 are related to the tangible things in the hotel. This means that the most perceived service quality dimension by Tolip customers is "Tangibility". These tangibles are Pool, beach, meals, facilities available in the hotel like kid's area, health club and parking. The remaining 3 items is about the professionalism of the staff.

The second component contains 11 items explaining variance by 8.5%. 6 items of the 11 are about tangibles and 5 Items are related to the professionalism of the staff. The third component contains 4 items explaining variance by 5.5%. These items related to the staff empathy and value of money. And the last fourth component contains 3 items which relate to room specifications and room service.

Table (6): PCA components extraction result of Service Quality items

`	Component Name	Factor Loading	Eigen Value	% of Variance	Communalities
	Component 1:		13.786	40.548	
1	T15: Pool and Kids area were conveniently located	0.836			0.777
2	T14:Health club and Spa were conver located	0.780			0.703
3	T13:Meeting rooms were conveniently located	0.736			0.659
4	T5:The restaurant's atmosphere was inviting	0.722			0.619
5	T16:Meals are usually delicious and have various options	0.711			0.571
6	T17:Beach and Bathroom were conveniently located	0.661			0.593
7	T12:Parking arrangements were convenient	0.638			0.695
8	R2:When you have a problem, the hotel shows a sincere interest in solving it	0.600			0.559
9	Res5:Employees responded quickly to solve my problems	0.579			0.641
10	T7:The outdoor surroundings were visually attractive	0.576			0.623

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

11	T18:Animation team play a good show	0.559			0.500
12	T1: The hotel has modern-looking equipment	0.510			0.594
13	Res6:Employees were polite when answering my questions	0.506			0.568
	Component 2:		2.896	8.518	
1	T3:The hotel's employees are neat-appearing	0.808			0.739
2	T4:The employees had clean, neat uniforms	0.695			0.572
3	T9:The hotel was clean	0.661			0.707
4	R3:Employees of the hotel tell you exactly when services will be performed	0.645			0.548
5	T6:The hotel provided a safe environment	0.608			0.428
6	Res2:Employees of the hotel are always willing to help you	0.607			0.646
7	T8:The hotel's interior and exterior were well maintained	0.562			0.518
8	Res1:Employees of the hotel are never too busy to respond to your requests	0.561			0.616
9	E1:The hotel gives you individual attention	0.543			0.576
10	Res3:Employees of the hotel tell you exactly when services will be performed	0.535			0.593
11	R5:TV, radio, A/C, lights, and other mechanical equipment worked properly	0.534			0.630
	Component 3:		1.853	5.451	

Dr. Sherif Taher Mohammed Farid **and** Dr. Ghada Moustafa Mousa

1	Res7:A manager was available if I had a problem	0.757			0.662
2	R6:I got what I paid for	0.657			0.554
3	E2: Employees of the hotel understand your specific needs	0.582			0.656
4	E3: Employees of the hotel have the knowledge to answer your questions	0.502			0.615
	Component 4:		1.417	4.168	
1	T11: Balcony have a sea and pool view	0.742			0.614
2	T10: My room was conveniently located	0.729			0.653
3	Res4: Employees responded promptly to my requests	0.680			0.500
	Cumulative Variance			58.685	

PCA results of the online survey illustrates that Tangibles, staff proficissionality, staff empathy and room specifications were the dominant components in the service quality perception of the Tolip customers. This result is consistent with the attributes extracted from the sentiment analysis. Tangibles are represented in Location, property facilities, food & beverages, beach and Pool. Staff also were one of the frequent attributes mentioned in all branches as well as the room facilities whereas the Topics/Aspect sentiment analysis helps us gain deeper understanding of those service quality attributes by providing the polarity of the attributes that represent the customer's opinion about them. These results can answer the question 2.2 that extracted attributes from the online reviews are consistent with the most important dimensions of service quality examined in the online survey. By answering the two sub questions of Question 2, QuestionNo.2 itself can be answered that the online customer reviews can properly replace the traditional surveys used in marketing research. It not only replaces surveys but also can give more valuable and deeper understanding of the service quality attributes perceived by the hotel customer.

Ⅶ‐ **Conclusion:**

This research shows that receiving online customer reviews is an important source of UGC data which can play a vital role in understanding customer perception towards service quality in hotel industry. By analyzing online reviews using sentiment analysis or any other text mining techniques, hotel managers can obtain valuable information about customer attitudes , opinions and consequently can make relevant decisions that can ultimately lead to customer satisfaction, improve hotel performance ,gain competitive advantages and survive in the tourism market. Previous studies suggested that online reviews can be used in combination with traditional marketing research tools (Roland Schegg et.al 2014, Cody Buntain 2016)to gain the advantages of both of them in normal circumstances. But in the event of a global pandemic , companies need to come up with new online data sources , which are not collected but extracted from different web sites with large sampling size, the data needs to be easily collected without any human interaction (Zhifang Wang et. al, 2018) UGC data are abundant with such characteristics. Accordingly, This research suggests that online reviews are a data source which can replace the traditional marketing research data collection method such as surveys.

Recommendations were provided to each branch of Tolip hotel from the online reviews sentiment analysis results. Some service quality attributes were positively evaluated by customers . These positive aspects need to be taken constantly into consideration to maintain the same level of service delivery or higher in order to be able to compete fiercely in the highly competitive Egyptian hotel industry environment. Moreover , negative aspects reflected through the reviews need to be worked on and even turned into points of strength for the hotel chain .

Ⅷ－**Practical implications and Future Work**

This study is the only one that deals with an Egyptian hotel chain and seeks to provide a set of recommendations to those responsible for the hotel chain under study to improve the level of hotel service quality, while drawing their attention to the importance of using modern technology methods in the field of information technology, such as sentiment analysis to track customers' reviews accurately and with high credibility instead. From relying on traditional surveys that suffer from many problems such as the lack of customer

interest in answering them, as well as the lack of focus while filling these surveys, especially during the period of the Corona pandemic, as these new methods (sentiment analysis) provide technology with a high degree of safety and is considered one of the most important precautionary ways to transmit infection through the use of Papers and contact, and these methods are characterized by low cost and high accuracy.

In this research, only English reviews were used and analyzed. As things are different in the real world where many different languages are used to express opinions, sentiment analysis in other languages are recommended (Rohani at.al 2020) such as Arabic in Arabic speaking countries in order to have a better understanding of the Arabic customers' attitudes, opinions and behaviours. In addition, comparing online reviews written in different languages is expected to bring significant differences to the results. (Siew Theng Lai, Mafas Raheem 2020)

The accuracy of the sentiment analysis tool used in this research was not measured. In future work, comparison study can be made to compare different sentiment analysis tools. The sentiment analysis conducted in this study is based on generic terminologies which affect the accuracy of the sentiment analysis. So, hotel industry specific dictionary based sentiment analysis is recommened. This can be done using Meaning cloud because it allows users to define their own domain dictionary and detect sentiments of the aspects included.

Although demographic characteristics of the customers were collected in the online survey, they were not considered in the results. In future work, demographic data can also be used to compare different customers with different demographic profiles in the online reviews by crawling not only comments, but also the demographic features of the customers available in the online booking sites. This can be done with the help of different efficient crawling software.

The main limitation of this research is that the results about the dimensionality of the service quality can only be generalized on Tolip hotels chain, but cannot be generalized on the hotel industry in Egypt. It was a criterion to compare between the online survey results and the online reviews content results. So, in future work, a larger sample of Egyptian hotels is needed to be included to examine the dimensionality of the SERVEPERF instrument to be able to generalize results on the hotel industry in Egypt.

References:

(1) Mendes Filho, L. A. M., Tan, F. B., & Mills, A. (2012). User-generated content and travel planning: An application of the theory of planned behavior. Revista Brasileira de Pesquisa em Turismo. São Paulo, 6(3): 20-29

(2) Bayad Jamal Ali et.al(2021). Hotel Service Quality: The Impact of Service Quality on Customer Satisfaction in Hospitality. International journal of Engineering, Business and Management (IJEBM) Vol-5, Issue-3, May-Jun, 2021:49-53

(3) Carol Hargreaves (2015)."Analysis of Hotel Guest Satisfaction Ratings and Reviews: An Application in Singapore. American Journal of Marketing Research Vol.1, No.4,:208-214.

(4) Dong, Hongxiu Li, Xianfeng Zhang (2014). Classification of Customer Satisfaction Attributes: An Application of Online Hotel Review Analysis. International Federation for Information Processing (IFIP)2014:238-250

(5) Kandampully, J (2002). Service Management: The New Paradigm in Hospitality. Pearson Education, Australia.

(6) Paul Phillips and Krystin Zigan (2016). Understanding the impact of online reviews on Hotel Performance: An Empirical Analysis. Journal of Travel Research. http://mc.manuscriptcentral.com/jotr: 1-41

(7) Nadeem Akhtara et.al (2017). Aspect based Sentiment Oriented Summarization of Hotel Reviews. Procedia Computer Science 115 : 563–571

(8) Katerina Berezina et.al (2015) Understanding Satisfied and Dissatisfied Hotel Customers: Text Mining of Online Hotel Reviews. Journal of Hospitality Marketing & Management: 1–24

(9) Shaha Alotaibi (2018). Customer Satisfaction Measurement using Sentiment Analysis. International Journal of Advanced Computer Science and Applications, Vol.9, No.2 :106-117

(10) Zhifang Wang et.al (2018). Comparing Social Media Data and Survey Data in Assessing the Attractiveness of Beijing Olympic Forest Park. Sustainability 10, 382; doi:10.3390/su10020382:

(11) Markus Schuckert. at.al (2015). Hospitality and Tourism Online Reviews: Recent Trends and Future. Journal of Travel & Tourism Marketing, 32: 608–621

(12) Chingakham Nirma Devi & R. Renuga Devi (2020). Literature Review on Sentiment Analysis in Tourism. Test Engineering and Management: 2466 – 2474

(13) Alessia D'Andrea(2015) Approaches, Tools and Applications for Sentiment Analysis Implementation. International Journal of Computer Applications Volume 125 – No.3: 26-33

(14) Rohani Hashim et.al (2020). THE APPLICATION OF SENTIMENT ANALYSIS IN TOURISM RESEARCH: A BRIEF REVIEW. International Journal of Business Tourism and Applied Sciences Vol.8 No.1: 51-60

(15) Siew Theng Lai, Mafas Raheem (2020). SENTIMENT ANALYSIS OF ONLINE CUSTOMER REVIEWS FOR HOTEL INDUSTRY: AN APPRAISAL OF HYBRID APPROACH. International Research Journal of Engineering and Technology (IRJET). Volume: 07 Issue: 12 | Dec 2020: 1355-1359

(16) Xin Tian et.al. (2016) . Mining Online Hotel Reviews: A Case Study from Hotels in China. Twenty-second Americas Conference on Information Systems, San Diego: 1:8

(17)   Roland Schegg and Michael Fux (2010). A Comparative Analysis of Content in Traditional Survey versus Hotel Review Websites. Conference Paper. :429-440

(18)   Mohd Ridzwan Yaakub (2019). A Review on Sentiment Analysis Techniques and Applications. IOP Conf. Series: Materials Science and Engineering:1-4

(19)   David Gonzalez-Marron et.al.(2017) Exploiting Data of the Twitter Social Network Using Sentiment Analysis. CST Institute for Computer Sciences, Social Informatics and Telecommunications Engineering 2017:35-38

(20)   Cronbach, L.J. (1951). Coefficient Alpha and the Internal Structures of Tests. Psychometrika, 16(3), 297-333.

(21)   Hair, J.F., Black, W.C.; Babin, B.J. and Anderson, R.E. (2010). Multivariate Data Analysis. 7th edition, Prentice Hall, Upper Saddle River, New Jersey.

(22)   Zulfadzli Drus and Haliyana Khalid 2019. Sentiment Analysis in Social Media and its Application: Systematic Literature Review. Procedia Computer Science 161 : 707-714

(23)   Kim H. et.al (2011). Comprehensive Review of opinion Summarization. Illinois Digital Environment for Access to Learning and Scholarship:1-30

(24)   David Gonzalez-Marron et.al.(2017). Exploiting Data of the Twitter Social Network Using Sentiment Analysis. CST Institute for Computer Sciences, Social Informatics and Telecommunications Engineering 2017:35-38)

(25)   Jain Dong et.al. (2014). Classification of Customer Satisfaction Attributes: An Application of Online Hotel Review Analysis. IFIP International Federation for Information Processing2014: 238-250

(26)   Roland Schegg and Michael FUX, (2010). A Comparative Analysis of Content in Traditional   Survey   versus   Hotel   Review   Websites.   Information   and

Communication Technologies in Tourism, ENTER 2010, Proceedings of the International Conference February 10-12 : 429-440

(27) Kotler, P., Keller, K.L., (2009). Marketing management (13th end). New Jersey: Pearson Education Inc, Upper Saddle River: NJ.

(28) Yi, Youjae (1991), "A Critical Review of Consumer Satisfaction," in *Review of Marketing1989,* Valarie A. Zeithaml, ed. Chicago: American Marketing Association

(29) Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985). A Conceptual Model of Service Quality and its Implications for Future Research, Journal of Marketing, 49(4):41-50.

(30) Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988). SERVQUAL: A Multiple-item Scale for Measuring Consumer Perceptions of Service Quality, Journal of Retailing, 64(1):12-40.

(31) Parasuraman, A., Berry, L.L. and Zeithaml, V.A. (1991). Refinement and Reassessment of the SERVQUAL Scale, Journal of Retailing, 67 (4): 420-450.

(32) Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1994). Reassessment of Expectations as a Comparison Standard in Measuring Service Quality: Implications for Future Research, Journal of Marketing, 58 (January):111-124.

(33) Cronin, J.J. and Taylor, S.A. (1992). Measuring Service Quality: A Reexamination and Extension, Journal of Marketing, 56(July): 55-68.

(34) Boulding, W. et al. (1993). A Dynamic Process Model of Service Quality: From Expectations to Behavioural Intentions, *Journal of Marketing Research*, 30(February):7-27.

(35) Brady M.K., Cronin, J.J. and Brand, R.R. (2002).Performance-only Measurement of Service Quality: A Replication and Extension, *Journal of Business Research,* 55:17-31.

(36) Marshall, K.P. and Smith, J.R. (2000). SERVPERF Utility for Predicting Neighbourhood Shopping Behaviour, *Journal of Non-profit & Public Sector Marketing*, 7(4):45-57.

(37) Jain, S.K. and Gupta, G. (2004). Measuring Service Quality: SERVQUAL vs. SERVPERF Scales, *VIKALPA,* 29(2):25-37.

(38) Johns, N., Avcı, T. and Karatepe, O.M. (2004). Measuring Service Quality of Travel Agents: Evidence from Northern Cyprus, *The Service Industries Journal,* 24(3):82-100.

(39) Armstrong, R.W. et al. (1997). The Importance of Cross-cultural Expectations in the Measurement of Service Quality Perceptions in the Hotel Industry, *International Journal of Hospitality Management,* 16(2): 181-190.

(40) Karatepe, O.M. and Avcı, T. (2002). Measuring Service Quality in the Hotel Industry: Evidence from Northern Cyprus, *Anatolia: An International Journal of Tourism and Hospitality Research*, 13(1):19-32.

(41) Nadiri, H. and Hussain, K. (2005). Perceptions of Service Quality in North Cyprus Hotels*,* International Journal of Contemporary Hospitality Management, 17(6):469-480.

(42) Chen, C.M, & Yeh, C.Y.(2011).The causality examination between demand uncertainty and hotel failure: A case study of international tourist hotels in Taiwan. International Journal of Hospitality Management, 31(4), 1045-1049.

(43) Ku, C.S., Wu, W.C., & Lin, A.R.(2011). Strategic alignment leverage between hotels and companies: The buyer-supplier relationship perspective. International Journal of Hospitality Management, 30(1), 735-745

(44) Assaf, A.G., & Magnini, V.(2012). Accounting for customer satisfaction in measuring hotel efficiency: Evidence from the US hotel industry. International Journal of Hospitality Management, 31 (3), 642-647.

(45) Ladhari, R.(2011).The lodging quality index: an independent assessment of validity and dimensions. International Journal of Contemporary Hospitality Management, 24(4), 628-652.

(46) Kahle, L. R., Marshall, R. S., & Kropp, F. (2003). The new paradigm marketing model. *Journal of Euromarketing*, *12*(3/4), 99-121.

(47) Brabham, D. C. (2013). *Crowdsourcing*. Cambridge, MA: MIT Press.

(48) von Hippel, E. (2005). *Democratizing Innovation*. Cambridge, MA: MIT Press.

(49) Christodoulides, G., Jevon, C., and J. Bonhomme, "Memo to marketers: Quantitative evidence for change: How user-generated content really affects brands", Journal of Advertising Research, Vol. 52, No. 1: 53-64, 2012.

(50) Ramón, A, E., and F.E. Chadwick,(2017). "Do different kinds of user-generated content in online brand communities really work?", Online Information Review, Vol. 41, No.7: 954-968.

(51) Li, Y.M. and C.H. Lin,(2009). "Pricing schemes for digital content with DRM mechanisms," Decision Support Systems, Vol. 47, No. 4: 528-539.

(52) Wunsch-Vincent, S. and G. Vickery, "Participative Web: User-Created Content, OECD, Accessed May 10, 2017. http://www.oecd/dataoecd/57/14/38393115.pdf, 2007.

(53) Manap, K. H. A., & Adzharudin, N. A.(2013) . The Role of User Generated Content (UGC) in Social Media for Tourism Sector. In West East Institute International Academic Conference Proceedings (pp. 52–58). Istanbul, Turkey.

(54) Dijck, J. Van. (2009). Users Like You? Theorizing Agency in User-Generated Content. *Media, Culture & Society*, *31*(1), 41–58.

(55) Gemünden, H. G. (1985). Perceived Risk and Information Search. A Systematic Meta-Analysis of the Empirical Evidence. International Journal of Research in Marketing, 2(2), 79–100.

(56) Krishnamurthy, S., & Dou, W.(2010). Note from Special Issue Editors: Advertising with User - Generated Content: A Framework and Research Agenda. Journal of Interactive Advertising, 8(2 (Spring)), 1–4.

(57) Presi, C., Saridakis, C., & Hartmans, S. (2014). User-Generated Content Behaviour of the Dissatisfied Service Customer. European Journal of Marketing, 48(9/10), 1600–1625.

(58) Cheong, H. J., & Morrison, M. A. (2008). Consumers' Reliance on Product Information and Recommendations found in UGC. Journal of Interactive Advertising, 8(2), 1–30.

(59) Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic Word-of-Mouth via Consumer-Opinion Platforms: What Motivates Consumers to Articulate Themselves on the Internet? Journal of Interactive Marketing, 18(1), 38–52.

(60) Bakshy, E., I. Rosenn, C. Marlow, and L. Adamic,(2012). "The role of social networks in information diffusion", Proceedings of the 21st International Conference on World Wide Web, 519–28. ACM, Lyon, France.

(61) Kim, S., I. Lee, K. Lee, S. Jung, J. Park, Y.B. Kim, S.R. Kim, J. and Kim,(2010) "Mobile Web 2.0 with Multi-Display Buttons," Communications of the ACM, Vol. 53, No. 1, pp. 136-141.

(62) Daugherty, T., M. Eastin, and L. Bright, (2008). "Exploring consumer motivations for creating user-generated content", Journal of Interactive Marketing, Vol. 8, No. 2: 16-25.

(63) Blackshaw, P. and M. Nazzaro,(2006) Consumer-Generated Media (CGM) 101: Word-of-Mouth in The Age of the Web-fortified Consumer, New York: Nielsen Buzz Metrics.

(64) Boyd, D., and N. Ellison,(2008). "Social network sites: Definition, history, and scholarship", Journal of Computer-Mediated Communication, Vol. 13, No. 14: 210-230.

(65) Papathanassis, A., and F. Knolle,(2011)."Exploring the Adoption and Processing of online holiday reviews: A ground theory approach," Tourism Management, Vol. 32, No. 2: 215-224.

(66) Valcke, P. and M. Lenaerts,(2010). "Who's author, editor and publisher in user-generated content? Applying traditional media concepts to UGC providers," International Review of Law, Computers & Technology, Vol. 24, No. 1: 119-131.

Online Reports:

1. The Travel & Tourism Competitiveness Report 2019 Travel and Tourism at a Tipping Point. World Economic Forum. http://www3.weforum.org/docs/WEF_TTCR_2019.pdf. 19th Sep2021 AM 9:40.

2. Economic and Social Performance Monitoring Report 2018/2019. The Ministry of Planning and Economic Development https://mped.gov.eg/AdminPanel/sharedFiles/14c30198-6b2c-4828-80eb 19th Sep 2021 9:45

3. Annual Report 2018/2019.Central Bank of Egypt. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEw iv98iKxYrzAhULmhQKHXzUAY4QFnoECAUQAQ&url=https%3A%2F%2Fwww.cbe. org.eg%2F_layouts%2Fdownload.aspx%3FSourceUrl%3D%252Fen%252FEconomicRes earch%252FPublications%252FAnnualReportDL%252FAnnual%2520Report%25202018 -2019.pdf&usg=AOvVaw0ciGbreClzj-5iqXOxu6Iu. 19th Sep 2021 9:50

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دراسة مقارنة بين المحتوى الذي ينشئه العملاء (UGC) وقوائم الاستقصاء عبر الإنترنت لقياس اتجاهات العملاء نحو جودة الخدمة في مجال الفنادق: حالة سلسلة فنادق توليب في مصر

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الملخص:

هدف البحث هذا هو فحص بيانات المحتوى الذي ينشئه المستخدمون على وجه التحديد مراجعات العملاء عبر الإنترنت. وذلك من خلال تحليل المراجعات عبر الإنترنت على موقع حجز الفنادق عبر الإنترنت (Booking.com) باستخدام sentiment analysis (٢١٥٧ من مراجعات العملاء) ومقارنة النتائج ببيانات قوائم الاستقصاء التقليدية عبر الإنترنت (٣١٥ مستقصي منه) بهدف معرفة ما إذا كان من الممكن استبدال بيانات UGC بالاستبيان التقليدي من أجل تقييم أداء الفندق من حيث تصورات جودة الخدمة للعملاء للحصول على مزايا المراجعات عبر الإنترنت المذكورة في الدراسات السابقة حيث ينصب التركيز الرئيسي على تحديد سمات جودة خدمة الفندق التي يمكن استخلاصها من المراجعات عبر الإنترنت ومقارنتها بنتائج قوائم الاستقصاء عبر الإنترنت لمعرفة ما إذا كانت متسقة. بالإضافة إلى ذلك، تم إجراء تحليل عامل استكشافي باستخدام تحليل المكونات الرئيسية من خلال (varimax rotation) لفحص أبعاد نموذج (SERVPERF) لجودة الخدمة وذلك بالنسبة لنتائج الاستقصاء عبر الإنترنت الذي تم إجراؤه في هذه الدراسة. وقد أظهرت النتائج أنه لا توجد فروق ذات دلالة إحصائية بين نتائج الاستطلاع عبر الإنترنت ونتائج تحليل الاتجاهات من مراجعات العملاء عبر الإنترنت. يتضح من نتائج البحث أن مراجعات العملاء عبر الإنترنت يمكن أن تزود الإدارة في مجال الخدمات الفندقية بمعلومات قيمة من أجل فهم تصورات العملاء تجاه جودة الخدمة التي تؤدي في النهاية إلى رضا العملاء. كما يوضح PCA الذي تم إجراؤه على بيانات الاستطلاع عبر الإنترنت أن " Tangibility "هو أهم بُعد في إدراك جودة الخدمة والذي يتوافق أيضًا مع النتائج المستخرجة من المراجعات عبر الإنترنت. وأخيرًا، يتم تقديم بعض التوصيات لكل فرع من فروع فندق توليب لتحسين جودة الخدمة

الكلمات المفتاحية:

قطاع السياحة، صناعة الفنادق، المحتوى الذي ينشئه المستخدم (UGC)، مراجعات العملاء عبر الإنترنت ، تحليل الآراء ، الاستبيان عبر الإنترنت ، SERVPERF ، ادراك العملاء ، جودة الخدمة ، فندق توليب ، مصر