Factors Affecting the Usage of Online Booking Sites: Comparative Analysis on Agoda, Booking, and Hotels

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Abstract

Online booking sites operate like any other e-commerce platform. Travel agencies buy rooms from hotels and sell them to customers, which are the travelers. As customer satisfaction is one of the main goals of the hospitality industry, it is vital to know the implications of what satisfies a traveler using an online booking site. Though studies on online booking sites are limited, the study would investigate this research gap. Thus, the research study aims to explore the importance of online booking and its implications on customer satisfaction and on the hospitality industry, particularly the hotel industry. To do this, the researcher assessed three online booking sites, mainly: Agoda, Booking, and Hotels. A questionnaire was conducted to survey 165 respondents who had experiences in online booking. Using the data from the survey, the three online booking sites and the survey data undergone assessment of their current systems, ANOVA test, Correlation analysis, Multiple Regression analysis, Risk assessment, and benchmarking. It was found out that the three online booking sites have their similarities and differences in the factors identified in the research study. These subfactors that are under hotel rental price, hotel rating, hotel location, e-service quality, and interface prove to be important.

Keywords
Hospitality Industry, Customer Satisfaction, Online Booking Sites, Lodging.

1. Introduction
The internet has become a predominant routine in our daily life. Most people spend their time browsing or using the internet in their activities. Because people spend time on this type of platform, activities that used to be done in the physical world are gradually integrated into the internet. Communication with people can now be done through social media, reading/watching news, which can now be done through blogs, and many more are examples of this.
That said, companies immediately went with this trend as they started streamlining their businesses online; this gave birth to e-commerce. Electronic commerce or e-commerce has become an emerging industry. It was introduced around the 1960s with the first primitive electronic data transactions, and the first online transaction was done in 1994. Selling has become digitized, and everyone can purchase goods or products over the internet. In succeeding years, many businesses started adopting this marketing strategy to expand their accessibility to other consumers of other regions (Maday, 2021).

Although there are many business niches, the hospitality industry can be applied to many companies that cater to the customer's needs, satisfaction, and leisure time. Those that serve food and beverage, travel and tourism, lodging, and recreation are the categories composing this industry (Novak, 2017). As innovations were introduced, the hospitality industry has always been the first to exploit technology (Smirnov, 2021). Such technology comprises the reservation system (SiteMinder Ltd, 2021), rating system (Premiere Theatres, 2017), and others like these are vital components towards quality improvement (Oh and Parks, 1996); this increased the urgency of finding solutions that would efficiently manage the business's online presence.

The traditional way of reservation in hotels is the ones that use any offline source to get an inquiry. Such an offline source would be the use of a phone call. Hotel reservation centres receive calls from direct customers to inquire about room availability; this is tedious as the process tends to be complex and prone. Even though traditional methods of

commerce still exist in the Philippines, e-commerce was significantly popularized amongst internet-savvy users (Sanchez, 2020). The internet penetration in the Philippines reached 67% in January 2020 (Kemp, 2021).

Like any other industry, the hospitality industry's primary source of revenue is its customers. There would be no profits gained in running the business without these customers. Thus, they focus on their customer's satisfaction to measure their success. If the customer is satisfied, the business can comply with the wants and needs of their customers. It generates a reputation for the company, wherein it would help benefit the well-being of their customers.

Although customer satisfaction is subjective and almost unpredictable, there is a fine line where a brand, product, or service is considered satisfactory within a majority. Studies were conducted to determine factors that could affect customer satisfaction and analyze these factors to know their impact on their business. Typical elements in retail include brand characteristics such as brand identity, brand image, brand integrity, and brand interaction (Dash et al., 2021). They summarize the overall customer satisfaction, but most do not apply the same with service-based businesses. A more specific definition must be given to them. Measuring customer purchase intention investigates perceived price, brand loyalty, and information and website quality. These factors are measured separately, which does not entirely lead to customer satisfaction. Therefore, a combination of factors was examined. These are hotel rating, hotel rental price, service quality, and hotel location (Ullah et al., 2019).

To thrive in this industry, one must cope and understand e-commerce and its influence. Some hotels still use manual reservations to book rooms in hotels (Bemile et al., 2014). Thus, studies were done to explain the importance of e-commerce. Unfortunately, there has been little research on the application of e-commerce and its importance to hospitality industry management (Huang et al., 2009), especially in the Philippines. The e-commerce being referred to in this study is in the form of an online booking site. Online booking sites sell their products in the form of hotel rooms. Most studies use qualitative measures to assess their impact, leaving discrepancies from what may be true today. Thus, the researcher aims to explore the benefits or effects of online booking in online booking sites, especially in the hotel industry: 1) Examine if there are any significant differences among the different online booking sites per factors, 2) Identify the possible relationship between the factors indicated in the study, and 3) Determine the factors that affect customer satisfaction of online booking in the hotel industry.

Conducting this study would benefit travel agencies, hotel management, and other entities that concern the hospitality industry. The study investigates the importance of online booking sites as part of their hospitality management. Furthermore, it would help improve the overall system of the online booking site and satisfy travelers more. In general, the results of this study would help the hospitality industry as a whole as they need each other to function and offer the best experience to their valued customers.

That said, the study would analyze hotel rental price, hotel rating, hotel location, e-service quality, and interface. It is also important to note that the investigation is limited to the perception of the average Filipino consumers/travelers. These consumers primarily have experience before visiting online websites of the hospitality industry. In the survey, the respondents of this survey would be Filipino users of sites: Agoda, Booking, and Hotel. Wherein the questions are based on their experience in booking at hotels.

2. Methodology
Few research studies dwell on the effects of online booking sites in the hospitality industry. In addition to that, the perception of customer satisfaction in using online booking sites is not evident. To investigate this research gap, the researcher would conduct a survey and an extensive review of related literature to explore the topic of interest.

2.1 Phase 1: Assessment of the Current System of Online Booking Site Companies
The researcher identified the survey responses and historical data from online booking companies. A survey is provided to respondents to collect data and answer the researcher's questions. The questions asked in the study are sole to describe the respondent's online booking experiences. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis was then performed to show and assess the online booking site's system; this is vital for the company's success. Each company was based on the concept of booking a reservation of hotel rooms at a specific location, time, and duration. The companies all strive to provide the best booking experience for all travelers as much as possible. Although these booking sites have similarities, they contain differences that set them apart, creating preferences among travelers.

The main properties of the data in the study were identified and described using descriptive statistics. The data shows how different online booking sites are rated. Measures of central tendency and measures of variability are two types of descriptive statistics. It displays measurements and scores for the various aspects that influence online booking sites. Descriptive statistics were also be used to determine which websites were the most popular among travelers.

2.2 Phase 2: Identifying the Significant Factors Affecting Customer Satisfaction of Online Booking
The next phase was done where the researcher identified the strengths and weaknesses of each company. Descriptive statistics provided data variability, and a breakdown of how spread out the data collected was standard deviation. Some historical data or related literature was used to identify and justify the market behavior of the companies within a period to know the internal affairs or workings to the factors that may affect them. The following data was used to create statistical models and estimated procedures called Analysis of Variance (ANOVA) to examine whether there is a significant difference among Agoda, Booking, and Hotel including within each of their factors. Correlation analysis was also used to analyze the meaningful relationship among the factors stated in the study. Moreover, regression analysis determined which factors impact customer satisfaction when using online booking sites, and a regression model that estimates and measures customer satisfaction given some parameters in the equation.

2.3 Phase 3: Make suggestions on how to enhance the current system of online booking sites
The data from the previous steps were utilized in the final phase; here, the researcher used the data to identify risks or threats that may affect the companies. The researcher conducted a risk analysis to formulate contingency plans for hazards for online booking sites. Lastly, benchmarking was used to determine optimal practices for the companies to apply on their online booking site. In other words, a proposal of an improved system and interface for the online booking sites.

3. Results
3.1 Agoda
Agoda gives customers two options in paying for accommodations, either Agency or Merchant Model. The Agency option allows customers to pay for the accommodations directly to the hotels. In contrast, the Merchant Model allows the customers to pay for the accommodations as part of a travel package. The accommodations under the Merchant Model may look discounted to the customers. However, Agoda has already placed an income price. Agoda also encourages customers to book with them by using promos like the PointsMAX. Customers are always searching for products and services worth their money and time. Agoda provides quality services that are reasonable and reliable. Repeated good quality service ensures comfort and builds good relationships between the supplier and the customer. Many customers have also kept using Agoda's services for the satisfaction and familiarity of using their services. Once the service receives the trust and comfort customers seek, they start building a good relationship, primarily when quality performance is delivered repeatedly. Agoda has been recognized to provide good quality service without fail and has minimal gaps in meeting customer demands. If such rare errors happen, they provide adequate compensation and apply these lessons to avoid repeated mistakes. These strategies added to Agoda's good reputation and were deemed a default or to-go option for Filipino travel newbies. Additionally, Agoda has achieved numerous innovations in its time. They have a first-mover advantage in fields such as leadership and organizational structure.

It is inevitable for every business to have a few misses. Agoda is short on crucial expertise, particularly in technology and digital transformation. Agoda is attempting to restructure processes considering recent advances in Artificial Intelligence (AI) and machine learning. The website's design is compact and cluttered. It is not one of the minor drawbacks of Agoda; however, if the interface is confusing, then customers might make mistakes during their purchases or worse, they might tire of the confusing interface. Agoda has a shortage of technical and financial resources that will support the company's improvement and meet the customers' needs. Moreover, Agoda's inventory and cash-flow management are inefficient. Although Agoda has integrated technology into its back-end processes, it has yet to harness its power in its front-end processes.

Agoda has the opportunity to improve in the areas of its weaknesses. Since web design is ever-changing and follows the trend of graphic design, it can enhance the overall aesthetic and structure of its web contents and design. They can have more flexible options for customers; this might be in the form of packages with varying inclusions, varying price ranges, a more comprehensive range of hotel accommodations, and transport services. They can also experiment, giving customers a chance to choose their preferred accommodations with activities and transport companies. They

may also allow customers cancellations with the appropriate penalty fee. Agoda can also entice customers by offering different promos, discounts, and freebies.

Since the market for online booking is easy to enter, numerous online booking sites are available as substitutes. Most of the competition would lie in which booking site would offer the lowest price for a specific hotel room reservation. Due to the pandemic, governments worldwide imposed guidelines, one of which was travel restrictions. Hotels have to follow protocol with these policies when it comes to travel; this ultimately affects the usage of Agoda since it depends on travel and tourism. While the ban is slowly being lifted, recovery might be slow to pick up.

3.2 Booking

Strengths of Booking include using the Agency model wherein the customers directly transact with the hotel for accommodations; this ensures transparency and no other added prices. They show prices for the whole length of stay rather than per day so customers will not be misled. The Genius program is a feature on Booking that gives incentives to their business partners. These valued business partners were given more exposure on Booking's site; this is the most acceptable option for gaining easy-to-earn status that comes with guaranteed upgrades and breakfast. Booking operates in an environment governed by various rules and regulations imposed by the government. They are well-managed as they see that their business environment and limitations are adhered to; this incentivizes employees and business partners to work better and remain in the company. The firm ensures to navigate the environment by forming a solid relationship with lobby groups and political networks. Booking also boasts of a wide variety of accommodations of options; this allows customers to have broad prospects in terms of prices and type of accommodation. The different mentioned strengths make Booking an established go-to choice for many locally and abroad travelers.

Booking is experiencing a severe skills shortage, particularly in technology and digital transformation. Booking.com, like Agoda, is attempting to restructure procedures in light of advances in artificial intelligence (AI) and machine learning. According to the respondents, the web design of Booking.com was cluttered; this makes it prone to confusion and information overload to users of the site. Despite the company's numerous patents and copyrights, Booking.com's business model is easily replicable. In the industry where Booking.com operates, intellectual property rights are complicated to enforce. The business model is rigid and does not seem to allow any room for adjustment. Other businesses also will be able to copy their model easily. Project management was overly focused on internal delivery rather than taking all external stakeholders' interests into account. This approach may result in a negative public image and customer resentment.

Booking can go with the trend of web design. As graphic design may change in the coming years, updating and improving their web design to a lesser cluttered structure would entice travelers to use it more. There are also local hotels in the Philippines that does not utilize the Genius program. Booking.com can take this opportunity to expand its partnership with other hotels to gain more promos and discounts to offer to users of the site. In line with the road to development and usage of AI and machine learning in the website, Booking.com has the chance of innovating processes such as integrating new payment options of bank transfer based on the user's nationality. The threats that Booking.com faces are similar to Agoda; this is typically due to the threats being external or outside forces. Competition with other online booking sites is inevitable and mainly hotel rental prices. As of writing this paper, travel restrictions have been a threat to the success of Booking.com.

3.3 Hotels

It is noteworthy that Hotels.com uses the Merchant Model; this essentially means that hotels sell rooms to Hotels.com in bulk at discounted or wholesale pricing. Customers are then sold at a markup by the firm; this is the most prevalent arrangement, and it is advantageous to both sides. The site's web design uses minimalistic features such as colours and the contents around the web pages. Users would not have any trouble loading the site as it uses less scripting. The online booking site also has Hotel stamps as their reward system for using their website in booking a reservation. Collecting stamps on a certain amount would enable travelers to claim a reward* night; this is an excellent strategy to gain returns on hotel bookings. Hotels.com Rewards has two levels of elite status. After completing ten nights in a calendar year, a user account can be upgraded to silver status. A user would receive additional benefits at chosen properties, such as complimentary breakfast or spa vouchers. After completing 30 nights in a calendar year, they would be upgraded to gold status. When available, a user would receive all the benefits of silver membership, room upgrades, and early check-in and late checkout at VIP Access properties. Hotels.com operates in a global market

space; thus, the risk in revenue growth is fewer. As of writing this study, Hotels.com offers measures and information about COVID-19 and other travel guidelines during this pandemic.

In surveying the respondents, Hotels.com does not do aggressive site advertising. Most Filipino travelers do their research to discover the site. Furthermore, Hotels.com is still far from being at the level of the bigger known online booking sites. The site lacks discounts and promo offers that travelers mainly try to find; this would affect their popularity as travelers would find other online booking sites that offer better deals. The firm gives little effort to research and development; such efforts are essential to further improve the booking site's services. Hotels.com is not known to be leading in some areas such as Design, Organization structure, and many more, unlike Agoda and Booking; this would cost them their competitiveness.

Although Hotels.com has a simple web design, they are still open to changing them in the future. Having an up-to-date Graphic User Interface (GUI) is essential to remaining on the current trends of what is aesthetically pleasing; in a way, this helps garner attention to travelers on using the online booking site. Hotels.com needs to improve its competitiveness by increasing its partnership with hotels mainly in the Philippines to attain better package deals, discounts, and promos. This way, travelers would be more encouraged to book rooms using the site. Hotels.com also has the opportunity to add flexible options of contacting customer support. A more comprehensive option for communicating helps issue resolution be more efficient and effective.

In the Philippines, Hotels.com is not known, unlike Agoda and Booking. It proves challenging to have a competitive advantage when there are numerous competitors in this kind of market. With that said, Hotels.com has many intense competitions; this means that there are many substitutes where travelers can turn if the offer on the site is not of their liking. Lastly, just like any other online booking site, Hotels.com is faced with the threat of the pandemic and the travel restrictions that would affect their services.

3.4 ANOVA
Table 1 displays the results of the Analysis of Variance (ANOVA) that was used to identify the significant differences between online booking sites. For the most part, Agoda was rated the highest on the overall rating of hotel location, e-service quality, and interface out of the three applications; this indicates that Agoda customers were the most satisfied with their experience in booking hotel rooms online. For the Hotel rating factor, respondents are more satisfied with the performance ratings in the Hotels online booking site. Hotels follow their performance (star) rating guidelines indicated in the Expedia Group, arguably industry-standard (Expedia Group, 2022). Respondents also commented that the performance ratings of the site are easy-to-see because of the minimalistic design; this web design already sets it apart from the other two online booking websites (Visibee, 2018). In most cases, due to Agoda having both utilized the Agency and Merchant model, Agoda would offer the hotel's lowest price. Agoda buys the hotel rooms in bulk and sells them at a competitive price (Nean Der Thal, 2019). An article states that Agoda was more effective and efficient with the booking process because of interactive design, with the e-service quality and interface factors. Looking at Booking and Hotels, both websites place their search filters on the left bar of the site in a vertical manner that would most of the time make it go unnoticed. The writer argued that Agoda did this better with easier-to-see search filters such that the filters can already be seen just below the search bar horizontally. Agoda also uses a brief look at the curated filter groups. Unlike the search filters that span beyond the screen on Booking and Hotels, Agoda curates its filters in only four groups of buttons. In turn, the design ultimately aids the user to see all the essential features immediately (Shirley, 2021) (Table 1).

Table 1. ANOVA of Agoda, Booking, and Hotels

Factors	Online Booking Site			Average (Mean)	P-Value	Decision	Tukey Test
	Agoda	Booking	Hotels				
Hotel Rental Price							
Room reservation prices	4.02	3.80	3.77	3.86	0.06	w/o SD	
Discounts and Promotions	3.93	3.76	3.73	3.81	0.17	w/o SD	
Hotel Rating							
Performance rating	3.88	3.91	4.13	3.97	0.01	w/ SD	Hotels-Agoda, Hotels-Booking
Customer ratings and reviews	3.98	3.62	3.98	3.86	0.00	w/ SD	Booking-Agoda, Hotels-Booking

Hotel Location							
Address information	4.07	4.13	3.83	4.01	0.02	w/ SD	Hotels-Booking
Web mapping platform	4.02	3.85	4.02	3.96	0.26	w/o SD	
E-service Quality							
Searching	4.07	3.87	4.00	3.98	0.13	w/o SD	
Accommodation info	3.90	3.82	4.02	3.91	0.21	w/o SD	
Accommodation tips	3.72	3.73	3.79	3.75	0.87	w/o SD	
Transportation	3.45	3.02	3.44	3.30	0.00	w/ SD	Booking-Agoda, Hotels-Booking
Payment options	3.90	3.89	3.96	3.92	0.81	w/o SD	
Payment convenience	4.00	3.85	3.96	3.94	0.43	w/o SD	
Transaction	4.12	4.13	3.46	3.90	0.00	w/ SD	Hotels-Agoda, Hotels-Booking
Cancellation	3.64	3.62	3.12	3.46	0.00	w/ SD	Hotels-Agoda, Hotels-Booking
Transaction convenience	4.28	4.11	3.42	3.94	0.00	w/ SD	Hotels-Agoda, Hotels-Booking
Responsiveness	3.76	3.44	3.08	3.42	0.00	w/ SD	Hotels-Agoda
Reliability	3.69	3.53	3.60	3.60	0.53	w/o SD	
Interface							
Navigation	3.90	3.64	3.56	3.70	0.03	w/ SD	Hotels-Agoda
User-friendliness	4.00	3.55	3.56	3.70	0.00	w/ SD	Booking-Agoda, Hotels-Agoda
Organization	3.88	3.60	3.54	3.67	0.01	w/ SD	Hotels-Agoda
Design	3.81	3.33	3.88	3.67	0.00	w/ SD	Booking-Agoda, Hotels-Booking
Font size	4.19	4.07	3.90	4.06	0.01	w/ SD	Hotels-Agoda
Font color	3.86	3.51	3.52	3.63	0.01	w/ SD	Booking-Agoda, Hotels-Agoda
Hotel images quality	4.19	3.98	3.96	4.04	0.14	w/o SD	

3.5 Regression Analysis

The researcher used regression analysis to identify the significant factors that affect customers' overall satisfaction in using online booking sites by using the data obtained from the survey. The analysis of variance for the regression model is shown in table 2. Within it contains the significant factors having p-values lower than 0.05 and a big impact on the overall satisfaction of online bookers. The crucial factors were only shown since a stepwise regression was performed. Table 3 shows three significant factors. The factors include Customer ratings and reviews, Payment Convenience, and Hotel Images Quality. The model summary for the regression analysis is also shown below in table 4. The R^2 value represents how much of the dependent variable, overall satisfaction, is accounted for by the independent variables. That said, 46.29% of the Overall Satisfaction (Yi) is explained by Customer Ratings and Reviews (x_1), Payment Convenience (x_2), and Hotel Images Quality (x_3). The regression formula for the Overall Satisfaction is also shown below for computational purposes,

Table 2. ANOVA of Agoda, Booking, and Hotels

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	3	27.896	9.2988	46.25	0.000
Customer ratings and reviews	1	3.848	3.8478	19.14	0.000
Payment convenience	1	1.288	1.2875	6.4	0.012
Hotel images quality	1	11.319	11.3193	56.3	0.000
Error	161	32.37	0.2011		
Total	164	60.267			

Table 3. Regression Analysis Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	0.683	0.303	2.26	0.025	
Customer Ratings and Reviews	0.2742	0.0627	4.37	0	1.17

Payment Convenience	0.1574	0.0622	2.53	0.012	1.18
Hotel Images Quality	0.4211	0.0561	7.5	0	1.15

Table 4. Regression Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.448395	46.29%	45.29%	42.66%

3.6 Benchmarking

On room reservation prices, the three online booking sites do not have any significant difference in providing rental prices of the hotels. All three can change the desired currency displayed on the screen based on the user's homeland. Even though Agoda does not separately show the taxes and other fees included in the price like Booking and Hotels, the difference is insignificant to notice. All three online booking sites can meet the requirement for the best international platform to offer reasonable prices and specific charges in every currency worldwide. On discounts and promotions, the three online booking sites do not have any significant difference in providing deals and promotions. All three online booking sites can offer discounts and promos to users at different prices, which respondents were generally satisfied with. The only difference the three online booking sites have are their approach to attaining these discounts. Booking uses the Agency model, Hotels uses the Merchant model, and Agoda uses a mix of both; this difference is insignificant because it concerns the back-end processes of the companies. At face value, users would not be able to notice this. Moreover, all three online booking sites meet the criteria of the best practices for any international country, wherein they are partnered with hotels worldwide to provide discounts and promotions accessible to global users.

There is a significant difference found between the three online booking sites on performance rating. Both Agoda and Booking fall short on Performance Rating. According to respondents, they appreciate the simplistic design of Hotels that makes it easier for them to spot the performance ratings such that it was overcrowded with other information. Agoda, Booking, and Hotels met the best practices for online booking sites competing internationally regardless. That said, Agoda and Booking should follow the approach of Hotels in performance rating. On customer ratings and reviews, the difference lies in how each display the reviews and ratings of customers on a hotel's page. Agoda can present two sources of reviews: one from the website and another from Booking; this is essentially an efficient method if users need to compare reviews from different sites. In Contrast, Booking has the lowest rating. Respondents seem to have trouble with the ratings and reviews as they are easy to miss due to the website's layout. The customer's reviews and hotel ratings were almost hidden if they did not scroll further down the page (Shirley, 2021). Furthermore, in other countries, the best practices would be to present reliable and informative reviews; all three online booking sites were able to meet this requirement. With that said, Booking should follow the layout of Agoda and Hotels.

There was a significant difference between Agoda, Booking, and Hotels on address information. Agoda and Booking have the feature of directing the user from the hotel listing page to the mapping interface of their sites; Hotels particularly lack this feature. Additionally, Hotels locates the hotel's address on the right corner of the hotel page, just below the mapping interface thumbnail, unlike the other two where it was located below its name. It was common to provide a complete and accurate hotel address as the best practices in almost all countries; in this regard, the respondents were generally satisfied with the three online booking sites. All three online booking sites utilize a web mapping platform that utilizes Google map data on the web mapping platform. No differences were observed except Agoda and Booking uses a pop-up window for the map interface, while Hotels uses a separate web page. The map was up to date where it used data in 2022 and accurate. The benchmarks for each website's web mapping platform performed well to satisfy their customers and meet the best practices applied internationally.

Agoda was able to add flight and add another hotel to its search page to find bundle deals, and a search filter is present to customize searching. Booking allows the user to proceed to the hotel listing page without inputting a check-in and check-out date, and search filters are also current. Hotels only have the essential search functions: the search bar, check-in and check-out date, number of rooms, and number of guests, and the search filter is there for customization of searching. There is no significant difference between the three online booking sites. All the respondents are equally satisfied with each website's search options and search filters. Agoda, Booking, and Hotels especially contain the necessary features of a search engine for booking hotels practiced in other countries. Regarding accommodation

information, Booking is the only online booking site of the two other online booking sites that describe the hotel. While Agoda and Hotels do not have a hotel description, Booking describes the hotel in a paragraph just below the hotel images. Booking has the lowest satisfaction rating; this could mean that most respondents' preferences are with hotel pages with descriptions that are not in paragraph form. Booking should structure their hotel's descriptions like how Agoda and Hotels structure them. Nonetheless, all the three online booking sites follow the best practices applied internationally; these include search functions that contain the search bar, check-in & check-out date, number of guests, number of rooms, and search filters. There is not much difference between Agoda, Booking, and Hotels on accommodation tips. Agoda includes labels and tips if a property is in high demand, has the best price guaranteed, is the most popular choice, etc. Booking includes labels and tips if a property has several rooms, vacancies, limited-time deals, etc. Hotels include labels and tips if accommodation is "loved by guests", an aparthotel, a condo, etc. Respondents feel satisfied with either website since the three have a satisfactory rating level; this also means that no one favors one over the other when providing accommodation tips. That said, the best practice for accommodation tips are to present tips that prove to be useful for a traveler's stay, which the three online booking sites were able to do. On transportation, each online booking site has its approach in providing transportation information. Agoda includes information on transportation for a hotel, where it also delivers booking of flight, P2P airport transfer powered by Mozio, and a car rental powered by Rentalcars. Booking provides information on transportation for a hotel, where it also includes a flight search powered by Kayak, a P2P airport taxi and a car rental powered by Rentalcars. Hotels only provide information on what public transportation to take from the airport to the hotel. The best practice that the online booking site should do to compete with international online booking sites is to provide complete information regarding transportation. The differences were significant such that Booking's approach has the lowest rating of the three online booking sites. On payment options, all three online booking sites could satisfy the respondents. In other countries, the best practice for online booking sites is to provide various payment modes available. There is no significant difference found between the payment methods of each online booking site. Agoda, Booking, and Hotels could meet this requirement as they offer payment through credit/debit card, digital wallet, and physical money at the property. On payment convenience, the best practices that countries look for in an online booking platform are easy and convenient. In this regard, Agoda, Booking, and Hotels could deliver satisfactory levels of payment convenience. No significant differences were found that separate each online booking site. There were no changes needed regarding payment convenience for Agoda, Booking, and Hotels. On the transaction, online booking sites make sure to be a platform that does not encounter any problems to avoid customer frustration for every country. It was found that there is a significant difference comparing the three online booking sites; this difference was mainly found between Hotels-Agoda and Hotels-Booking. Hotels occasionally encounter problems, while Agoda and Booking encounter few next to none. International users commonly look for online booking sites with easy and flexible cancellations on cancellation. Through comparison, it was observed that there is a significant difference between the three online booking sites. Specifically, the difference is found to be between Hotels-Agoda and Hotels-Booking. Hotels had the lowest rating of the three online booking sites. Respondents generally find Hotel's cancellation policy to be somewhat okay. Users commented that the Hotels cancellation policy was not flexible. On transaction convenience, it is common for online booking sites to give their customers an easy and hassle-free transaction to compete with other similar websites internationally. There is a clear significant difference between Agoda, Booking, and Hotels; this difference is between Hotels-Agoda and Hotels-Booking. As Hotels encounter occasional problems with their transactions, respondents find it inconvenient as they experience an occasional hassle. Hotels should improve on this aspect to further improve their customer's satisfaction. Responsiveness refers to the quality of customer support in answering queries quickly and thoroughly. For an online booking site to compete internationally, they should have a customer support team that is very responsive to inquiries and concerns of their customers. There is a distinction of quality of responsiveness shown among the three online booking sites, particularly on Hotels. According to the ANOVA test and benchmarking, it was observed that the difference is mainly between Agoda and Hotels, where respondents' satisfaction for Hotel's customer support responsiveness is neutral; this means that Hotels should improve on this aspect to improve their customer's satisfaction further. Reliability refers to the quality of customer support to be trustworthy and clear to users of the site; this relies upon personnel to be consistently helpful. According to the ANOVA test and benchmarking, there is no difference in each website's customer support reliability. A common practice for any country is for customer support to be helpful at all times. The mean ratings for Agoda, Booking, and Hotels are all satisfactory, meaning they were able to meet the requirements but still have room for improvement. In summary, Hotels needs to improve in Transaction, Cancellation, Transaction Convenience, and Responsiveness. Hotel's server frequently shuts down due to problems like check-out, reservations, and the website itself. Many users have had their complaints voiced of having transaction problems and complaints on customer support. It seems Hotels need to focus their attention on these metrics to help satisfy their customers and perhaps look into the other online booking sites for benchmarking (Ookla LLC 2022; ChrisP4351 2018).

Navigation is an essential subfactor in progressing on booking hotels online. Without it, no bookings would be made. As a practice, navigation should be easy to follow and efficiently directs the user to other prompts; this way, online booking sites would satisfy more customers locally and abroad and compete with other online booking sites internationally. Comparing Agoda, Booking, and Hotels together, there is a clear difference amongst the three. The difference was found to be between Agoda and Hotels. Agoda ranked the highest in terms of navigation. Respondents were generally satisfied with Agoda's navigation, while the other two were somewhat okay. The website should be easy to learn, use, understand, and deal with to be the best online booking platform internationally. In this regard, there is a significant difference between Agoda, Booking, and Hotels regarding user-friendliness. The difference comes from Booking-Agoda and Hotels-Agoda since Agoda scored higher than the other two. Agoda was rated to be easier to understand, learn, and use than Booking and Hotels. The best practice for an online booking site is to have its web contents organized so that users would not have a hard time locating the essential functionalities of the website. It also aids in making the process of booking to be efficient. Moreover, there is a significant difference between Agoda, Booking, and Hotels. The difference was found to be between Agoda and Hotels. Agoda was rated organized since it uses button-sized filters and sectioning to categorize other contents. The website arranges importance based on placement from top to bottom of the page. The three online booking sites look distinctively different because of web design. One factor that makes online booking sites stand out is their overall aesthetics. Nowadays, everyone worldwide aims for minimalistic layouts, which are simplistic, appealing to the eyes, and consistent. For Agoda, its design is aesthetically pleasing to the eyes. For Booking, its design has a good contrast of colours. Hotels use a minimalistic approach in their interface, is aesthetically pleasing to the yes, and has great colours. Font sizes have a part in the aesthetic of the interface. According to the best practice applied in every country, Suitable font sizes are ones where the texts are visible, readable, and distinguishable from each other. From the ANOVA test and benchmarking, there is a significant difference among the three online booking sites. Notably, the difference came between Agoda and Hotels. Hotels were rated the lowest as respondents answered that they were readable at best; this suggests that Hotels increase their font sizes. Knowing the right font colour makes texts look readable and help in the aesthetics of systems. In interface design, it emphasized points, labels, and other important information. It is good practice to have font colours that contrast the background such that it is distinguishable from other elements of the webpage. There was a clear significant difference among the three online booking sites. Specifically, the differences were Hotels-Agoda and Booking-Agoda. Agoda was rated the highest in satisfaction as it effectively uses a wide range of font colours for indicating alerts, offers, descriptions, and many more. Booking and Hotels should benchmark their usage of font colours to Agoda's. Hotel images are one of the many essential features of an online booking site. It was used for previewing what the hotel and its other facilities look like at face value before deciding and booking it. Internationally, the best practice to maximize customer satisfaction is by providing high-quality hotel images; this means that images look professional, clear, and up to date. In this regard, respondents were satisfied with the hotel images quality provided by Agoda, Booking, and Hotels. No significant differences were found among the three online booking sites, as all of them were able to offer complete high-quality images of their facilities updated regularly.

5. Conclusion

In this study, the researcher assessed the current systems of travel agencies. The researcher has concluded that all the sites have their difference in offers of hotel rental price, approach in reviewing and rating a hotel, map interface of a hotel location, approaches in their e-services, and designs of an interface. While there were differences, the similarities lie in the purpose of their functionalities. Ultimately, their goal was to get the best out of the online booking experience. For confirmation, the researcher performed various comparative tools and analyses. The SWOT Analysis found out that all the online booking sites have their differences in strengths and weaknesses. One of which is the reward systems they utilize for their customers. However, they have similarities in opportunities and threats. All the sites could improve their interface design, increase partnership, intense competition, especially in rental prices and travel restrictions.

A total of 165 respondents participated in the survey. Most of them were middle-aged females who work in the health and wellness department; this also means that they have a stable job and monthly income, making them legible for the survey. Through observation, Filipinos seem to know about Agoda and Booking, but less about Hotels. Agoda also had the most respondents that reviewed its site than the other two, Hotels being the lowest. Most of the respondents reasoned that they use the website because it provides complete information and detail regarding the accommodations they are trying to find. Though most of them answered that they occasionally book online, respondents' reason that it is due to the current pandemic faced when this study was conducted. Moreover, respondents discovered the online booking site they come to familiarize themselves with by their search, and others through an advertisement made by the travel agency.

Based on the ANOVA, there are significant differences in the online booking sites per identified factors. The factors that have significant differences were: performance rating, customer ratings and reviews, address information, transportation, transaction, cancellation, transaction convenience, responsiveness, navigation, user-friendliness, organization, design, font size, and font colour. Most of the significant differences come from the means difference between Agoda and Hotels, wherein Agoda had the highest mean and Hotels had the lowest mean. Thus, the statement that there was no significant difference in the online booking sites per identified factors must be rejected; this satisfies the study's first objective.

Testing for the relationship between the variables was done using Pearson's Correlation approach. Through the correlation analysis, it was found out that there are significant relationships between the variables or factors. All the factors that have a significant correlation have a weak to a strong relationship directly proportional to each other. It is important to note that three of the highest correlational values come from user-friendliness and navigation, payment option and payment convenience, and user-friendliness and organization, respectively. It can be said that satisfaction in user-friendliness is determined and dependent on the ease of navigation or the organization of the site, vice-versa for the other two factors. Payment options were also relative to the payment convenience since different payment methods ease use. Furthermore, the statement that there was no significant relationship between the online booking sites and their identified factors must be rejected; this satisfies the study's second objective.

A regression analysis was also performed to see the subfactors that significantly affect overall customer satisfaction. Among all the subfactors, hotel image quality, customer ratings and reviews, and payment convenience significantly affect travelers' overall satisfaction. Hotel image quality is the most impactful, and payment convenience is the least of the three. Three of the subfactors cover and explain 46.29% of the travelers' overall satisfaction; this satisfies the third objective of the study.

Since the online booking site is a service-based platform, more risks need to be identified and prevented in the e-service quality provided. Through risk assessment, the mode of failures in hotel rental price, hotel rating, hotel location, e-service quality, and interface, preventive measures and contingency plans are determined to help improve or maintain the satisfaction of users of the online booking site. Although the effects of the failure may lead to customers' dissatisfaction, it could lead to customers using a different online booking site instead; this leaves a bad impression on the online booking site. Therefore, it is essential to identify solutions to these problems and have a contingency plan.

To supply the risk assessment in finding solutions to problems, benchmarking between the three online booking sites was conducted to compare them. In summary, Agoda and Booking followed the best practices recommended for both local and international platforms. Hotels, however, fall short in some categories, such as the amount of partnership it has with hotels. The amount of collaboration it has with hotels in the Philippines may have contributed to it not being known to many Filipinos. Hotels need to improve in the fields stated in the benchmarking process.

Due to the limitations of the researcher, Filipino Individuals in the Health and wellness type of work were the most respondents in this study. In future studies, it was recommended to widen the respondents' scope to international individuals who work in different kinds of the field; this is to validate the claims and results of this study. The focus of this study was three booking sites: Agoda, Booking, and Hotels. Adding different online booking sites were recommended to accurately assess the risks and benefits of an online booking site.

References

Bemile, R, Achampong, A., and Dangquah, E., Online Hotel Reservation System. *International Journal of Innovative Science, Engineering & Technology*, 1(9), 582-588, 2014.

ChrisP4351, *Hotels.com is a scam*. Tripadvisor. Retrieved February 2, 2022, from https://www.tripadvisor.com.ph/ShowTopic-g1-i12290-k11962731-Hotels_com_is_a_scam-Bargain_Travel.html, 2018.

Dash, G., Kiefer, K., and Paul, J, Marketing-to-Millennials: Marketing 4.0, customer satisfaction and purchase intention. *Journal of Business Research*, 122, 608-620. doi: 10.1016/j.jbusres.2020.10.016, 2021

Expedia Group, National Ratings, *Hotel Star Rating Information*, Retrieved February 1, 2022, from https://www.expedia.com.ph/Hotel-Star-Rating-Information, 2022.

Huang, J., Jiang, X., and Tang, Q., An e-commerce performance assessment model: Its development and an initial test on e-commerce applications in the retail sector of China, *Information & Management*, 46(2), 100–108. doi:10.1016/j.im.2008.12.003, 2009.

Kemp, S., Digital 2020: *The Philippines. DataReportal – Global Digital Insights*. https://datareportal.com/reports/digital-2020-philippines#:%7E:text=There%20were%2073.00%20million%20internet,at%2067%25%20in%20January%202020, 2021.

Nean Der Thal, Hotel booking: *Why is Agoda much cheaper than booking.com?* Travel Stack Exchange, https://travel.stackexchange.com/questions/138684/hotel-booking-why-is-agoda-much-cheaper-than-booking-com, 2019.

Novak, P., *What are the 4 segments of the hospitality industry*: By Peter Novak, Retrieved April 25, 2021, from https://www.hospitalitynet.org/opinion/4082318.html, 2017.

Oh, H., and Parks, S. C., Customer Satisfaction and Service Quality: A Critical Review of the Literature and Research Implications for the Hospitality Industry, *Hospitality Research Journal*, 20(3), 35-64. doi:10.1177/109634809602000303, 1996.

Ookla LLC., *Hotels.com down? current outages and problems* | Downdetector. Downdetector, Retrieved February 2, 2022, from https://downdetector.com/status/hotels-com/, 2022.

Premiere Theatres, *The truth about ratings*, Retrieved April 25, 2021, from https://premierethéatres.com/the-truth-about-ratings/, 2017.

Sanchez, M. J., *E-commerce in the Philippines - statistics & facts*, Statista, https://www.statista.com/topics/6539/e-commerce-in-the-philippines/#dossierSummary, 2020.

Shirley, W. X., *Booking vs. Agoda: What makes a better hotel search experience?* Medium. https://bootcamp.uxdesign.cc/booking-vs-agoda-what-makes-a-better-hotel-search-experience-part-i-2fc53f054c9b, 2021.

SiteMinder Ltd., *do hotel reservation systems work?* Retrieved April 25, 2021, from https://www.littlehotelier.com/blog/learn-about-tech/hotel-reservation-systems-work/, 2021.

Smirnov, A., *E-commerce for the hospitality industry*, Retrieved April 08, 2021, from https://www.themoscowtimes.com/2011/12/06/e-commerce-for-the-hospitality-industry-a11256, 2021.

Ullah, I., Rukh, G., Zhou, J., Khan, F., and Ahmed, Z., Modeling customer satisfaction in online hotel booking, *Journal of Retailing and Consumer Services*, 48, 100-104, 10.1016/j.jretconser.2019.01.012, 2019.

Visibee, *Customer Satisfaction Through Responsive Web Design*, Visible One, https://blog.visibleone.com/design/customer-satisfaction-through-responsive-web-design, 2018.

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