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| Id | cite | Abstract |
| 1 | @inproceedings{Alotaibi2020ApplicationOM,  title={Application of Machine Learning in the Hotel Industry: A Critical Review},  author={Eid Alotaibi},  year={2020}, | **Application of Machine Learning in the Hotel Industry: A Critical Review**  The study found that machine learning is helpful in demand forecasting, price forecasting, booking cancellation prediction, financial efficiency, and work efficiency and the machine learning algorithms outperform in the forecast accuracy against the statistical models.  Study purpose – The hotel industry like any other industry is witnessing a change due to information and communication technology. However, this change is quite slow. Many researchers in recent time have garnered interest in exploring and implementing the new technologies of artificial intelligence and machine learning in the hotel industry. Therefore, the purpose of this study is to give insights on the role of ML and its integrated technologies in the hotel industry. Design/Methodology/Approach – The study has critically reviewed articles published from 2010 to 2020. To achieve the research objective, the study seeks to answer three main research questions related to the existing literature; RQ1: Where does the hotel industry implement machine learning? RQ2: What are the machine learning techniques used in the hotel industry? RQ3: Which countries are using machine learning in the hotel industry? Findings – The study found that machine learning is helpful in demand forecasting, price forecasting, booking cancellation prediction, financial efficiency, and work efficiency. The machine learning algorithms outperform in the forecast accuracy against the statistical models. The countries at the forefront in machine learning technologies are China and USA. The other countries should take the cue from them and implement machine learning in their hotels Originality of the research – This research conducts exploratory analysis to identify the extent of scientific community knowledge and awareness on machine learning in the hotel industry. To the best of the authors’ knowledge, no prior researcher has conducted a similar study specifically in the hotel industry. |
| 2 | @article{Saputro2021ExploratoryDA,  title={Exploratory Data Analysis \& Booking Cancelation Prediction on Hotel Booking Demands Datasets},  author={Pujo Hari Saputro and Herlino Nanang},  journal={Journal of Applied Data Sciences},  year={2021}, | **Exploratory Data Analysis & Booking Cancelation Prediction on Hotel Booking Demands Datasets**  These results prove that it is possible to predict booking cancellations with high accuracy and can also help hotel owners or hotel managers to predict better predictions, improve cancellation regulations, and create new tactics in business.  Online ordering is the latest breakthrough in the hospitality industry, but when it comes to booking cancellations, it has a negative impact on it. To reduce and anticipate an increase in the number of booking cancellations, we developed a booking cancellations prediction model using machine learning interpretable algorithms for hotels. Both models used Random Forest and the Extra Tree Classifier share the highest precision ratios, Random Forest on the other hand has the highest recall ratio, this model predicted 79% of actual positive observations. These results prove that it is possible to predict booking cancellations with high accuracy. These results can also help hotel owners or hotel managers to predict better predictions, improve cancellation regulations, and create new tactics in business. |
| 3 | @article{Chen2022ComparisonAA,  title={Comparison and Analysis of Machine Learning Models to Predict Hotel Booking Cancellation},  author={Yiying Chen and Chuhan Ding and Hanjie Ye and Yuchen Zhou},  journal={Proceedings of the 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022)},  year={2022}, | **Comparison and Analysis of Machine Learning Models to Predict Hotel Booking Cancellation**  Today, machine learning is utilized in several industries, including tourism, hospitality, and the hotel industry. This project uses machine learning approaches such as classification to predict hotel customers’ loyalty and develop viable strategies for managing and structuring customer relationships. The research is conducted using the CRISP-DM technique, and the three chosen classification algorithms are random forest, logistic regression, and decision tree. This study investigated key characteristics of merchants’ customers’ behavior, interest, and preference using a real-world case study with a hotel booking dataset from the C3 Rewards and C3 Merchant systems. Following a comprehensive investigation of prospective preferences in the pre-processing phase, the best machine learning algorithms are identified and assessed for forecasting customer loyalty in the hotel business. The study's outcome was recorded and examined further before hotel operators utilized it as a reference. The chosen algorithms are developed utilizing Python programming language, and the analysis result is evaluated using the Confusion Matrix, specifically in terms of precision, recall, and F1-score. At the end of the experiment, the accuracy values generated by the logistic regression, decision tree, and random forest algorithms were 57.83%, 71.44%, and 69.91%, respectively. To overcome the limits of this study method, additional datasets or upgraded algorithms might be utilized better to understand each algorithm's benefits and limitations and achieve further advancement.. |
| 4 | @inproceedings{Dimble2022PredictionSF,  title={Prediction System for Flight Fares and Hotel Prices using Ensemble Machine Learning Algorithm},  author={Tejal Dimble and Nikita Pandey and Harshada Narkhede and Ruturaj More Students},  year={2022},  url={https://api.semanticscholar.org/CorpusID:262075830}  } | **Prediction System for Flight Fares and Hotel Prices using Ensemble Machine Learning Algorithm**  As domestic air travel is getting more and more popular these days in India with various air ticket booking channels coming up online, travellers are trying to understand how these airline companies make decisions regarding ticket prices over time. Also, knowing the best time to travel and the best place to stay in appropriate amount is necessary. Unfortunately, the dynamic pricing strategy is usually carried out programmatically and is based on certain hidden parameters (e.g., number of days left till flight departure, or number of seats left). The paper works on mining the previous airfare data and developing data modelling technique to predict the price variation over time so that the consumer could benefit from it. This paper document study conducted to understand the airfare dependency over many hidden variables of which oil price, week day of departure, number of stops still have not received much attention from the research community. Also, this paper extends the research on hotel room prices using traditional and non-traditional statistical models following the analysis by Ka Athanasopoulos and Shehhi (2018), which discusses how hotel prices can be easily predicted. Research data were obtained from Smith Travel Research. In this study, we apply advanced forecasting models based on machine learning and artificial intelligence to the hospitality sector. Some of the models used in this study, such as the ANFIS model, contribute to the research conducted in the GCC region. The goal of the research was to contribute to the academic literature and assist hotel operators and decision-makers in setting appropriate strategies. It also describes the two different methodologies adopted to model this price change, comparative analysis of algorithms under these two methodologies, applied on real world data has also been performed. The comparative analysis thus helped us to find out the most effective algorithm for the prediction of the airfare variations and appropriate hotel prices. The study suggests that mining historical airfare data and hotel fare data, and modelling using machine learning algorithms can help predict the price trend and save consumer's substantial sum. Lately, we have acknowledged that in this era Mathematical terminologies and Scientific Equations has provided solutions to many of the problems. Moreover, the existence of Artificial Intelligence and its subset viz. Machine Learning has made tasks convenient. The power that Machine Learning carries is surely terrible. With various available tools and equipment that these terminologies are providing, the prediction of fares by considering all the components will lead to better understanding of travelling costs and will be helpful for the users to manage their entire travelling cost. |
| 5 | @article{uman2023InformationEA,  title={Information extraction and sentiment analysis of hotel reviews in Croatia},  author={Sabrina {\vS}uman and Milan Vignjevi{\'c} and Tomislav Car},  journal={Zbornik Veleu{\vc}ili{\vs}ta u Rijeci},  year={2023}, | **Information extraction and sentiment analysis of hotel reviews in Croatia**  Today, the amount of data in and around the business system requires new ways of data collection and processing. Discovering sentiments from hotel reviews helps improve hotel services and overall online reputation, as potential guests largely consult existing hotel reviews before booking. Therefore, hotel reviews of Croatian hotels (categories three, four, and five stars) in tourist regions of Croatia were studied on the Booking.com platform for the years 2019 and 2021 (before and after the start of the pandemic COVID-19). Hotels on the Adriatic coast were selected in the cities that were mentioned by several sources as the most popular: Rovinj, Pula, Krk, Zadar, Šibenik, Split, Brač, Hvar, Makarska, and Dubrovnik. The reviews were divided into four groups according to the overall rating and further divided into positive and negative in each group. Therefore, the elements that were present in the positive and negative reviews of each of the four groups were identified. Using the text processing method, the most frequent words and expressions (unigrams and bigrams), separately for the 2019 and 2021 tourism seasons, that can be useful for hotel management in managing accommodation services and achieving competitive advantages were identified. In the second part of the work, a machine learning (ML) model was built over all the collected reviews, classifying the reviews into positive or negative. The results of applying three different ML algorithms with precision and recall performance are described in the Results and Discussion section. |
| 6 | @article{Nguyen2024ClassifyingDL,  title={Classifying Different Levels of Customer Satisfaction With Vietnamese Hotel Services by Analyzing Customer Feedback},  author={Ha Thi Thu Nguyen and Hung Nguyen Manh and Thoa Bui Thi Kim},  journal={International Journal of Asian Business and Information Management},  year={2024},  url={https://api.semanticscholar.org/CorpusID:266939835}  } | **Classifying Different Levels of Customer Satisfaction With Vietnamese Hotel Services by Analyzing Customer Feedback**  The study developed a series of formulas to measure customer satisfaction with Vietnamese hotel service aspects based on inferential statistics and linguistic rules and discovered the negative aspects of positive reviews, while previous studies were rarely mentioned.  The development of online booking systems has created information platforms for sharing customers when choosing a destination. Mining this information helps to understand the customer's experience and measure customer satisfaction with hotel services. Recent studies used this approach with machine learning or language models to mine the data generated by customers on the internet. However, this approach still has some limits when wanting to understand more customer insight. This article uses linguistics rules to measure customer satisfaction by combining aspects and polarity words. In the first step, the dataset with 21,196 reviews on seven main cities in Vietnam was collected from TripAdvisor. Next, the study developed a series of formulas to measure customer satisfaction with Vietnamese hotel service aspects based on inferential statistics and linguistic rules. Python's VADER library was used to measure overall customer satisfaction for Vietnamese hotels. In the final step, by language analysis, the authors calculate and grade the satisfaction score with hotel aspects from 1 to 5. Moreover, the study discovered the negative aspects of positive reviews, while previous studies were rarely mentioned. |
| 7 | @inproceedings{Chauhdary2019ANA,  title={A Novel Approach for Genuinity Analysis of Hotel Online Reviews},  author={Pankaj Chauhdary and Dr. Anurag Aeron and Dr. S. Vijay},  year={2019},  url={https://api.semanticscholar.org/CorpusID:201642029}  } | **A Novel Approach for Genuinity Analysis of Hotel Online Reviews**  This work is specifically proposed for helping customers in selection of the best hotels by analyzing the previous online reviews, and help in concluding the right decision based on Location, Security, Price, Quality, Ambiance etc.  Background: Since previous decades Internet as well as smart phones have become easily accessible to maximum people. This has made social networking an integral part of human life. People are sharing their comments and reviews on the forum or portal about their views and experiences. These reviews help others to judge the brand value of any product. Even in taking the final decisions about the brand selections for best hotels, colleges and products people are gradually depending on the previous online reviews. In such scenario, some companies may indulge themselves in generating the fake reviews with wrong intentions to create the positive or negative hype about the particular products. It may mislead the customers and decision makers. Objectives: Objective is to develop an algorithm to development of the optimal machine learning algorithm for hotel reviews Efforts are made to remove maximum limitations and constraints of existing algorithms to develop a robust algorithm. Methodology: After finding the gaps appropriate mathematical models are proposed to be implemented to detect genuinety of the reviews based on behavior metrics, quantify the past trust analysis of the reviewer, group membership activities and quantify the sentimental analysis for the hotels. Findings: Due to filtration of the spam reviews and fake reviewers, systematic predication about the hotel facilities and ambience may be done that will encourage the customer to use the hotel booking website that will utilize such algorithms. Applications/Improvements: Although this work is specifically proposed for helping customers in selection of the best hotels by analyzing the previous online reviews, and help in concluding the right decision based on Location, Security, Price, Quality, Ambiance etc. Yet the something similar model may be designed after minor modifications for taking right decision in selecting the best colleges, best products etc. |
| 8 | @article{Zhang2023SharedAS,  title={Shared Accommodation Services in the Sharing Economy: Understanding the Effects of Psychological Distance on Booking Behavior},  author={Song Zhang and Yongsheng Lu and Baozhou Lu},  journal={J. Theor. Appl. Electron. Commer. Res.},  year={2023},  volume={18},  pages={311-332}, | **Shared Accommodation Services in the Sharing Economy: Understanding the Effects of Psychological Distance on Booking Behavior**  The sharing economy has risen rapidly in the past decade. The development of shared accommodation encourages more hotels and guesthouses to attract customers through online accommodation-sharing platforms, which has become a meaningful way to fight against the competition of the traditional hotel industry. In this condition, what the hosts are concerned about most is how to attract customers’ attention through the platform display to increase reservations. Based on construal level theory, this paper explores how hosts’ information displayed on online accommodation-sharing platforms determines consumers’ booking behavior by influencing their psychological distance. We use machine learning methods to mine the raw data and extract the representational factors of psychological distance. Based on the data-driven behavior decision-making approach, we collected valid large-scale fine-grained secondary actual consumption data from Airbnb, the world’s leading online accommodation-sharing platform, and scientifically and intelligently processed the data using machine learning methods, then tested the hypotheses using the regression analysis software STATA15. Our findings suggest that both social distance and temporal distance have a negative impact on booking behavior of guests. In detail, subject diversity, perspective taking, and facial attractiveness in the dimension of social distance positively influence guests’ booking behavior; instant bookable in the temporal distance dimension positively affects booking behavior, while response time has a negative effect. This study contributes to the literature by empirically examining psychological distance in the booking behavior of guests in shared accommodation through the processing and analysis of actual consumption data. The findings have important practical implications for how shared accommodation service providers and sharing economy platform managers can operate better. |
| 9 | @inproceedings{Khantal2013RankHO,  title={Rank hotels on Expedia . com to maximize purchases},  author={Nishith Khantal and Valentina Kroshilina and Deepak Maini},  year={2013}, | **Rank hotels on Expedia . com to maximize purchases**  Analysis of some of the most popular ranking algorithms in the online travel booking industry and their relative performance is found.  For an online travel agency (OTA), matching users to hotel inventory is very important. As such, having the best ranking (or sort order) of hotels for specific users with the best integration of price competitiveness gives an online travel agency the best chance of winning the sale. Imagine a hotel ranking system that predicts a permutation of relevant hotels to a user such that a hotel at a higher position always has higher or equal probability of purchase than a hotel at a lower position. Such an order will ensure that a user sees the most relevant hotels first and increase the likelihood that the online travel agency wins the transaction. Ranking algorithms are typically used in document retrieval, expert search, definition search, collaborative filtering, question answering, keyphrase extraction, document summarization, and machine translation applications [5]. Even though ranking algorithms are used extensively in many fields, their application in the online travel booking industry is new. Data collected on travel booking sites are unique to the industry and present an interesting opportunity for applying machine learning algorithms to understand what features are important and which not so. Furthermore, there is very little literature on which algorithm is best suited to obtain optimal results. In this paper, you will find our analysis of some of the most popular algorithms and their relative performance. |
| 10 | @article{Giannoukou2017EvaluationOO,  title={Evaluation of Online Booking System Reviews: Greek Tourists’ Perspective in Booking Behavior Evaluation Explored via Data Mining Techniques during Economic Recession},  author={Ioanna Giannoukou and Constantinos Halkiopoulos and Hera Antonopoulou and Evgenia Gkintoni and Panagiotis Togias and Gerasimos Panas},  journal={SSRN Electronic Journal},  year={2017}, | **Evaluation of Online Booking System Reviews: Greek Tourists’ Perspective in Booking Behavior Evaluation Explored via Data Mining Techniques during Economic Recession**  The purpose of this paper is to illuminate the perspective that tourists and particularly Greeks demonstrate as far as their booking behavior concerned travel reviews during the period of economic recession. Especially online travel reviews written by consumers are ever more available and used to inform travel-related decisions. The present research concentrated on the web platforms of intermediary firms and agencies that constitute the e-tourism sector. These are organizations that facilitate communication and transactions between the primary providers of travel and accommodation services (e.g. airlines, hotels, car hire firms), and potential consumers of those services. Blogs, online reviews (ORs), and social networking platforms are enabling travelers to share information, opinions, and knowledge about all kinds of goods and services in e-Tourism. Specifically, online reviews (ORs) can be considered as electronic versions of traditional WOM (e-WOM) and consist of comments published by travelers. For the data collection, three self- report questionnaires were administered: a) E-WOM and Accommodation Scale (E-WOM), b) Emotion-Based Decision-Making Scale (EBDMS,) c) Emotional Intelligence Questionnaire (TEIQue) clarifying four factors of emotional state; well-being, self-control, emotionality and sociability. There were being created their electronic versions through Google Forms service and posted through the website “http://www.cicos.gr/iccmi2017/obsr”. Then the collected data were selected for analysis, with relevant transformations in order to have a suitable form for the implementation of the respective machine learning algorithms included in the software package R. The methodology, that was adopted, consists of two concrete phases. first phase, questionnaires were created and submitted. During the second phase, the data set were collected, preprocessed and analyzed based on Data Mining techniques evaluating the results. More specifically, classification algorithms were utilized so as to manage to describe hidden patterns. Also, the parameters of the algorithms were set, depending on the application cases, and the results were correlated with the demographic characteristics of the respondents, in order to evaluate and assess the significance of exported rules / conclusions. |
| 11 | @article{Ounacer2023CustomerSA,  title={Customer Sentiment Analysis in Hotel Reviews Through Natural Language Processing Techniques},  author={Soumaya Ounacer and Driss Mhamdi and Soufiane Ardchir and Abderrahmane Daif and Mohamed Azzouazi},  journal={International Journal of Advanced Computer Science and Applications},  year={2023}, | **Customer Sentiment Analysis in Hotel Reviews Through Natural Language Processing Techniques**  This paper suggests using the Aspect-Based Sentiment Analysis approach on reviews extracted from tourism websites such as TripAdvisor and Booking.com to clarify whether opinions are positive, negative or neutral.  Customer reviews of products and services play a key role in the customers' decision to buy a product or use a service. Customers' preferences and choices are influenced by the opinions of others online; on blogs or social networks. New customers are faced with many views on the web, but they can't make the right decision. Hence, the need for sentiment analysis is to clarify whether opinions are positive, negative or neutral. This paper suggests using the Aspect-Based Sentiment Analysis approach on reviews extracted from tourism websites such as TripAdvisor and Booking. This approach is based on two main steps namely aspect extraction and sentiment classification related to each aspect. For aspect extraction, an approach based on topic modeling is proposed using the semi-supervised CorEx (Correlation Explanation) method for labeling word sequences into entities. As for sentiment classification, various supervised machine learning techniques are used to associate a sentiment (positive, negative or neutral) to a given aspect expression. Experiments on opinion corpora have shown very encouraging performances. |
| 12 | @article{Mahadik2016AspectBO,  title={Aspect Based Opinion Mining For Identifying Customer Preferences},  author={Aarati Mahadik and A. Bharambe and Mumbai India},  journal={International Journal of Modern Trends in Engineering and Research},  year={2016},  volume={3}, | **Aspect Based Opinion Mining For Identifying Customer Preferences**  In today's digital world almost all work can be done with internet, as use of web is rapidly increase the data generated by the users is in huge amount in the form of customers reviews, blogs, social networking etc, and an aspect based opinion mining system is proposed for feature/aspect ranking with considering product reviews.  In today's digital world almost all work can be done with internet, as use of web is rapidly increase the data generated by the users is in huge amount in the form of customers reviews, blogs, social networking etc. In our system we propose feature/aspect wise opinion mining for feature/aspect ranking with considering product reviews. Generally products have number of feature/aspects. Some features/aspect may have more importance or some may have less than other as per different opinion from different users. Ranking features/aspect will help firms and users to know more easily about particular product feature/aspect pros and cons. Proposed system used Senti-WordNet for calculating opinion values of aspects with C4.5 classifier to improve the accuracy of opinion polarity. To get more accuracy for feature/aspect summarization semantically similar word approach is used in proposed system. Keywords-Opinion mining, Aspect ranking, Semantic approach, Sentiment analysis. I. INTRODUCTION In today's world most of the people go for online services like purchasing any product or booking hotels, travels etc. But before going for any purchase for product or any services customer/ user wants to go for various reviews for same product/ services given by the other customers/users previously. As number of users for e-commerce websites are increased day by day so as increase in reviews written by them is huge. It is not possible for customers/users to get exact information as per their requirements from huge amount of reviews. Information gain from all reviews is very useful for customers/users and manufacturer so that they will get to know about pros and cons of product with respect to their aspects/features. Thus mining this review data and knowing about the customer/users opinions and classify them is an important task. Sentiment analysis is a task of natural language processing that deals with opinion mining for text with respect to topic. Using aspect ranking information customers/users can pay more attention to the aspect which are most liked by others, and manufacturer can also pay attention to aspect with low ranking which help them to take more accurate decision about product buying and improvement in product aspect respectively. It is not an easy task to know about individual feature/aspect from huge amount review data, so knowing about aspect importance from customer/user point of view automatically is an important task. Although document level or sentence level sentiment analysis will classify reviews as positive or negative and get fails to know about customer/users likes and dislikes about any particulars. Having positive review and negative review doesn't mean that opinion holder like or dislike all features/aspects about particulars respectively. Motivated from above observation an aspect based opinion mining system is proposed. |
| 13 | @article{Shehu2022AssessmentOH,  title={Assessment of Hotel Guest Satisfaction Using Sentiment Analysis: A Case Study of Maldives Hotels},  author={Hauwa’u Uraifa Shehu and Anandina Kana and Fatima Sulaiman},  journal={SLU Journal of Science and Technology},  year={2022}, | **Assessment of Hotel Guest Satisfaction Using Sentiment Analysis: A Case Study of Maldives Hotels**  The result shows that, more than 80% of the comments are positive, implying that the vast majority of these hotels' customers are pleased with their accommodations and services.  Nowadays online reviews by hotel customers greatly influence business as potential new consumers seek unbiased information while making their hotel booking decisions. Hotel management and marketers are more aware of the impact of online reviews on financial performance. This awareness arises from the universal consensus that internet consumer reviews have a significant impact on hotel business performance. Customers use social media to share information about products and services, and online reviews have a substantial influence on customer purchasing decisions. The goal of this study is to provide formative assessment feedback on Maldives hotels using word cloud technique. This include investigating the hotel that is mostly used by guests, finding out the percentage of positive and negative comments made about the hotel, and also assessing the type of comments the majority of customers give about the services rendered to them. Data from 104 distinct Maldives hotels were utilized in this case study to provide quick visual insight using a word cloud approach with R programming language. The result shows that, more than 80% of the comments are positive, implying that the vast majority of these hotels' customers are pleased with their accommodations and services. |
| 14 | @article{Williams2019DesignAI,  title={Design and Implementation of Reservation Management System - Case Study: Grand Ville Hotels},  author={Kehinde Oladipo Williams and Ajinaja Micheal},  journal={Journal of Information Engineering and Applications},  year={2019}, | **Design and Implementation of Reservation Management System - Case Study: Grand Ville Hotels**  This paper shows how the noted complicated human task can be solved by using a database Management System together with scripting and programming languages like Html and PHP respectively as the key tools in the development of a hotel reservation System.  The management and booking of Rooms in hotels is a tedious and complicated task especially if it is done manually. Keeping track of large customers and all their details requires an inordinate space for file cabinets, not to mention the time the hotel administrator would spend going back and forth to file cabinets so as to look up each customer’s information. This is why a good hotel reservation system is needed to make this task as easy as possible. This paper shows how the noted complicated human task can be solved by using a database Management System together with scripting and programming languages like Html and PHP respectively as the key tools in the development of a hotel reservation System. The system was developed using the object-oriented software development approach which includes the use of object-oriented analysis, object- oriented design and object-oriented programming. This was done so that the developed software can be maintainable, reliable and scalable. |
| 15 | @inproceedings{Molinillo2016HotelAT,  title={Hotel Assessment through Social Media: The case of TripAdvisor La valoraci{\'o}n de los hoteles en los medios sociales: El caso de TripAdvisor},  author={Sebasti{\'a}n Molinillo and Jos{\'e} Luis Xim{\'e}nez-de-Sandoval and Antonio Fern{\'a}ndez-Morales and Andres Coca-Stefaniak},  year={2016}, | **Hotel Assessment through Social Media: The case of TripAdvisor La valoración de los hoteles en los medios sociales: El caso de TripAdvisor**  Hotel booking decisions are increasingly influenced by consumer feedback available on social media sites. Using data submitted by customers on TripAdvisor, this study analyzes the customer satisfaction ratings posted for 2,211 hotels. The study provides four key contributions to our knowledge on this subject. Firstly, a comparative analysis was conducted of customer ratings for hotels located on the Spanish coast and Portugal’s southern coast. Secondly, significant differences were found in the number of comments and average online review ratings, which showed a correlation to the tourism destinations’ geographical locations. Thirdly, the study found that customers tend to rate their hotel experiences positively. Fourthly, the customers’ overall level of satisfaction with a hotel tends to increase proportionately based on the number of customer feedback comments posted for that hotel. Consequently, one of this study’s findings is that hotels should encourage their customers to post comments on customer review websites to balance out any negative feedback. |
| 16 | @article{Arohunsoro2020EvaluationOT,  title={Evaluation of the Influence of E-marketing on Patronage Behaviour and Its Attendant Challenges: A Case Study of Selected Hotels in Ado–Ekiti, Ekiti State, Nigeria},  author={Segun Joseph Arohunsoro and O. O. Ojo and A. A. Shittu},  journal={Journal of Scientific Research and Reports},  year={2020},  pages={72-79}, | **Evaluation of the Influence of E-marketing on Patronage Behaviour and Its Attendant Challenges: A Case Study of Selected Hotels in Ado–Ekiti, Ekiti State, Nigeria**  This paper evaluated the influence of E-marketing on patronage behaviour and its attendant challenges in some selected hotels. This study employed a descriptive survey research design. This research work employed the use of structured questionnaire that is closed ended. A total of 22 copies of questionnaire were administered in the research work to elicit information from the respondent. Purposive sampling was used to select 11 three star hotels in the study area. 2 Management staff was selected using purposive sampling technique from each of the 11 selected 3 star hotels in the study area. The data collected were analysed through the use of descriptive method of data analysis such as tables, percentage and charts. The study revealed that EOriginal Research Article Arohunsoro et al.; JSRR, 26(1): 72-79, 2020; Article no.JSRR.53405 73 marketing saves time and increases patronage level, E-marketing enhances patronage increase, quality website improves customer patronage and online advertising improves patronage level. However, it was also revealed that some of the challenges facing E-marketing includes no centrally acceptable payment method, Unstructured Presentation of Information, E-Marketing advertisements are poor, E-Marketing internet domain are weak as well as poor sensitization frustrates E-marketing. The study concluded that E-marketing is an important strategy to capture patrons who are use to online booking system and enhancement of convenient booking for online patrons who are relatively far from the locations of the hotels. However, the study recommended that the use of E-Marketing among establishments especially in hotels should be encouraged in order to capture people from far locations who need reservations at their own convenient time. |
| 17 | @inproceedings{Quintano2016HospitalityID,  title={Hospitality Industry Decision Analysis in Malta: Application of a Hybrid-Balanced Scorecard},  author={Alfred Quintano},  year={2016},  url={https://api.semanticscholar.org/CorpusID:168527467}  } | **Hospitality Industry Decision Analysis in Malta: Application of a Hybrid-Balanced Scorecard**  The primary elements of the travel experience are transportation and accommodation. Travellers choose between various suppliers with the final choice being determined by an evaluation of a number of criteria. In the case of hotel accommodation, the choice is based on a multi-criteria assessment of a hotel’s perceived attributes.  The aim of the thesis is to determine and analyse the weighting and ranking attributed by potential customers to a number of criteria used in selecting a 5-star hotel framed in the four perspectives of the balanced scorecard and confront with those made by hotel managers. The customer decision criteria identified in this study mirror key result areas used in hospitality management performance measurement tools such as the balanced scorecard.  The 5-star hotel industry in Malta has performed exceptionally well in recent years, in a dramatically changed scenario in which the source of bookings for Malta visits changed from 70% package tours in 2006 to 45% in 2014, with 55% individual bookings. This was driven by the introduction of low cost carriers. Disintermediation necessitated a customer-centric approach by hotel managers entailing their full awareness of what the customer expects from a 5-Star hotel. This research study set out to confirm or otherwise reject this hypothesis by a survey of potential 5-star hotel customers complemented by a survey targeting managers in 5-star hotels in Malta. Strong correlation between survey results is noted and both sets of findings are subjected to sensitivity analysis, and practical implications are drawn. |
| 18 | @article{Bhimasta2019WhatCT,  title={What causes the adoption failure of service robots?: a case of Henn-na hotel in japan},  author={Raden Agoeng Bhimasta and Pei-Yi (Patricia) Kuo},  journal={Adjunct Proceedings of the 2019 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers},  year={2019}, | **What causes the adoption failure of service robots?: a case of Henn-na hotel in japan**  Six design implications are come up for future researchers and designers to re-think about the interaction process between human and robots, as well as how service robots could be better designed and used in hospitality settings to fulfill guest needs.  With the emergence of AI-powered products and services, the hospitality industry has started to adopt service robots to transform the guest experience. Despite this growing interest, Henn-na Hotel, the world's first robot hotel, recently announced to abandon half of its robots. This study aims to unveil factors leading to the adoption failure of service robots in the hospitality context using Henn-na Hotel as the case study. Through mining online guest reviews from four different leading online booking sites, we conducted thematic content analysis on a total of 250 negative online reviews. A total of six themes emerged from our data (e.g., human intervention, usefulness, embodiment), illustrating various factors resulting in the adoption failure. Based on this, we come up with six design implications for future researchers and designers to re-think about the interaction process between human and robots, as well as how service robots could be better designed and used in hospitality settings to fulfill guest needs. |
| 19 | @article{Theocharidis2020AnAT,  title={An Approach towards Investigating Factors Affecting Intention to Book a Hotel Room through Social Media},  author={Anastasios-Ioannis T. Theocharidis and Maria D. Argyropoulou and George I. Karavasilis and Vasiliki G. Vrana and Evangelos Kehris},  journal={Sustainability},  year={2020}, | **An Approach towards Investigating Factors Affecting Intention to Book a Hotel Room through Social Media**  The study identified four factors that directly or indirectly influence consumers’ intention to book hotel rooms through social media, and identified permission-based acceptance as a core role in the model.  Today, social media have become a major trend, and consumers are engaging more and more in the social media platforms used by hotels. This does not mean that they book a hotel room via social media, as the booking process is a complex one. The paper investigates the factors that affect users’ intention to book a hotel room using social media applications. The recent enforcement of General Data Protection Regulation (GDPR) in the European Union and California Consumer Privacy Act (CCPA) in California may have an impact on consumers’ behavior. To investigate this further, the study integrates into a model the following constructs: Perceived ease of use, perceived usefulness, trust in online hoteliers, social media use, and permission-based-acceptance. The survey was conducted on Greek users of social media. An online questionnaire was used for data collection. The conceptual model was tested using Structural Equation Modeling (SEM) analysis. The study identified four factors that directly or indirectly influence consumers’ intention to book hotel rooms through social media. Usefulness directly affects intention to book online. Permission-based acceptance plays a core role in the model. Both constructs trust in online hoteliers and social media use, and have a direct positive effect on permission-based acceptance, whereas permission-based acceptance has a direct positive influence on intention to book through social media. The validated model stretches the need for hoteliers to obtain permission from consumers in carrying out their marketing activities. It is important for hotel owners, managers, and social media specialists to keep consumers in mind, offer them useful information and services, and have a trustworthy behavior in order to boost bookings through social media. |
| 20 | @article{Hamdan2023CustomerLP,  title={Customer Loyalty Prediction for Hotel Industry Using Machine Learning Approach},  author={Iskandar Zul Putera Hamdan and Muhaini Othman and Yana Mazwin Mohmad Hassim and Suziyanti Marjudi and Munirah Mohd Yusof},  journal={JOIV : International Journal on Informatics Visualization},  year={2023}, | **Customer Loyalty Prediction for Hotel Industry Using Machine Learning Approach**  Today, machine learning is utilized in several industries, including tourism, hospitality, and the hotel industry. This project uses machine learning approaches such as classification to predict hotel customers’ loyalty and develop viable strategies for managing and structuring customer relationships. The research is conducted using the CRISP-DM technique, and the three chosen classification algorithms are random forest, logistic regression, and decision tree. This study investigated key characteristics of merchants’ customers’ behavior, interest, and preference using a real-world case study with a hotel booking dataset from the C3 Rewards and C3 Merchant systems. Following a comprehensive investigation of prospective preferences in the pre-processing phase, the best machine learning algorithms are identified and assessed for forecasting customer loyalty in the hotel business. The study's outcome was recorded and examined further before hotel operators utilized it as a reference. The chosen algorithms are developed utilizing Python programming language, and the analysis result is evaluated using the Confusion Matrix, specifically in terms of precision, recall, and F1-score. At the end of the experiment, the accuracy values generated by the logistic regression, decision tree, and random forest algorithms were 57.83%, 71.44%, and 69.91%, respectively. To overcome the limits of this study method, additional datasets or upgraded algorithms might be utilized better to understand each algorithm's benefits and limitations and achieve further advancement. |
| 21 | @article{Chang2021ForecastingHR,  title={Forecasting Hotel Room Occupancy Using Long Short-Term Memory Networks with Sentiment Analysis and Scores of Customer Online Reviews},  author={Yu-Ming Chang and Chieh-Huang Chen and Jung-Pin Lai and Yingli Lin and Ping-Feng Pai},  journal={Applied Sciences},  year={2021}, | **Forecasting Hotel Room Occupancy Using Long Short-Term Memory Networks with Sentiment Analysis and Scores of Customer Online Reviews**  This study reveals that using long short-term memory networks with sentiment analysis of review text and customers’ rating scores is a feasible and promising alternative in forecasting hotel room occupancy.  For hotel management, occupancy is a crucial indicator. Online reviews from customers have gradually become the main reference for customers to evaluate accommodation choices. Thus, this study employed online customer rating scores and review text provided by booking systems to forecast monthly hotel occupancy using long short-term memory networks (LSTMs). Online customer reviews of hotels in Taiwan in various languages were gathered, and Google’s natural language application programming interface was used to convert online customer reviews into sentiment scores. Five other forecasting models—back propagation neural networks (BPNN), general regression neural networks (GRNN), least square support vector regression (LSSVR), random forest (RF), and gaussian process regression (GPR)—were employed to predict hotel occupancy using the same datasets. The numerical data indicated that the long short-term memory network model outperformed the other five models in terms of forecasting accuracy. Integrating hotel online customer review sentiment scores and customer rating scores can lead to more accurate results than using unique scores individually. The novelty and applicability of this study is the application of deep learning techniques in forecasting room occupancy rates in multilingual comment scenarios with data gathered from review text and customers’ rating scores. This study reveals that using long short-term memory networks with sentiment analysis of review text and customers’ rating scores is a feasible and promising alternative in forecasting hotel room occupancy. |
| 22 | @inproceedings{Mostafa2020MachineLS,  title={Machine Learning-Based Sentiment Analysis for Analyzing the Travelers Reviews on Egyptian Hotels},  author={Lamiaa Mostafa},  booktitle={International Conferences on Artificial Intelligence and Computer Vision},  year={2020}, | **Machine Learning-Based Sentiment Analysis for Analyzing the Travelers Reviews on Egyptian Hotels**  This research aims to propose a Traveler Review Sentiment Classifier that will analyze the traveler’s reviews on Egyptian Hotels and provide a classification of each sentiment based on hotel features.  Tourism affects the economy of any country; actually, it is the foundation of the country on the economic side. Egyptian Government is giving a big concern in developing the tourism sector. Hotel companies are using E-commerce technology for online booking and online reviewing. Travelers choose hotels based on their prices, facilities and other traveler’s review. Sentiment analysis is a very important topic that can be used to analyze the opinion of online users. Different websites are classifying the traveler reviews such as Tripadvisor, Expedia. The research aims to propose a Traveler Review Sentiment Classifier that will analyze the traveler’s reviews on Egyptian Hotels and provide a classification of each sentiment based on hotel features. Travelers Sentiment about five hotels located in Aswan in Egypt with a total of 11458 reviews were collected and analyzed. Sentiment model uses three classification techniques: Support Vector Machine, Naive Bayes and Decision Tree. Results had shown that Naive Bayes has the highest accuracy level. |
| 23 | @article{Chen2022ExploringBP,  title={Exploring Bidirectional Performance of Hotel Attributes through Online Reviews Based on Sentiment Analysis and Kano-IPA Model},  author={Yanyan Chen and Yumei Zhong and Sumin Yu and Yan Xiao and Sining Chen},  journal={Applied Sciences},  year={2022}, | **Exploring Bidirectional Performance of Hotel Attributes through Online Reviews Based on Sentiment Analysis and Kano-IPA Model**  A new sentiment lexicon for hospitality domain is built from numerous online reviews using the PolarityRank algorithm to convert textual reviews into sentiment scores, and the Kano-IPA model is applied to explain customers’ rating behaviors and prioritize attributes for improvement.  As people increasingly make hotel booking decisions relying on online reviews, how to effectively improve customer ratings has become a major point for hotel managers. Online reviews serve as a promising data source to enhance service attributes in order to improve online bookings. This paper employs online customer ratings and textual reviews to explore the bidirectional performance (good performance in positive reviews and poor performance in negative reviews) of hotel attributes in terms of four hotel star ratings. Sentiment analysis and a combination of the Kano model and importance-performance analysis (IPA) are applied. Feature extraction and sentiment analysis techniques are used to analyze the bidirectional performance of hotel attributes in terms of four hotel star ratings from 1,090,341 online reviews of hotels in London collected from TripAdvisor.com (accessed on 4 January 2022). In particular, a new sentiment lexicon for hospitality domain is built from numerous online reviews using the PolarityRank algorithm to convert textual reviews into sentiment scores. The Kano-IPA model is applied to explain customers’ rating behaviors and prioritize attributes for improvement. The results provide determinants of high/low customer ratings to different star hotels and suggest that hotel attributes contributing to high/low customer ratings vary across hotel star ratings. In addition, this paper analyzed the Kano categories and priority rankings of six hotel attributes for each star rating of hotels to formulate improvement strategies. Theoretical and practical implications of these results are discussed in the end. |
| 24 | @article{Amin2021ExaminingTI,  title={Examining the impact of visual presentations and online reviews on hotel booking intentions},  author={Dawood Amin and Anuar Sb Mahomed and Yuhanis B Ab Aziz and Haslinda Hashim},  journal={Tourism and Hospitality Research},  year={2021},  volume={21},  pages={402 - 417}, | **Examining the impact of visual presentations and online reviews on hotel booking intentions**  The statistical analysis supports the notion that visual presentations and online reviews have a positive impact on perceived usefulness and perceived ease of use, however, online reviews do not have any significant influence on booking intention directly.  This study aims to examine the factors affecting the behavioural intentions toward online hotel booking. The study integrates visual presentations and online reviews with the technology acceptance model (TAM). Partial least squares structural equation modelling (PLS-SEM) was used to test the proposed hypotheses in this research. The results report that booking intentions are mainly determined by visual presentations and perceived usefulness. The statistical analysis supports the notion that visual presentations and online reviews have a positive impact on perceived usefulness and perceived ease of use. However, online reviews do not have any significant influence on booking intention directly. The study concludes that online consumers are more likely to book a hotel online if visual presentations and online reviews appear to be useful and easy to use. The findings contribute several implications for researchers and practitioners in the hospitality field. |
| 25 | @inproceedings{Kitcharoen2019TheEO,  title={The effect of e-word of mouth (E-WOM) on various factors influencing customers’ hotel booking intention},  author={Krisana Kitcharoen},  year={2019}, | **The effect of e-word of mouth (E-WOM) on various factors influencing customers’ hotel booking intention**  This research will help hotel investors, as well as online travel agency operators, to obtain a clearer understanding of guests’ needs and wants in order to offer a more desirable service.  Electronic word of mouth received by customers would lead to their hotel booking intention via smartphones both on online or mobile phone application such as Agoda or Booking.com. Travelers who read comments or reviews and made a hotel choice based on those comments were targeted for this study. The research aims to determine the effect of electronic word of mouth on factors influencing hotel booking intention via smartphones. The research hypotheses determine the effect electronic word of mouth attributed toward perceived behavioral control (PB), perceived benefits (PB), subjective norm (SN) and attitude (AT) and how they influence hotel booking intention via smartphones. The paper examines the difference between genders and the purposed model was empirically tested using data collected from an online channel with total respondent of 400 who live in Bangkok. Simple linear regression, multiple linear regression and independent sample T-Test were used for data analysis . This means that travelers want to be known about both complaints and compliments in the online comments. However, this does not mean they intend to reserve a hotel room based on both opinions rather travelers would be approached to reserve a hotel room based on comments. Moreover, this research will help hotel investors, as well as online travel agency operators, to obtain a clearer understanding of guests’ needs and wants in order to offer a more desirable service. |
| 26 | @article{Antnio2019PredictiveMF,  title={Predictive models for hotel booking cancellation: a semi-automated analysis of the literature},  author={Nuno Ant{\'o}nio and Ana de Almeida and Lu{\'i}s Nunes},  journal={Tourism \& Management Studies},  year={2019}, | **Predictive models for hotel booking cancellation: a semi-automated analysis of the literature**  The methodology presented not only diminishes human bias, but also enhances the fact that data visualization and text mining techniques facilitate abstraction, expedite analysis and contribute to the improvement of reviews.  In reservation-based industries, accurate booking cancellation forecast is of foremost importance to estimate demand. By combining data science tools and capabilities with human judgement and interpretation it is possible to demonstrate how the semiautomatic analysis of the literature can contribute to synthetize research findings and identify research topics on the subject of booking cancellation forecasting. The data used was obtained through keyword search in Scopus and Web of Science databases. The methodology presented not only diminishes human bias, but also enhances the fact that data visualization and text mining techniques facilitate abstraction, expedite analysis and contribute to the improvement of reviews. Results show that albeit the importance of bookings’ cancellation forecast, further research on the subject is still needed. By detailing the full experimental procedure of the analysis, this work aims to encourage other authors to conduct automated literature analysis as a means to understand current research in their working fields. |
| 27 | @inproceedings{Yani2020PengujianAR,  title={Pengujian Aplikasi Reservasi Hotel di LeGreen Hotel \& Suite dengan Metode Black Box Testing Boundary Value Analysis},  author={Achmad Yani and Deny Setiawan and Novrizal Egi Sofian and Rizky Subagja and Teti Desyani},  year={2020}, | **Pengujian Aplikasi Reservasi Hotel di LeGreen Hotel & Suite dengan Metode Black Box Testing Boundary Value Analysis**  Analysis of the results of the application of methods to solve the problem shows that the level of application that runs reaches 70%, able to run and process employee data, rooms, visitors and payments used for hotel reservations.  In this test we will use software that has been made, namely the desktop-based LeGreen Hotel Reservation Application. In testing this hotel room reservation application, the writer uses the black box testing method. Black Box Testing is suitable in testing hotel booking applications because this test aims to ensure the functionality of the LeGreen Hotel Reservation application. This study has several stages that must be done, including the identification of experimental problems, input data samples into the process system, then testing to evaluate the output and finally the documentation of test results. Based on the analysis of the results of the application of methods to solve the problem shows that the level of application that runs reaches 70%, able to run and process employee data, rooms, visitors and payments used for hotel reservations. In the admin login form of 30%, only 20% succeeded, and in the Print Report Form, repairs are needed in order to improve the quality of the application in processing report print data as it functions. |
| 28 | @inproceedings{Bachtiar2020TextMF,  title={Text Mining for Aspect Based Sentiment Analysis on Customer Review : A Case Study in the Hotel Industry},  author={Fitra Abdurrachman Bachtiar and Wirdhayanti Paulina and Alfi Nur Rusydi},  booktitle={International Workshop on Innovations in Information and Communication Science and Technology},  year={2020}, | **Text Mining for Aspect Based Sentiment Analysis on Customer Review : A Case Study in the Hotel Industry**  This research yields findings in the form of customer satisfaction analysis of the five aspects where food aspects have urgency to be addressed and corrected immediately and proves the effectiveness of the SVM method from Naïve Bayes.  The development of the role of the OTA (Online Travel Agent) site has become one of the E-WOM (Electronic Word of Mouth) media in addition to its main function as a platform for ticket reservations to encourage stakeholders in the hotel industry to utilize E-WOM for business continuity. One of the guest houses in Malang realized the importance of E-WOM because 90 percent of the booking process originated from the OTA website. However, the process of processing customer reviews only focuses on physical reviews, namely Guest Reviews. Meanwhile, information from online sources can have a more significant impact on E-WOM. One of the techniques of text mining is sentiment analysis which can be used to process and group text reviews. Sentiment analysis can be done to determine the sentiment of opinions on customer reviews to determine customer satisfaction with guest house services that aim to produce a positive E-WOM. Sentiment analysis is carried out at the aspect level using aspects of location, room, food, price, and service. The text of the review used in Indonesian originates from the sites Agoda.com, Expedia, Pegi-Pegi, Booking.Com, TripAdvisor and has a timeline from 2012 to 2019. This research yields findings in the form of customer satisfaction analysis of the five aspects where food aspects have urgency to be addressed and corrected immediately. Evaluation of the classification results also proves the effectiveness of the SVM method from Naïve Bayes |
| 29 | @article{Khamphakdee2023AnED,  title={An Efficient Deep Learning for Thai Sentiment Analysis},  author={Nattawat Khamphakdee and Pusadee Seresangtakul},  journal={Data},  year={2023},  volume={8},  pages={90}, | **An Efficient Deep Learning for Thai Sentiment Analysis**  This research provides guidance for setting suitable hyperparameter values to improve the accuracy of sentiment classification for the Thai language in the hotel domain and compared the performance of nine DL models with different numbers of layers to evaluate their performance in polarity classification.  The number of reviews from customers on travel websites and platforms is quickly increasing. They provide people with the ability to write reviews about their experience with respect to service quality, location, room, and cleanliness, thereby helping others before booking hotels. Many people fail to consider hotel bookings because the numerous reviews take a long time to read, and many are in a non-native language. Thus, hotel businesses need an efficient process to analyze and categorize the polarity of reviews as positive, negative, or neutral. In particular, low-resource languages such as Thai have greater limitations in terms of resources to classify sentiment polarity. In this paper, a sentiment analysis method is proposed for Thai sentiment classification in the hotel domain. Firstly, the Word2Vec technique (the continuous bag-of-words (CBOW) and skip-gram approaches) was applied to create word embeddings of different vector dimensions. Secondly, each word embedding model was combined with deep learning (DL) models to observe the impact of each word vector dimension result. We compared the performance of nine DL models (CNN, LSTM, Bi-LSTM, GRU, Bi-GRU, CNN-LSTM, CNN-BiLSTM, CNN-GRU, and CNN-BiGRU) with different numbers of layers to evaluate their performance in polarity classification. The dataset was classified using the FastText and BERT pre-trained models to carry out the sentiment polarity classification. Finally, our experimental results show that the WangchanBERTa model slightly improved the accuracy, producing a value of 0.9225, and the skip-gram and CNN model combination outperformed other DL models, reaching an accuracy of 0.9170. From the experiments, we found that the word vector dimensions, hyperparameter values, and the number of layers of the DL models affected the performance of sentiment classification. Our research provides guidance for setting suitable hyperparameter values to improve the accuracy of sentiment classification for the Thai language in the hotel domain. |
| 30 | @article{Jayanto2022AspectbasedSA,  title={Aspect-based sentiment analysis for hotel reviews using an improved model of long short-term memory},  author={Rahmat Jayanto and Retno Kusumaningrum and Adi Wibowo},  journal={International Journal of Advances in Intelligent Informatics},  year={2022}, | **Aspect-based sentiment analysis for hotel reviews using an improved model of long short-term memory**  A method to summarise reviews based on multiple aspects, including food, room, service, and location, using long short-term memory (LSTM), together with hidden layers and automation of the optimal number of hidden neurons is proposed.  Advances in information technology have given rise to online hotel reservation options. The user review feature is an important factor during the online booking of hotels. Generally, most online hotel booking service providers provide review and rating features for assessing hotels. However, not all service providers provide rating features or recap reviews for every aspect of the hotel services offered. Therefore, we propose a method to summarise reviews based on multiple aspects, including food, room, service, and location. This method uses long short-term memory (LSTM), together with hidden layers and automation of the optimal number of hidden neurons. The F1-measure value of 75.28% for the best model was based on the fact that (i) the size of the first hidden layer is 1,200 neurons with the tanh activation function, and (ii) the size of the second hidden layer is 600 neurons with the ReLU activation function. The proposed model outperforms the baseline model (also known as standard LSTM) by 10.16%. It is anticipated that the model developed through this study can be accessed by users of online hotel booking services to acquire a review recap on more specific aspects of services offered by hotels |
| 31 | @article{Tuna2021Otellere,  title={Otellere İlişkin Çevrimiçi Geribildirimlerin Makine {\"O}ğrenmesi Y{\"o}ntemleriyle Duygu Analizi (Sentiment Analysis of Online Feedbacks on Hotels via Machine Learning Methods)},  author={Murat Tuna and Oğuz Kaynar and Mehmet Ş{\"u}kr{\"u} Akdoğan},  journal={Journal of Business Research - Turk},  year={2021}, | **Otellere İlişkin Çevrimiçi Geribildirimlerin Makine Öğrenmesi Yöntemleriyle Duygu Analizi (Sentiment Analysis of Online Feedbacks on Hotels via Machine Learning Methods)**  The model applied in the study can be used as a tool for hotel managers to make fast, consistent and cost-effective marketing decisions, and that added value can be produced for hotel businesses.  Purpose – Today, one of the ways to quickly understand the consumer is to analyse their feedbacks about the products or services of the business quickly and accurately. In this sense, understanding the sentiment in the feedback with computer-based techniques is one of the ways to be followed. Overlapping level between the sentiments hidden in the feedbacks of hotel customers and their ratings regarding the service they received from the hotel have been examined in this study. Design/methodology/approach – The method used in the research is machine learning-based sentiment analysis. The data set used consists of customer comments on 164 hotels in Antalya, extracted from an online booking site via web scraping method. Compatibility of the comments in the data set with the ratings added to the comments by the customers was tested with a binary sentiment classification via seven different machine learning algorithms including Logistic Regression (LR), Random Forest (RF), CART Decision Tree (CART), K-Nearest Neighbors (KNN), Support Vector Machines (SVM), Lineer Discriminant Analysis (LDA), Naive Bayes (NB). Findings – While the average classification success of the algorithms used in supervised sentiment classification was calculated as 81.3%, it was understood that the algorithm produced the most successful results among them was Logistic Regression (87.9%). The methods used in this study were lined up as LR (%87,99), SVM (%86,84), LDA (%86,24), NB (%82,66), RF (%82,00), CART (%76,92) and KNN (%63,91). Discussion – It has been suggested that the model applied in the study, in parallel with the literature, can be used as a tool for hotel managers to make fast, consistent and cost-effective marketing decisions, and that added value can be produced for hotel businesses. It is thought that the study will provide support to both the stakeholders of the accommodation businesses and the researchers who will work on this subject. Moreover, satisfaction with hotel services located in Antalya province instead of international or global tourism satisfaction were investigated in the study. This study can be extended with similar studies for both different minimal locations and larger regions in Turkey. In future studies, it will be possible to realize multilingual applications by using different language libraries. In addition, it is foreseen that the textual expressions can be successfully and quickly resolved in terms of accommodation businesses, as well as cost, time and labour savings. |
| 32 | @article{Emam2021FactorsII,  title={Factors Influencing Intentions in Hotel Booking Through Online Travel Intermediaries Applications},  author={Hany Essam El-Din Mohamned Emam and Fatma Mohammed Abdelaal},  journal={Journal of Association of Arab Universities for Tourism and Hospitality},  year={2021}, | **Factors Influencing Intentions in Hotel Booking Through Online Travel Intermediaries Applications**  The results indicate that the ease of use, price, promotion, perceived privacy/security, and online reviews of online travel intermediaries are directly related to the intentions of booking hotels online.  (JAAUTH) Vol. 21, No. 3, (December 2021), PP.101-134. The tremendous development of technology and mobile devices at present is making a significant influence on the hotels sector, especially in online hotel reservations via new online travel intermediaries applications like (Booking and Trivago applications). These applications have a prominent role in the hotel sector. Little researches has been done about customers’ perceptions of the use of booking broker applications. This study examined how some factors related to online travel intermediaries tend to influence the intentions of booking hotels. Therefore, customer questionnaires were distributed electronically due to the Coronavirus pandemic. The survey has six variables, i.e. “trust, ease of use, price and promotion, perceived privacy/security, online reviews, hotel booking intention.” Kruskal-Wallis Tests, Mann-Whitney U test and confirmatory factor analysis (CFA) were used to analyze 204 customers who used online travel intermediaries before booking in five-star hotels in Cairo. The results indicate that the ease of use, price, promotion, perceived privacy/security, and online reviews of online travel intermediaries are directly related to the intentions of booking hotels online. Price, promotion and reviews are considered the key factors related to the use of travel intermediaries and because of the customers' passion for special prices as well as to explore the rating of their hotels before booking through this application. Thus, hotels can achieve a higher level of service quality to increase their rating through that application to attract more customers. |
| 33 | @inproceedings{Augustine2020TheEO,  title={The Effects of Perceived Price, Website Trust and Online Reviews on Online Hotel Booking Intention in Kuala Lumpur},  author={Adlina Amrisha Augustine},  year={2020}, | **The Effects of Perceived Price, Website Trust and Online Reviews on Online Hotel Booking Intention in Kuala Lumpur**  The findings of this research show that website trust has the highest influence when consumers make an online hotel booking intention and the lowest concern when it comes to online hotelBooking intention is perceived price.  This research study is conducted to determine the factors that effects consumers online hotel booking intention and their usage. The objective of this study is to find out the three main factors which is the perceived price, website trust and online reviews and its effect on consumers when they make an online hotel booking and how they use online bookings to make an online booking for hotels. The 2 theoretical frameworks used in this research is the consumers’ purchase intention model and the technology acceptances model. This research is conducted in a quantitative method approach and was conducted in Kuala Lumpur with a sample size of 384 respondents. The questionnaire is developed by using the 5-point Likert scale to measure the influence of the independent variables towards the dependent variable. The questionnaires were distributed using the simple random sampling method which is easy and convenient. This research shows that the three factors; perceived price, website trust and online reviews do have a significant relationship with consumers booking intention and all the 4-hypothesis tested in this study is accepted and proven to be significant. The findings of this research show that website trust has the highest influence when consumers make an online hotel booking intention and the lowest concern when it comes to online hotel booking intention is perceived price. The analysis is conducted by using IBM SPSS Version 24 and by the means of ANOVA test and the Pearson Correlation test. The analysis on the relationship between the independent variables of perceived price, website trust and online reviews with the dependent variable of online hotel booking intention and the analysis of online hotel booking intention and online hotel booking usage, has shown that all the independent variable affects consumers booking intention. |
| 34 | @inproceedings{Pitchayadejanant2019DeterminantsOE,  title={Determinants of E-service Quality Towards Continuing Using Mobile Application for Hotel Reservation: Case of Agoda Application},  author={Krittipat Pitchayadejanant and Kritta-orn Chewwasung and Parinya Nakpathom and Kritiya Srikasem and Manatchanan Lekmeechai and Chanitta Chaiyawet and Sirintip Suriwong and Chen Wei Tso},  year={2019}, | **Determinants of E-service Quality Towards Continuing Using Mobile Application for Hotel Reservation: Case of Agoda Application**  The result shows information quality and responsiveness are significantly influent the continuing application usage and can assist the online travel agency to reconsider their website or invented mobile application to support their customers for reserving hotel.  Agoda application for booking online is popular in Thailand and dramatically increased in every year because the life style of tourists is changed due to technology adoption. The determinants to find out the effect between electronic service (e-service) quality and continuing usage help the online travel agents to consider the application features. As a consequnce, this research aims to find out the determinants of e-service quality that significantly affect customers’ continuing application usage. E-service quality determinants consist of 5 dimensions: ease of use, application design, responsiveness, information quality and assurance. The respondents in this study are tourists who come to travel to Bangsaen beach and use Agoda application for hotel reservation in this travel. With this study, 400 respondents filled in the questionnaire during March and April 2019. The statistic techniques to analyze for achieving the research objective are exploratory factor analysis (EFA) and structural equation model (SEM). The result shows information quality and responsiveness are significantly influent the continuing application usage. The strongest influence on continuing application usage is information quality and responsiveness, respectively. The finding can assist the online travel agency to reconsider their website or invented mobile application to support their customers for reserving hotel. According to managerial point of view, the tourists are looking for the application that updates information regularly, has precise and clear information. Furthermore, the quick response on customers’ feedback and their request to provide the necessary information is essential for their continuing application usage. |
| 35 | @article{Chalupa2020UsingTA,  title={Using Technology and Customer Behaviour Characteristics to Improve Hotel Sales Performance},  author={{\vS}těp{\'a}n Chalupa and Martin Petř{\'i}{\vc}ek},  journal={TEM Journal},  year={2020}, | **Using Technology and Customer Behaviour Characteristics to Improve Hotel Sales Performance**  Analysis of customer behaviour with a focus on the use of modern technologies shows that the selected hotel is not following basic revenue management principles, which can be a reason for the year-to-year decrease in direct online sales and overall poor performance.  Booking window is one of the critical characteristics of customer behaviour that can influence hotel sales performance. Previous studies were focused mainly on the importance of booking window reporting in revenue management with lack of evaluation. This paper focuses on the evaluation of revenue management activities by analysis of customer behaviour with a focus on the use of modern technologies (Booking Engine, Channel Manager). Results show that the selected hotel is not following basic revenue management principles, which can be a reason for the year-to-year decrease in direct online sales and overall poor performance. |
| 36 | @article{Seal2019GuestRT,  title={Guest Retention Through Automation},  author={Partho Pratim Seal},  journal={Advances in Hospitality, Tourism, and the Services Industry},  year={2019}, | **Guest Retention Through Automation**  The research is to study about how various hotel chains are adopting new technology and incorporating it in their establishment to determine the acceptance of new trends by the hotel chains.  The technology development in hospitality is continuing at a relentless pace which is challenging for the hospitality professional for both present and the future generations. The hotel front office is moving towards automation with less human interface. Reservations are mostly being made with help of booking engines and guest interaction with hotels are by apps and chatbots. Artificial intelligence (AI) also occupies a major role to facilitate and enhance guest experience. The trends now include use of augmented reality, predictive analysis, beacons, robotics, block chain technology, and biophilic designs in the hotel. The research is to study about how various hotel chains are adopting new technology and incorporating it in their establishment. The research is based upon data collected from hotel websites and other secondary sources to determine the acceptance of new trends by the hotel chains. The result suggests that though some international hotel chains have started accepting the new trends, the major Indian chains specially are lacking behind.  Collapse |
| 37 | @article{Kurniawan2022IntegrationOT,  title={Integration of the Theory of Reasoned Action (TRA) on Hotel Room Repurchase Intention using Online Hotel Room Booking Applications},  author={Andi Sigit Kurniawan and Retno Widowati and Siti Dyah Handayani},  journal={Jurnal Manajemen Teori dan Terapan | Journal of Theory and Applied Management},  year={2022}, | **Integration of the Theory of Reasoned Action (TRA) on Hotel Room Repurchase Intention using Online Hotel Room Booking Applications**  This study shows that the use of theory of reasoned action to explain the customer satisfaction variable as a mediation can be done by predicting the repurchase intention of consumers in online hotel room booking applications.  Objective: The business-to-consumer (B2C) e-commerce or online shopping market is growing rapidly and has become one of the most exciting developments in e-commerce. The purpose of this study is to examine the effect of perceived ease of use, service quality, customer trust on the mediating role of customer satisfaction on perceived ease of use of online hotel room booking applications on repurchase intention. Design/Methods/Approach: The research sample size is 183 respondents who used the RedDoorz application at Indonesian hotel locations. Data are collected by distributing online questionnaires using a Likert scale point 1 to 5. The data analysis technique is carried out using the Structural Equation Modeling (SEM) method. Findings: The results of this study indicate that customer satisfaction as a mediator has a positive but not significant effect on service quality. The results of this study also show that partial customer satisfaction has a significant influence on the repurchase intention. Originality: This study shows that the use of theory of reasoned action to explain the customer satisfaction variable as a mediation can be done by predicting the repurchase intention of consumers in online hotel room booking applications. Practical/Policy implication: The managerial implications of this research can be considered for business stakeholders to ensure service quality, user convenience, and customer trust so that customers feel satisfied and can order again. |
| 38 | @article{Sinaga2023SentimentAO,  title={Sentiment Analysis on Hotel Ratings Using Dynamic Convolution Neural Network},  author={Novendra Adisaputra Sinaga and Teddy Surya Gunawan and Wanayumini Wanayumini},  journal={International Conference on Information Science and Technology Innovation (ICoSTEC)},  year={2023}, | **Sentiment Analysis on Hotel Ratings Using Dynamic Convolution Neural Network**  Currently, the role of information technology is very important in everyday life because heavy workloads can become easier, communication time can be made shorter and data processing can be faster and more accurate. Hotel ranking sentiment analysis can provide important information for hotel owners and managers to improve the quality of service and guest experience. It can also be used by prospective guests to make the right booking decisions. Sentiment analysis can identify positive or negative feelings from guest reviews. There are 694,213 data reviews about hotels using English which are used as training data. The data was preprocessed and 76,905 vocabularies were obtained by utilizing Word2Vec. The training data was carried out at the encoding stage. The DCNN model is given a K-Max-Polling value of 2. The model is trained for 20 epochs. The model that has been formed is tested with 173,554 data and obtained an accuracy rate of 95%. |
| 39 | @article{Tsai2022AnalysisOA,  title={Analysis of Application Data Mining to Capture Consumer Review Data on Booking Websites},  author={Yao-Hsu Tsai and Chien-Cheng Lin and Minah Lee},  journal={Mobile Information Systems},  year={2022}, | **Analysis of Application Data Mining to Capture Consumer Review Data on Booking Websites**  This study adopted Python to perform a data mining analysis on visitor comments on Booking.com through the Python-based Scrapy framework and used user operation simulation through Selenium to analyze the performance of the spider program.  The rapid development of the Internet has led to the prevalence of big data analysis. Data mining is crucial to extracting potentially valuable information from big data and has therefore received considerable attention from researchers. Python is a common programming language used in data mining. Because of its rich database and robust capacity for scientific calculations, Python is considered an irreplaceable tool for data mining. This study adopted Python to perform a data mining analysis on visitor comments on Booking.com. The study was divided into several stages, namely, data source selection, data acquisition, data saving, data preprocessing, indexing of comments on Booking.com through the Python-based Scrapy framework, and user operation simulation through Selenium to analyze the performance of the spider program. Data mining can be used to identify useful information, which can serve as references for consumers to make purchase decisions. Extraction of data from booking sites through spider programs enables site administrators to attract more visitors. Analysis of extracted data also facilitates the elimination of misjudged comments and helps hotels improve their service quality, hardware, and personnel training. |
| 40 | @article{Patel2020SentimentAO,  title={Sentiment Analysis of Customers Opinions on Hotel Stays using Voted Classifier},  author={Anurag Patel and Bhavik Jain and Bhavya Chheda and Manya Gidwani and Shah},  journal={International Journal of Engineering Research and},  year={2020}, | **Sentiment Analysis of Customers Opinions on Hotel Stays using Voted Classifier**  The several algorithms that were used for sentiment analysis of hotel reviews, which minimizes the noisy data and classifies the reviews based on the model created, are elaborate.  A trip always revolves around your hotel and selection for the same depends on factors like, distance from the place of a visit, quality, staff, rooms, etc. One of the most reliable and trusted ways to get information about a hotel is the opinion of people who have already visited that particular hotel. Opinions on booking websites are in the form of reviews that are sometimes short and sometimes very lengthy. Sentiment analysis of the reviews helps in understanding the reviewer’s sentiment quickly. Therefore, accuracy of such a model should be as high as possible. The factors for selection are judged by the users on the basis of the sentiment being positive and negative which is well described in this paper. Further on, we elaborate the several algorithms that we used for sentiment analysis of hotel reviews, which minimizes the noisy data and classifies the reviews based on the model created. During the implementation, we trained six classifiers that gave an accuracy of around 88 - 94%. Further to reduce the margin of error and maintain highest possible accuracy along with it, the voted classifier was developed. The voted classifier included the top five best performing classifiers and gave an accuracy of 93.57%. |

I . Giới thiệu

Hotel Booking Analysis stands at the forefront of the evolving landscape where data science converges with the intricate dynamics of the hospitality industry. This compilation of research papers represents a comprehensive exploration into the multifaceted realm of hotel bookings, employing a diverse array of methodologies and predictive models to discern patterns, trends, and factors influencing various aspects of this critical domain.

At the core of this analysis is the predictive power of machine learning models such as logistic regression[3], k-Nearest Neighbor[31], and CatBoost, which are harnessed to forecast hotel booking cancellations. The researchers systematically compare these models, shedding light on their effectiveness, accuracy, and cost implications. Notably, the study identifies CatBoost as the most suitable model for predicting cancellations, owing to its effectiveness, high accuracy, and lower cost. This predictive capability becomes crucial for hotels as it forms the bedrock for revenue and resource management strategies.

The hospitality industry, particularly the hotel sector, has experienced significant transformation in recent years, driven by advancements in information and communication technologies. Among these advancements, the integration of artificial intelligence (AI) and machine learning (ML)[1] stands out as a key driver of change. This paper presents a critical review of the application of machine learning in the hotel industry, aiming to provide insights into its role and impact. Furthermore, the papers delve into the intricacies of price prediction in online booking systems, leveraging machine learning and sentiment analysis. The integration of clustering techniques, such as k-means, with advanced models like Gradient Boost and XGBoost, demonstrates a holistic approach to improving the prediction performance, particularly evident in experiments conducted with real Airbnb datasets.

In the context of decision-making processes, a novel algorithm combining aspect-based sentiment analysis and intuitionistic fuzzy-VIKOR is introduced to aid customers in choosing hotels based on online reviews. This approach showcases the significance of harnessing sentiment analysis and advanced models to enhance decision-making in the face of information overload.

The collection also delves into the realm of recommender systems within the hotel hospitality industry, exploring the potential synergy between large language models (LLMs) like ChatGPT and persuasive technologies. By integrating ChatGPT into recommender systems, researchers aim to provide context-aware recommendations based on user preferences, thereby enhancing user engagement, satisfaction, and conversion rates.

Addressing the broader context of online hotel booking platforms, the analysis extends to exploring the determinants of customer intention and usage. Factors such as website quality, online reviews, perceived benefits, and service quality are identified as significant predictors, emphasizing the need for hotels to focus on information quality, integrity, and customer reviews to manage risks and encourage usage.

The impact of mobile technology adoption on customers' intention to book hotel rooms via smartphones is also examined. The modified Technology Acceptance Model (m-TAM) is introduced, emphasizing the role of perceived enjoyment and perceived price value in influencing behavioral intentions toward mobile hotel booking.

Machine learning interpretable algorithms are applied to predict and mitigate the impact of booking cancellations on hotel revenues. The study showcases the effectiveness of Random Forest and Extra Tree Classifier [20]models in achieving high accuracy, precision, and recall ratios, offering hotel owners valuable insights for better predictions and strategic decision-making.

In addition to predictive analytics, the collection explores the field of data mining to analyze and predict the success rate of hotels. Rapid Miner is employed to process customer reservation data, providing insights into the level of success and enabling hotels to make informed decisions for better business strategies.

Furthermore, the research examines the potential segmentation of mobile application users in the hotel booking journey. By conducting in-depth interviews and questionnaires, researchers identify four user personas, shedding light on the varying motivations and actions of users at different stages of their hotel booking journey.

The analysis concludes with an exploration of how media richness and interactivity in hotel visualization impact users' trust, perceived value, and attitudes, thereby influencing booking intentions. The study introduces a 2x2 factorial design, highlighting the significance of enhanced visualization features in online travel agency applications.

In summary, this compilation of research papers provides a comprehensive overview of Hotel Booking Analysis, showcasing the diversity of approaches and methodologies employed to understand, predict, and optimize various facets of the hospitality industry. As the industry continues to evolve in the digital era, the insights derived from these studies serve as a valuable resource for hotel managers, online travel agencies, and technology suppliers striving to stay ahead in this dynamic and competitive landscape.

II. Nghiên cứu liên quan

The amalgamation of various research articles presented in this compilation offers a thorough exploration of the intricate landscape surrounding hotel booking analysis. These studies cover a spectrum of methodologies and perspectives, each contributing to the collective understanding of how data-driven insights can revolutionize the hotel industry. The overarching theme revolves around leveraging advanced analytics, machine learning, and emerging technologies to optimize revenue management, enhance customer satisfaction, and inform strategic decision-making within the hotel sector.

Today, machine learning is utilized in several industries, including tourism, hospitality, and the hotel industry. This project uses machine learning approaches such as classification to predict hotel customers’ loyalty and develop viable strategies for managing and structuring customer relationships. The research is conducted using the CRISP-DM technique, and the three chosen classification algorithms are random forest, logistic regression, and decision tree[20]. This study investigated key characteristics of merchants’ customers’ behavior, interest, and preference using a real-world case study with a hotel booking dataset from the C3 Rewards and C3 Merchant systems.[30]

The emergence of blockchain technology in hotel booking applications is another noteworthy theme. One study investigates the profiling of early adopters of blockchain-based hotel booking apps, shedding light on the demographic, psychographic, and service-related factors influencing their adoption. This emphasizes the industry's exploration of innovative technologies for more secure and transparent transactions.

Moreover, the research delves into the challenges associated with pricing in online booking systems. Clustering techniques, sentiment analysis, and machine learning models like Gradient Boost and XGBoost are applied to predict the most reasonable price for accommodation, addressing the common issue of setting prices that are lower than the perceived value.

The findings underscore the significant role of machine learning in enhancing various aspects of hotel operations, including demand and price forecasting, booking cancellation prediction, and overall efficiency. Machine learning algorithms, such as Random Forest and Extra Tree Classifier[2], have demonstrated high accuracy in predicting booking cancellations, offering valuable insights for hotel owners and managers to optimize their strategies and improve customer satisfaction.

In-depth explorations of customer behavior, influenced by factors like demographic and psychographic characteristics, contribute to a nuanced understanding of market segments. Additionally, the impact of the COVID-19[5] pandemic on the online hotel booking landscape is acknowledged, emphasizing the industry's adaptability to external disruptions.

The multifaceted nature of the research landscape in hotel booking analysis is further accentuated by the integration of factors like online reviews, perceived enjoyment, perceived value, and media richness. These factors play pivotal roles in shaping customer intentions and preferences, adding layers of complexity to the analysis.

In conclusion, the collective body of research exhibits the dynamic and evolving nature of hotel booking analysis. The industry's embrace of data-driven approaches, innovative technologies, and a deep understanding of customer behavior signifies a commitment to excellence and adaptability in an ever-changing marketplace. The intersection of advanced analytics, machine learning, and emerging technologies is shaping the future trajectory of the hotel industry, propelling it towards greater efficiency, customer-centricity, and resilience.

**HOTEL BOOKING ANALYSIS USING PYSPARK**

I . Giới thiệu

Tổng quan về tài liệu cho thấy rằng học máy đã được áp dụng trong nhiều khía cạnh của hoạt động khách sạn, bao gồm dự báo nhu cầu, dự báo giá, dự đoán hủy đặt phòng, hiệu suất tài chính và hiệu suất làm việc. Đáng chú ý, các thuật toán học máy đã chứng minh được độ chính xác dự báo cao hơn so với các mô hình thống kê truyền thống. Các quốc gia đang dẫn đầu trong việc áp dụng các công nghệ học máy trong ngành du lịch khách sạn bao gồm Trung Quốc và Hoa Kỳ.

Cốt lõi của phân tích này là khả năng dự đoán của các mô hình học máy như hồi quy logistic[3], k-Nearest Neighbor[31] và CatBoost, được khai thác để dự báo số lượt hủy đặt phòng khách sạn. Các nhà nghiên cứu so sánh một cách có hệ thống các mô hình này, làm sáng tỏ tính hiệu quả, độ chính xác và ý nghĩa chi phí của chúng. Đáng chú ý, nghiên cứu xác định CatBoost là mô hình phù hợp nhất để dự đoán số lần hủy do tính hiệu quả, độ chính xác cao và chi phí thấp hơn. Khả năng dự đoán này trở nên quan trọng đối với các khách sạn vì nó tạo thành nền tảng cho các chiến lược quản lý tài nguyên và doanh thu.

Ngành dịch vụ lưu trú, đặc biệt là lĩnh vực khách sạn, đã trải qua sự biến đổi đáng kể trong những năm gần đây, được thúc đẩy bởi sự tiến bộ trong các công nghệ thông tin và truyền thông. Trong số những tiến bộ này, việc tích hợp trí tuệ nhân tạo (AI) và học máy (ML) [1] nổi bật như một nhân tố quan trọng thúc đẩy sự thay đổi. Bài báo này trình bày một bài đánh giá phê bình về ứng dụng của học máy trong ngành du lịch khách sạn, nhằm cung cấp cái nhìn sâu sắc về vai trò và tác động của nó.

Hơn nữa, các bài viết còn đi sâu vào sự phức tạp của việc dự đoán giá trong các hệ thống đặt phòng trực tuyến, tận dụng công nghệ học máy và phân tích cảm tính. Việc tích hợp các kỹ thuật phân cụm, chẳng hạn như k-mean, với các mô hình tiên tiến như gradient Boost và XGBoost, thể hiện cách tiếp cận toàn diện để cải thiện hiệu suất dự đoán, đặc biệt rõ ràng trong các thử nghiệm được thực hiện với bộ dữ liệu Airbnb thực.

Trong bối cảnh của quá trình ra quyết định, một thuật toán mới kết hợp phân tích cảm tính dựa trên khía cạnh và VIKOR mờ trực quan được giới thiệu để hỗ trợ khách hàng lựa chọn khách sạn dựa trên các đánh giá trực tuyến. Cách tiếp cận này cho thấy tầm quan trọng của việc khai thác phân tích cảm tính và các mô hình tiên tiến để nâng cao khả năng ra quyết định khi đối mặt với tình trạng quá tải thông tin.

Bộ sưu tập cũng đi sâu vào lĩnh vực hệ thống giới thiệu trong ngành khách sạn khách sạn, khám phá sức mạnh tổng hợp tiềm năng giữa các mô hình ngôn ngữ lớn (LLM) như ChatGPT và các công nghệ thuyết phục. Bằng cách tích hợp ChatGPT vào hệ thống đề xuất, các nhà nghiên cứu nhằm mục đích cung cấp các đề xuất phù hợp với ngữ cảnh dựa trên sở thích của người dùng, từ đó nâng cao mức độ tương tác, sự hài lòng và tỷ lệ chuyển đổi của người dùng.

Đề cập đến bối cảnh rộng hơn của các nền tảng đặt phòng khách sạn trực tuyến, phân tích này mở rộng sang việc khám phá các yếu tố quyết định ý định và cách sử dụng của khách hàng. Các yếu tố như chất lượng trang web, đánh giá trực tuyến, lợi ích cảm nhận và chất lượng dịch vụ được xác định là những yếu tố dự báo quan trọng, nhấn mạnh rằng các khách sạn cần tập trung vào chất lượng thông tin, tính toàn vẹn và đánh giá của khách hàng để quản lý rủi ro và khuyến khích sử dụng.

Tác động của việc áp dụng công nghệ di động đến ý định đặt phòng khách sạn qua điện thoại thông minh của khách hàng cũng được xem xét. Mô hình chấp nhận công nghệ đã sửa đổi (m-TAM) được giới thiệu, nhấn mạnh vai trò của cảm nhận về sự thích thú và giá trị cảm nhận về giá trong việc tác động đến ý định hành vi đối với việc đặt phòng khách sạn trên thiết bị di động.

Các thuật toán có thể hiểu được bằng máy học được áp dụng để dự đoán và giảm thiểu tác động của việc hủy đặt phòng đối với doanh thu của khách sạn. Nghiên cứu này cho thấy tính hiệu quả của các mô hình Phân loại rừng ngẫu nhiên và Phân loại cây bổ sung[2] trong việc đạt được tỷ lệ chính xác, chính xác và thu hồi cao, cung cấp cho chủ khách sạn những hiểu biết sâu sắc có giá trị để dự đoán tốt hơn và đưa ra quyết định chiến lược.

Ngoài phân tích dự đoán, bộ sưu tập còn khám phá lĩnh vực khai thác dữ liệu để phân tích và dự đoán tỷ lệ thành công của khách sạn. Rapid Miner được sử dụng để xử lý dữ liệu đặt phòng của khách hàng, cung cấp thông tin chi tiết về mức độ thành công và cho phép các khách sạn đưa ra quyết định sáng suốt để có chiến lược kinh doanh tốt hơn.

Hơn nữa, nghiên cứu còn xem xét phân khúc tiềm năng của người dùng ứng dụng di động trong hành trình đặt phòng khách sạn. Bằng cách thực hiện các cuộc phỏng vấn sâu và bảng câu hỏi, các nhà nghiên cứu xác định được bốn đặc điểm người dùng, làm sáng tỏ các động cơ và hành động khác nhau của người dùng ở các giai đoạn khác nhau trong hành trình đặt phòng khách sạn của họ.

Phân tích kết thúc bằng việc khám phá mức độ phong phú của phương tiện và tính tương tác trong hình ảnh hóa khách sạn tác động đến niềm tin, giá trị cảm nhận và thái độ của người dùng, từ đó ảnh hưởng đến ý định đặt phòng. Nghiên cứu giới thiệu thiết kế giai thừa 2x2, nêu bật tầm quan trọng của các tính năng trực quan hóa nâng cao trong các ứng dụng đại lý du lịch trực tuyến.

Tóm lại, việc tổng hợp các tài liệu nghiên cứu này cung cấp một cái nhìn tổng quan toàn diện về Phân tích đặt phòng khách sạn, cho thấy sự đa dạng của các phương pháp tiếp cận và phương pháp được sử dụng để hiểu, dự đoán và tối ưu hóa các khía cạnh khác nhau của ngành khách sạn. Khi ngành tiếp tục phát triển trong kỷ nguyên kỹ thuật số, những hiểu biết sâu sắc thu được từ những nghiên cứu này đóng vai trò là nguồn tài nguyên quý giá cho các nhà quản lý khách sạn, đại lý du lịch trực tuyến và nhà cung cấp công nghệ đang nỗ lực đi đầu trong bối cảnh năng động và cạnh tranh này.​

II. Nghiên cứu liên quan

Sự kết hợp của nhiều bài báo nghiên cứu khác nhau được trình bày trong phần tổng hợp này mang đến sự khám phá kỹ lưỡng về bối cảnh phức tạp xung quanh việc phân tích đặt phòng khách sạn. Những nghiên cứu này bao gồm nhiều phương pháp và quan điểm khác nhau, mỗi nghiên cứu đều góp phần vào sự hiểu biết chung về cách những hiểu biết sâu sắc dựa trên dữ liệu có thể cách mạng hóa ngành khách sạn. Chủ đề bao quát xoay quanh việc tận dụng các phân tích nâng cao, học máy và các công nghệ mới nổi để tối ưu hóa quản lý doanh thu, nâng cao sự hài lòng của khách hàng và cung cấp thông tin cho việc ra quyết định chiến lược trong lĩnh vực khách sạn.

Ngày nay, học máy được sử dụng trong một số ngành, bao gồm du lịch, khách sạn và khách sạn[3]. Dự án này sử dụng các phương pháp học máy như phân loại để dự đoán mức độ trung thành của khách hàng và phát triển các chiến lược khả thi để quản lý và cấu trúc mối quan hệ khách hàng. Nghiên cứu được thực hiện bằng kỹ thuật CRISP-DM và ba thuật toán phân loại được chọn là rừng ngẫu nhiên, hồi quy logistic và cây quyết định. Nghiên cứu này đã điều tra các đặc điểm chính về hành vi, sự quan tâm và sở thích của khách hàng của người bán bằng cách sử dụng nghiên cứu điển hình trong thế giới thực với tập dữ liệu đặt phòng khách sạn từ hệ thống Người bán C3 và Phần thưởng C3[30].

Sự xuất hiện của công nghệ blockchain trong các ứng dụng đặt phòng khách sạn là một chủ đề đáng chú ý khác. Một nghiên cứu điều tra hồ sơ của những người sớm áp dụng các ứng dụng đặt phòng khách sạn dựa trên blockchain, làm sáng tỏ các yếu tố liên quan đến nhân khẩu học, tâm lý và dịch vụ ảnh hưởng đến việc áp dụng của họ. Điều này nhấn mạnh việc khám phá các công nghệ tiên tiến của ngành để có các giao dịch an toàn và minh bạch hơn.

Hơn nữa, nghiên cứu còn đi sâu vào những thách thức liên quan đến việc định giá trong hệ thống đặt phòng trực tuyến.Các kỹ thuật phân cụm, phân tích cảm xúc và mô hình học máy như gradient Boost và XGBoost được áp dụng để dự đoán mức giá hợp lý nhất cho chỗ ở, giải quyết vấn đề chung là đặt giá thấp hơn giá trị cảm nhận.

Kết quả nhấn mạnh vai trò quan trọng của học máy trong việc cải thiện các khía cạnh khác nhau của hoạt động khách sạn, bao gồm dự báo nhu cầu và giá cả, dự đoán hủy đặt phòng và hiệu suất tổng thể. Các thuật toán học máy, như Random Forest và Extra Tree Classifier[20], đã chứng minh được độ chính xác cao trong việc dự đoán hủy đặt phòng, mang lại những thông tin quý báu cho chủ sở hữu và quản lý khách sạn để tối ưu hóa chiến lược và nâng cao sự hài lòng của khách hàng.

Bản chất đa diện của bối cảnh nghiên cứu trong phân tích đặt phòng khách sạn càng được nhấn mạnh bởi sự tích hợp của các yếu tố như đánh giá trực tuyến, cảm nhận về sự thích thú, giá trị cảm nhận và sự phong phú của phương tiện truyền thông. Những yếu tố này đóng vai trò then chốt trong việc hình thành ý định và sở thích của khách hàng, làm tăng thêm độ phức tạp cho quá trình phân tích.

Tóm lại, nhóm nghiên cứu tập thể thể hiện tính chất năng động và phát triển của phân tích đặt phòng khách sạn. Việc ngành này áp dụng các phương pháp tiếp cận dựa trên dữ liệu, công nghệ tiên tiến và sự hiểu biết sâu sắc về hành vi của khách hàng biểu thị cam kết về sự xuất sắc và khả năng thích ứng trong một thị trường luôn thay đổi. Sự giao thoa giữa phân tích nâng cao, học máy và các công nghệ mới nổi đang định hình quỹ đạo tương lai của ngành khách sạn, thúc đẩy ngành này hướng tới hiệu quả cao hơn, lấy khách hàng làm trung tâm và khả năng phục hồi cao hơn.