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| 1 | @article{Ibrahim2023TheSO,  title={The Segmentation of Mobile Application Users in The Hotel Booking Journey},  author={Niko Ibrahim and Putu Wuri Handayani and Betty Purwandari and Imairi Eitiveni and Fadhil Dzulfikar},  journal={Interdisciplinary Journal of Information, Knowledge, and Management},  year={2023},  url={https://api.semanticscholar.org/CorpusID:263159464}  } | [The Segmentation of Mobile Application Users in The Hotel Booking Journey](https://www.semanticscholar.org/paper/The-Segmentation-of-Mobile-Application-Users-in-The-Ibrahim-Handayani/08af48b5bfd4a473f7c9ac3eef0ea770e54d65e2) Four user personas are developed that show customer segmentation based on the purpose, motivation, and actions in each journey stage (inspiration, consideration, reservation, and experience) that enables hospitality firms to improve their current services by adapting to the needs of various segments and avoiding unanticipated customer pain points.  Abstract  Aim/Purpose: This study aims to create customer segmentation who use Online Travel Agent (OTA) mobile applications in Indonesia throughout their hotel booking journey. Background: In the context of mobile hotel booking applications, research analyzing the customer experience at each customer journey stage is scarce. However, literature increasingly acknowledges the significance of this stage in comprehending customer behavior and revenue streams. Methodology: This study employs a mixed-method and exploratory approach by doing in-depth interviews with 20 participants and questionnaires from 207 participants. Interview data are analyzed using thematic analysis, while the questionnaires are analyzed using descriptive statistics. Contribution: This study enriches knowledge in understanding customer behavior that considers the usage of mobile apps as a segmentation criterion in the hotel booking journey. Findings: We developed four user personas (no sweat player, spotless seeker, social squad, and bargain hunter) that show customer segmentation based on the purpose, motivation, and actions in each journey stage (inspiration, consideration, reservation, and experience). Recommendations for Practitioners: The resulting customer segmentation enables hospitality firms to improve their current services by adapting to the needs of various segments and avoiding unanticipated customer pain points, such as incomplete information, price changes, no social proof, and limited payment options. Recommendation for Researchers: The quality and robustness of the customer segment produced in this study can be further tested based on the criteria of homogeneity, size, potential benefits, segment stability, segment accessibility, segment compatibility, and segment actionability. Impact on Society: This study has enriched the existing literature by establishing a correlation between user characteristics and how they use smartphones for tourism planning, focusing on hotel booking in mobile applications. Future Research: For future research, each customer segment’s demographic and behavioral factors can be explored further. |
| 2 | @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},  url={https://api.semanticscholar.org/CorpusID:252156161}  } | [Comparison and Analysis of Machine Learning Models to Predict Hotel Booking Cancellation](https://www.semanticscholar.org/paper/Comparison-and-Analysis-of-Machine-Learning-Models-Chen-Ding/047081eb6876b8aa22542c158637518c5c3b1f06) Three possible substitutes for the neural network including logistic regression, k -Nearest Neighbor, and CatBoost are provided, whereas CatBoost, is the most suitable model for hotels to do the prediction.  Abstract  Hotel booking cancellation prediction is crucial in conducting revenue and resource management for hotels. This paper provides three possible substitutes for the neural network including logistic regression, k -Nearest Neighbor ( k - NN), and CatBoost, whereas CatBoost, is the most suitable model for hotels to do the prediction. The advantages of them are effectiveness, high accuracy, and lower cost. The dataset used in this paper was adapted from Kaggle, a set of the booking data from two types of hotels (resort hotel and city hotel) in Portugal, and the corresponding customers’ information. We select some key variables as the predictor to train and test the prediction models based on three machine learning algorithms. After preprocessing the raw data, i.e., standardizing, dealing with missing data, recoding some variables, and scaling, we conduct the prediction and compare each model through three metrics (confusion matrix, accuracy score, and 1 F -score). The result indicates that CatBoost has the best performance in predicting hotel booking cancellation because it has the greatest number of correct prediction samples and the highest accuracy score. We focus on the efficiency and economy of doing cancellation prediction in the hospitality industry to form a basis for future revenue and resource management for hotels. |
| 3 | @article{Wardianti2023TheIO,  title={The Influence of Visual Presentations and Online Reviews on Hotel Booking Intention on the Tiket.Com Application (Case Study: Tiket.Com Application Users)},  author={Shiffa Intania Wardianti and Riski Taufik Hidayah},  journal={International Journal of Social Science and Religion (IJSSR)},  year={2023},  url={https://api.semanticscholar.org/CorpusID:261383116}  } | [The Influence of Visual Presentations and Online Reviews on Hotel Booking Intention on the Tiket.Com Application (Case Study: Tiket.Com Application Users)](https://www.semanticscholar.org/paper/The-Influence-of-Visual-Presentations-and-Online-on-Wardianti-Hidayah/32263f345ba2e64fdee10420c78c43a7a141403a) Based on the results of the hypothesis, H1, H3, and H8 are not in line with previous thinking because they do not positively influence buying interest in the tiket.com application.  Abstract  Tiket.com is an Online Travel Agent (OTA) that provides online hotel bookings. This study aims to analyze the effect of visual presentation and online reviews on hotel booking intention on the Tiket.com application. This research integrates visual presentation and online reviews with the Technology Acceptance Model (TAM). The variables tested consist of Visual presentation, Perceived Ease of Use, and Online review as independent variables, Perceived Usefulness as a moderating variable, and Booking Intention as the dependent variable. The type of research is quantitative with a cross-sectional design and the research subjects are users of the Tiket.com application. Data was collected by distributing questionnaires to 119 respondents. The research hypothesis was tested using the Partial Least Squares Structural Equation Model (PLS-SEM) analysis technique. Based on the results of the hypothesis, H1, H3, and H8 are not in line with previous thinking because they do not positively influence buying interest in the tiket.com application. tiket.com applications should update booking features, and more attractive colors, update the system, reduce addsens, and update a more modern loo |
| 4 | @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},  url={https://api.semanticscholar.org/CorpusID:233421558}  } | [Exploratory Data Analysis & Booking Cancelation Prediction on Hotel Booking Demands Datasets](https://www.semanticscholar.org/paper/Exploratory-Data-Analysis-%26-Booking-Cancelation-on-Saputro-Nanang/31db481dfd8cc7525805319177c51cb3f436702b) 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.  Abstract  Online ordering is the latest breakthrough in the hospitality industry, but when it comes to bookingcancellations, it has a negative impact on it. To reduce and anticipate an increase in the number of bookingcancellations, 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. |
| 5 | @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},  url={https://api.semanticscholar.org/CorpusID:248471295}  } | [Integration of the Theory of Reasoned Action (TRA) on Hotel Room Repurchase Intention using Online Hotel Room Booking Applications](https://www.semanticscholar.org/paper/Integration-of-the-Theory-of-Reasoned-Action-(TRA)-Kurniawan-Widowati/ae21a046d795f9081b266b4db991dfe67d09b23c) 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.  Abstract  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. |
| 6 | @article{Lien2023ImpactOO,  title={Impact of Online Reviews on Online Hotel Booking Intentions},  author={Ching-Yu Lien and Raci Li and Huey-Hsi Lo and Eric Ng},  journal={2023 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)},  year={2023},  pages={0500-0502},  url={https://api.semanticscholar.org/CorpusID:267385287}  } | [Impact of Online Reviews on Online Hotel Booking Intentions](https://www.semanticscholar.org/paper/Impact-of-Online-Reviews-on-Online-Hotel-Booking-Lien-Li/68ab05afde807d546f9849a1b2c9aaa0563eed73) The results show that online reviews have a significant positive effect on hotel booking intention and provide practical value and guiding significance to hotel owners under the background of Internet+.  Abstract  To explore the impact of online reviews on hotel booking intentions, this study reviews relevant literature studies, designs a measurement scale, and issues questionnaires for investigation. A total of 234 questionnaires were issued, 205 questionnaires were usable. The survey response rate was 87.60%. Then, the descriptive analysis, validity analysis, reliability analysis, and regression analysis were conducted on the data through statistical software SPSS19.0. The results show that online reviews have a significant positive effect on hotel booking intentions. It is expected that this study can enrich relevant studies and provide practical value and guiding significance to hotelowners under the background of Internet+. |
| 7 | @article{Rizal2023TheEO,  title={The Effect of Interaction and Website Environment Qualities Towards E-Loyalty: A Case Study of Online Hotel Booking in Indonesia and Thailand},  author={Fikri Samsu Rizal and Jono M. Munandar and Ma’mun Sarma},  journal={MANAJEMEN IKM: Jurnal Manajemen Pengembangan Industri Kecil Menengah},  year={2023},  url={https://api.semanticscholar.org/CorpusID:265391390}  } | [The Effect of Interaction and Website Environment Qualities Towards E-Loyalty: A Case Study of Online Hotel Booking in Indonesia and Thailand](https://www.semanticscholar.org/paper/The-Effect-of-Interaction-and-Website-Environment-A-Rizal-Munandar/22008fa911cbc3194e62dae3370be830e58d7a58) The research provides a new picture of the online lodging service business in two countries, namely Indonesia and Thailand, and examines the direct relationship between the interaction quality and website environment quality variables on e-Loyalty.  Abstract  Online hotel booking is a method of renting a place through the internet. Today, people are becoming users of online rental properties as a necessity and lifestyle. Indonesia and Thailand as tourist destinations indicates a large population that have potential for the online property rental business. This study will analyze the effect of interaction quality, website environment quality that have an impact on customer loyalty toward this product. In this study, data was collected by a questionnaire that has been given, the authors used Structural Equation Modeling - Partial Least Square (SmartPLS) for analysis method. This method is used to determine the number of online hotel booking users so that it will be seen how the effect of interaction quality and website environment quality has an impact on e-Loyalty. In both countries, the quality of interaction has a positive and significant effect on e-loyalty. The coefficient value of the interaction quality parameter in the Indonesian model has a value of 0.544. The results of the significance test showed that the website environment quality variable had a positive and significant effect in both countries with T-statistical test results > 1.96 and P-values less than 0.05. This study examines the direct relationship between the interaction quality and website environment quality variables on e-Loyalty. This research can be additional knowledge related to the determinants of loyalty found in online businesses. In addition, the research also provides a new picture of the online lodging service business in two countries, namely Indonesia and Thailand |
| 8 | @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},  url={https://api.semanticscholar.org/CorpusID:236228734}  } | [Examining the impact of visual presentations and online reviews on hotel booking intentions](https://www.semanticscholar.org/paper/Examining-the-impact-of-visual-presentations-and-on-Amin-Mahomed/5092ea98020b5be4ac74608305c97b549cbf8c0f) 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.  Abstract  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. |
| 9 | @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},  url={https://api.semanticscholar.org/CorpusID:260671069}  } | [Sentiment Analysis on Hotel Ratings Using Dynamic Convolution Neural Network](https://www.semanticscholar.org/paper/Sentiment-Analysis-on-Hotel-Ratings-Using-Dynamic-Sinaga-Gunawan/c5a2b7e08edadef0491d1464a151b5b410781ac0)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 hotelsusing 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%. |
| 10 | @article{Budiyantara2021ANALISISDM,  title={ANALISIS DATA MINING HOTEL BOOKING MENGGUNAKAN MODEL ID3},  author={Agus Budiyantara and Andreanus Kevin Wijaya and Anthony Gunawan and Michel Rolland},  journal={JBASE - Journal of Business and Audit Information Systems},  year={2021},  url={https://api.semanticscholar.org/CorpusID:233560685}  } | [ANALISIS DATA MINING HOTEL BOOKING MENGGUNAKAN MODEL ID3](https://www.semanticscholar.org/paper/ANALISIS-DATA-MINING-HOTEL-BOOKING-MENGGUNAKAN-ID3-Budiyantara-Wijaya/aeedba9e40c0a6f88e35846a787a1fe8d9fc565f) The Data Mining analysis in a hotel is explained to analyze the success rate of a hotel and insights about the level of success of the hotel are obtained and the results can be used by the hotel to assist in better decision making.  Abstract  The rapid development of information technology in this era makes it easier for someone to get information. Many business sectors are now promoting their products or services on the internet. An example is a hotel, in the technological era now we can easily find out about hotel information, ranging from location, price, and others. With the convenience to get information about this hotel, customers are indirectly increasing in a hotel. This of course causes the data contained in a hotel to increase as well. These data can be processed until we get an output and there is also data that is missing or cannot be processed. The data that can be processed can be analyzed until finally it becomes an information and prediction. In this journal, we will explain the Data Mining analysis in a hotel to analyze the success rate of a hotel. By doing this analysis, you will get insights about the level of success of the hotel and can also predict the future. Thus later the results of this analysis can be used by the hotel to assist in better decision making. Processing data in this study using the Rapid Miner application by entering data of customers who make hotelreservations. |
| 11 | @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},  url={https://api.semanticscholar.org/CorpusID:255697078}  } | [Aspect-based sentiment analysis for hotel reviews using an improved model of long short-term memory](https://www.semanticscholar.org/paper/Aspect-based-sentiment-analysis-for-hotel-reviews-Jayanto-Kusumaningrum/ce45f02c4cc68f1c7758986daa4753ed8a3dce58) A method to summarise reviews based on multiple aspects, including food, room, service, and location, usinglong short-term memory (LSTM), together with hidden layers and automation of the optimal number of hidden neurons is proposed.  Abstract  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 bookingservices to acquire a review recap on more specific aspects of services offered by hotels |
| 12 | @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},  url={https://api.semanticscholar.org/CorpusID:250965133}  } | [Assessment of Hotel Guest Satisfaction Using Sentiment Analysis: A Case Study of Maldives Hotels](https://www.semanticscholar.org/paper/Assessment-of-Hotel-Guest-Satisfaction-Using-A-Case-Shehu-Kana/1ee6114144e7e538ba3f1fdd4da371d4384cf3fd) 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.  Abstract  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 usingword 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. |
| 13 | @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},  url={https://api.semanticscholar.org/CorpusID:259469505}  } | [Information extraction and sentiment analysis of hotel reviews in Croatia](https://www.semanticscholar.org/paper/Information-extraction-and-sentiment-analysis-of-in-Šuman-Vignjević/f606bcfd6ba656a24100ba5999b4730df219fe82) The most frequent words and expressions that can be useful for hotel management in managing accommodation services and achieving competitive advantages were identified for the 2019 and 2021 tourism seasons.  Abstract  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. |
| 14 | @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},  url={https://api.semanticscholar.org/CorpusID:256540530}  } | [Customer Sentiment Analysis in Hotel Reviews Through Natural Language Processing Techniques](https://www.semanticscholar.org/paper/Customer-Sentiment-Analysis-in-Hotel-Reviews-Ounacer-Mhamdi/7644b74ef194b84c219df83ab16cecd43ec1af87) 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.  Abstract  —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 usingthe 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. |
| 15 | @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},  url={https://api.semanticscholar.org/CorpusID:242036450}  } | [Forecasting Hotel Room Occupancy Using Long Short-Term Memory Networks with Sentiment Analysis and Scores of Customer Online Reviews](https://www.semanticscholar.org/paper/Forecasting-Hotel-Room-Occupancy-Using-Long-Memory-Chang-Chen/a427b73b5437e85605407697af0257516d1b28ba) 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*.  Abstract  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. |
| 16 | @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},  url={https://api.semanticscholar.org/CorpusID:221290417}  } | [The Effects of Perceived Price, Website Trust and Online Reviews on Online Hotel Booking Intention in Kuala Lumpur](https://www.semanticscholar.org/paper/The-Effects-of-Perceived-Price%2C-Website-Trust-and-Augustine/d200629f51bf4aea258b2616b81162a4ba734e21) 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.  Abstract  This research study is conducted to determine the factors that effects consumers online hotel bookingintention 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. |
| 17 | @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},  url={https://api.semanticscholar.org/CorpusID:245893317}  } | [Exploring Bidirectional Performance of Hotel Attributes through Online Reviews Based on Sentiment Analysis and Kano-IPA Model](https://www.semanticscholar.org/paper/Exploring-Bidirectional-Performance-of-Hotel-Online-Chen-Zhong/7a7a8fb85f9cab9bbf9927461438e954b67be562) 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.  Abstract  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 analysistechniques 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. |
| 18 | @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},  url={https://api.semanticscholar.org/CorpusID:251867869}  } | [Analysis of Application Data Mining to Capture Consumer Review Data on Booking Websites](https://www.semanticscholar.org/paper/Analysis-of-Application-Data-Mining-to-Capture-Data-Tsai-Lin/f3bba97356ced82b7433fc03052925ef3d8f6258) 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.  Abstract  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. |
| 19 | @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},  url={https://api.semanticscholar.org/CorpusID:264100881}  } | [Customer Loyalty Prediction for Hotel Industry Using Machine Learning Approach](https://www.semanticscholar.org/paper/Customer-Loyalty-Prediction-for-Hotel-Industry-Hamdan-Othman/64fbc785aefec12f768166bc3d308b5870a76cc9) This project uses machine learning approaches such as classification to predict hotel customers’ loyalty and develop viable strategies for managing and structuring customer relationships to overcome the limits of this study method.  Abstract  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. |
| 20 | @article{NguyenThiThu2022AMF,  title={A method for Vietnamese Hotel Online Rating based on Big Data Analysis: Vietnames Hotel Rating based on Big Data analysis},  author={Ha Nguyen Thi Thu and Binh Giang Nguyen and Nguyen Xuan Trung and Vinh Ho Ngoc},  journal={Proceedings of the 6th International Conference on E-Commerce, E-Business and E-Government},  year={2022},  url={https://api.semanticscholar.org/CorpusID:250390196}  } | [A method for Vietnamese Hotel Online Rating based on Big Data Analysis: Vietnames Hotel Rating based on Big Data analysis](https://www.semanticscholar.org/paper/A-method-for-Vietnamese-Hotel-Online-Rating-based-Thu-Nguyen/a47411550436e2e9a5ec663ace5dab9b53006e68) A new hotel rating method is proposed using Internet traveler reviews for rating in Vietnam using deep neural network model to classify hotels from 3 to 5 stars and shows that, the deviation between online rating and actual star rating is 0.6.  Abstract  The rapid growth of online booking websites has created a new trend in hotel star rating based on customer reviews. Therefore, there is a discrepancy between hotel ratings by traveler on the Internet and hotel ratings according to national standards, especially for 4–5 stars hotels. In recent years, a number of hotel rating organizations on the world have incorporated Internet star rating standards to update their hotel star rating standards. In Vietnam, the hotelstar rating standards have been updated since 2015 and have not yet approached online hotel star ratings. In this study, a new hotel rating method is proposed using Internet traveler reviews for rating. Data was collected from TripAdvisor about hotels in Vietnam from 4-5 stars of 5 major cities. Deep neural network model is used to classify hotels from 3 to 5 stars. The results shown that, the deviation between online rating and actual star rating is 0.6. This is also a suggestion for hotel managers to understand about their customers and improve the quality of their hotels to match the common standards of many different customers around the world. |
| 21 | @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},  url={https://api.semanticscholar.org/CorpusID:219683427}  } | [Sentiment Analysis of Customers Opinions on Hotel Stays using Voted Classifier](https://www.semanticscholar.org/paper/Sentiment-Analysis-of-Customers-Opinions-on-Hotel-Patel-Jain/622a1f39e3c3bf9aaa6578ea30abdd6fa8498e3f) 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.  Abstract  — 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 hotelis 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%. |
| 22 | @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](https://www.semanticscholar.org/paper/Prediction-System-for-Flight-Fares-and-Hotel-Prices-Dimble-Pandey/ebb7cf955a141b6521dcbb9c53aa835d733d3c92) 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.  Abstract  : As domestic air travel is getting more and more popular these days in India with various air ticket bookingchannels 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. |
| 23 | @article{Guo2023TheIO,  title={The Impact of Online Reviews on Hotel Ratings through the Lens of Elaboration Likelihood Model: A Text Mining Approach},  author={Qiannan Guo and Jinzhe Yan},  journal={KSII Transactions on Internet and Information Systems},  year={2023},  url={https://api.semanticscholar.org/CorpusID:265062492}  } | [The Impact of Online Reviews on Hotel Ratings through the Lens of Elaboration Likelihood Model: A Text Mining Approach](https://www.semanticscholar.org/paper/The-Impact-of-Online-Reviews-on-Hotel-Ratings-the-A-Guo-Yan/b80bcf7307bb7e8e6dcea91bec7d75c410d24048)The hotel industry is an example of experiential services. As consumers cannot fully evaluate the online review content and quality of their services before booking, they must rely on several online reviews to reduce their perceived risks. However, individuals face information overload owing to the explosion of online reviews. Therefore, consumer cognitive fluency is an individual's subjective experience of the difficulty in processing information. Information complexity influences the receiver's attitude, behavior, and purchase decisions. Individuals who cannot process complex information rely on the peripheral route, whereas those who can process more information prefer the central route. This study further discusses the influence of the complexity of review information on hotel ratings using online attraction review data retrieved from TripAdvisor.com. This study conducts a two-level empirical analysis to explore the factors that affect review value. First, in the Peripheral Route model, we introduce a negative binomial regression model to examine the impact of intuitive and straightforward information on hotel ratings. In the Central Route model, we use a Tobit regression model with expert reviews as moderator variables to analyze the impact of complex information on hotel ratings. According to the analysis, five-star and budget hotels have different effects on hotelratings. These findings have immediate implications for hotel managers in terms of better identifying potentially valuable reviews. |
| 24 | @article{Nguyen2023ExploringCF,  title={Exploring Customer Feedback on Their Hotel Experiences in Vietnam},  author={Ha Thi Thu Nguyen and Thao Phan Huong and Anh Le Thi Tram and Thao Viet Tran},  journal={International Journal of E-Entrepreneurship and Innovation},  year={2023},  url={https://api.semanticscholar.org/CorpusID:261799549}  } | [Exploring Customer Feedback on Their Hotel Experiences in Vietnam](https://www.semanticscholar.org/paper/Exploring-Customer-Feedback-on-Their-Hotel-in-Nguyen-Huong/ace83fa359d6a4e6c7450f97fc0578a5adca0d7e) The results show that most customers are satisfied with Vietnamese hotel services, and less than 10% are dissatisfied with aspects such as staff, price, check-in, and location.  Abstract  Over the past twenty years, customer experience has attracted the attention of researchers and business executives. For the hotel service industry, understanding customer experience becomes a necessity, as it is one of the top goals for hotel survival. With the development of e-commerce and the globalized hotel industry, customers are easily shared on online booking sites, making hotel managers work harder to design a good customer experience management plan. This chapter proposes an approach to analyzing data from customers' online reviews with their experiences to understand their emotional and psychological states after using Vietnamese hotel services. The Python language is used for statistical analysis of these data, and the Vander library measures customers' positive and negative views after the hotel service experience. The results show that most customers are satisfied with Vietnamese hotel services, and less than 10% are dissatisfied with aspects such as staff, price, check-in, and location. |
| 25 | @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},  url={https://api.semanticscholar.org/CorpusID:221688174}  } | [Text Mining for Aspect Based Sentiment Analysis on Customer Review : A Case Study in the Hotel Industry](https://www.semanticscholar.org/paper/Text-Mining-for-Aspect-Based-Sentiment-Analysis-on-Bachtiar-Paulina/2f01424a6b25004df6310d570336137ea75bfc11) 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.  Abstract  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. |
| 26 | @article{Pratama2021DevelopmentOM,  title={Development of Motion Graphic as Educational Material for Hotel Promotion Using EPIC Model Testing},  author={Abie Pratama and Dwi Ely Kurniawan},  journal={Jurnal Infomedia},  year={2021},  url={https://api.semanticscholar.org/CorpusID:237817763}  } | [Development of Motion Graphic as Educational Material for Hotel Promotion Using EPIC Model Testing](https://www.semanticscholar.org/paper/Development-of-Motion-Graphic-as-Educational-for-Pratama-Kurniawan/d1b6c179f8fb6cb920c001f06e282a3a7e517b92) Beverly Hotel Batam is a four-star hotel located in the city of Batam and Motion Graphic became the media information to introduce Beverly HotelBatam to the public and is very effective as a promotional media.  Abstract  Beverly Hotel Batam is a four-star hotel located in the city of Batam. In this case, Motion Graphic became the media information to introduce Beverly Hotel Batam to the public. The Motion Graphic implementation in this video offers to provide interesting information to provide attraction and be easily accepted by the recipient of the information. Motion Graphic in this video will provide Beverly Hotel Batam information, and how to use a website to make online bookings at Beverly Hotel Batam. From this promotional media, it will help staff at Beverly Hotel Batam to no longer have to explain it manually and make Motion as a website promotion media, so that in the future guests who want to stay at the Beverly Hotel Batam can make online reservations easily on a website that is already there is. The resulting video is very effective as a promotional media, based on the EPIC Model analysis which reaches an average value of 4.58 based on a scale of 1-5. Empathy: In this dimension, the respondent's response is reached 4.56. In the evaluation it means very effective as a promotional media, Persuasion: In this dimension, the respondent's response reached 4.50. In the evaluation it means very effective as a promotional media, Impact: In this dimension, the respondent's response reached a value of 4.68. In the evaluation is interpreted as effective as a promotional media, Communication: In this dimension, the respondent's response reached 4.59. In the evaluation, it means very effective as a promotional media. Also, the material expert gives a score of 4.71 in the evaluation it means very effective. |
| 27 | @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},  url={https://api.semanticscholar.org/CorpusID:225881348}  } | [Using Technology and Customer Behaviour Characteristics to Improve Hotel Sales Performance](https://www.semanticscholar.org/paper/Using-Technology-and-Customer-Behaviour-to-Improve-Chalupa-Petříček/4a6595f571e3bd344a6e3605a7838ffbbd43e086) Analysis of customer behaviour with a focus on the use of modern technologies shows that the selected hotelis 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.  Abstract  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. |
| 28 | @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](https://www.semanticscholar.org/paper/Classifying-Different-Levels-of-Customer-With-Hotel-Nguyen-Manh/3651da799b7fa5e2c62f56e6769c10b8ffa0097d) 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.  Abstract  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 usedto 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. |
| 29 | @article{NaTakuatung2023BoutiqueHS,  title={Boutique Hotel Service Digitalization: A Business Owner Study},  author={Somatat Na Takuatung and Chokeanand Bussracumpakorn},  journal={Journal of Architectural/Planning Research and Studies (JARS)},  year={2023},  url={https://api.semanticscholar.org/CorpusID:264887046}  } | [Boutique Hotel Service Digitalization: A Business Owner Study](https://www.semanticscholar.org/paper/Boutique-Hotel-Service-Digitalization%3A-A-Business-Takuatung-Bussracumpakorn/f8a387093062fa06979cb7aafbcc43cb1c8d612b) A model of hotel business owners’ requirements to innovate new service solutions, such as the contactless software solution, that guests can employ for check-in, check-out, order services, and talk to the hotel through the mobile application is revealed.  Abstract  The COVID-19 pandemic has generated negative, economic impacts on the tourism and leisure sector in Thailand, especially small boutique hotels. These hotels have had to develop more efficient and innovative approaches to meet new normal expectations, for example, contactless service. Digital technologies, such as Machine Learning and Artificial Intelligence, can open new possibilities and opportunities for hotels to digitize their customers’ services. A review of the literature indicated that data important to the management of hotel products and services include Customer Segmentation, Customer Profiling, Menu Engineering, Productivity Indexing, Customer Associations, Forecasting, Energy Consumption, and Room Rates. These characteristics can be examined by machine learning. This study used a mixed qualitative and quantitative research method. The data were gathered by interviewing two boutique hotel owners in Bangkok and collecting the hotels’ data, including online travel booking agents and direct booking logs, for the period April 2016 – September 2021. The analysis was conducted using the booking data from the two hotels: 3946 records from Hotel A and 3948 from Hotel B. In this research, k-means clustering was used to segment hotel guests. Two-class logistic regression and a two-class boosted decision tree were used to predict the prospective customer, while linear regression and decision forest regression were used to forecast the market demand. The findings reveal a model of hotel business owners’ requirements to innovate new service solutions, such as the contactless software solution, that guests can employ for check-in, check-out, order services, and talk to the hotel through the mobile application. This would help hotel owners to manage costs, employees, and customers. The solution also means that hotel managers would no longer need to be involved in the manual implementation of revenue management tasks. This data analytics approach can effectively sift through the signals detected from market variables, discover patterns and anomalies, make predictions for guest arrivals, and calculate optimum prices in real-time, as the market changes. |
| 30 | @article{Moenga2023InfluenceOT,  title={Influence of Technology and ICT Policies on Hotel Guest Satisfaction in the Hotel Industry: A Case of 4 and 5 Star Rated Hotels in Nairobi City},  author={Alice Moenga and Dorothy J Rotich},  journal={Journal of Hospitality and Tourism Management},  year={2023},  url={https://api.semanticscholar.org/CorpusID:258757626}  } | [Influence of Technology and ICT Policies on Hotel Guest Satisfaction in the Hotel Industry: A Case of 4 and 5 Star Rated Hotels in Nairobi City](https://www.semanticscholar.org/paper/Influence-of-Technology-and-ICT-Policies-on-Hotel-A-Moenga-Rotich/71665b7f753b5968ad3776c59de58158bde5873b) The study concluded that four and five star hotels in Nairobi City County should consider adopting technology and ICT policies such as Property Management Systems, Online booking platforms, In-Room Technology, Customer Relationship Management Systems and others as ways of enhancing guest satisfaction.  Abstract  The adoption of ICT in the hospitality industry is important in the development of business, minimizing costs and the generation of revenue as well as to reach more customers. Across the world, the use of technology and information and communication technologies (ICT) in the hospitality industry has significantly impacted the way hotels operate and the way they provide services to their guests. In the wake of turbulence in the hospitality industry especially as a result of the Covid-19 pandemic that reduced disposable income as well as crippling travel and tourism around the planet, hotels need to lower their operation costs, find ways of increasing their revenue as well as enhancing guest satisfaction. The study sought to establish the effect of technology and ICT policies on 4 and 5 star hotels in Nairobi City County. Specifically, the study sought to establish the effects of property management systems on guest satisfaction in 4 and 5 star hotels in Nairobi Kenya; to examine the effect of online booking platforms on guest satisfaction in 4 and 5 star hotels in Nairobi Kenya; to determine the effect of in-room technology on guest satisfaction in 4 and 5 star hotels in Nairobi Kenya and to establish the effect of customer relationship management systems on guest satisfaction in 4 and 5 star hotels in Nairobi Kenya. The study was guided by the Technology Acceptance Model (TAM) and the Resource Based View Theory. The target population was 4583 staff from 24 four and five star hotels in Nairobi. Stratified random sampling was used to choose a sample size of 368 employees. The data was collected using structured questionnaires for the employees. The questionnaires were administered through google online questionnaire. Regression analysis was conducted to establish the relationship between the variables. The results were presented in graphs and tables. The study used a multiple regression model to show the relationship between the study variables. The findings revealed an R squared coefficient of 0.643 and adjusted R squared of 0.618 at 95% significance level, implying that the technology and ICT policies adopted in the study (Property Management Systems, Online booking platforms, In-Room Technology, Customer Relationship Management Systems) jointly explained 64.3 percent of the variation in guest satisfaction in four and five star hotels in Nairobi City County. The study also found that property management systems had a positive and significant effect on guest satisfaction in four and five star hotels in Nairobi City County (β =.357, p=.013<.05); online booking platforms had a positive and significant effect on guest satisfaction in four and five star hotels in Nairobi City County (β =.427, p=.005<.05); in-room technology had a positive and significant effect on guest satisfaction in four and five star hotels in Nairobi City County (β =.322, p=.003>.05) and finally the study found that customer relationship management systems as an aspect of technology and ICT policies had a positive and significant effect on guest satisfaction in four and five star hotels in Nairobi City County(β =.383, p=.000<.05). The study concluded that technology and ICT policies had a positive and significant effect on guest satisfaction in four and five star hotels in Nairobi City County. The study thus recommended that four and five star hotels in Nairobi City County should consider adopting technology and ICT policies such as Property Management Systems, Online booking platforms, In-Room Technology, Customer Relationship Management Systems and others as ways of enhancing guest satisfaction. Keywords: Technology, Guest Satisfaction, ICT Policies |
| 31 | @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},  url={https://api.semanticscholar.org/CorpusID:258732150}  } | [An Efficient Deep Learning for Thai Sentiment Analysis](https://www.semanticscholar.org/paper/An-Efficient-Deep-Learning-for-Thai-Sentiment-Khamphakdee-Seresangtakul/376a79eb0bb4dd7bab1d7761ccbb65811325ae0e) 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.  Abstract  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. |
| 32 | @article{Li2023MultitaskLU,  title={Multitask Learning Using Feature Extraction Network for Smart Tourism Applications},  author={Yu Li and Fanxiang Zeng and N. Zhang and Zulong Chen and Li Zhou and MaoLei Huang and Tianqi Zhu and Jing Wang},  journal={IEEE Internet of Things Journal},  year={2023},  volume={10},  pages={18790-18798},  url={https://api.semanticscholar.org/CorpusID:259393363}  } | [Multitask Learning Using Feature Extraction Network for Smart Tourism Applications](https://www.semanticscholar.org/paper/Multitask-Learning-Using-Feature-Extraction-Network-Li-Zeng/3831b3befb5d4d413fe3d933e37df51aa4898ef0) A multitask learning (MTL) method with a novel flexible multilevel extraction network [denoted as flexible FMTL] is proposed, which takes MTL into consideration in a unified representation learning framework and is divided into feature encoding and task prediction.  Abstract  Recently around half of the world’s current population resides in urban areas and benefit from rich services in the smart city. The majority of smart city services are recommendation-related services, and with the development of Internet, most recommendation services in smart economy are online recommendations. Online travel platforms (OTPs) (like Booking, Airbnb, Ctrip, and Fliggy) provide people sufficient resources and convenient approaches to plan and enjoy their trips in smart city. Hotel recommendation is essential for the success of OTPs. However, it is more challenging compared to item recommendation in typical E-commerce scenarios (e.g., Taobao, Jd, and YouTube). The in-nature characteristics of low-frequency and high unit-price lead to more severe sparse and long-tail data distributions. Moreover, for enhancing user experience and business returns, the recommender system seeks to improve both click-through rate (CTR) and conversion rate (CVR) where the seesaw phenomenon may occur. In order to address the aforementioned shortages in hotel recommendation, a multitask learning (MTL) method with a novel flexible multilevel extraction network [denoted as flexible MTL (FMTL)] is proposed. Particularly, FMTL takes MTL into consideration in a unified representation learning framework and is divided into feature encoding and task prediction. In the feature encoding phase, we introduce a novel multirepresentation extractor with temperature-adjusted gating mechanism (T-MRE) for each task, producing more flexible representations for sparse and long-tail data. Moreover, we fuse different representations for each task with three strategies during the prediction phase and empirically demonstrate that the simple concatenation strategy is superior than other relatively complex gating approaches. Offline and live experiments with regard to both overall metrics and user group analysis based on the scarcity of user behaviors illustrate that without significantly increasing model parameters, our FMTL model outperforms substantially over several state-of-the-art models. |
| 33 | @article{Alotaibi2020ApplicationOM,  title={Application of Machine Learning in the Hotel Industry: A Critical Review},  author={Eid Alotaibi},  journal={Journal of Association of Arab Universities for Tourism and Hospitality},  year={2020},  url={https://api.semanticscholar.org/CorpusID:225236360}  } | [Application of Machine Learning in the Hotel Industry: A Critical Review](https://www.semanticscholar.org/paper/Application-of-Machine-Learning-in-the-Hotel-A-Alotaibi/f21857e49d0e2c1138a9d544dedcee792758983c) 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.  Abstract  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 hotelindustry. 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 are the countries using machine learning in the hotelindustry? 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 hotelsOriginality 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. |
| 34 | @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},  url={https://api.semanticscholar.org/CorpusID:252156161}  } | [Comparison and Analysis of Machine Learning Models to Predict Hotel Booking Cancellation](https://www.semanticscholar.org/paper/Comparison-and-Analysis-of-Machine-Learning-Models-Chen-Ding/047081eb6876b8aa22542c158637518c5c3b1f06) Three possible substitutes for the neural network including logistic regression, k -Nearest Neighbor, and CatBoost are provided, whereas CatBoost, is the most suitable model for hotels to do the prediction.  Abstract  Hotel booking cancellation prediction is crucial in conducting revenue and resource management for hotels. This paper provides three possible substitutes for the neural network including logistic regression, k -Nearest Neighbor ( k - NN), and CatBoost, whereas CatBoost, is the most suitable model for hotels to do the prediction. The advantages of them are effectiveness, high accuracy, and lower cost. The dataset used in this paper was adapted from Kaggle, a set of the booking data from two types of hotels (resort hotel and city hotel) in Portugal, and the corresponding customers’ information. We select some key variables as the predictor to train and test the prediction models based on three machine learning algorithms. After preprocessing the raw data, i.e., standardizing, dealing with missing data, recoding some variables, and scaling, we conduct the prediction and compare each model through three metrics (confusion matrix, accuracy score, and 1 F -score). The result indicates that CatBoost has the best performance in predicting hotel booking cancellation because it has the greatest number of correct prediction samples and the highest accuracy score. We focus on the efficiency and economy of doing cancellation prediction in the hospitality industry to form a basis for future revenue and resource management for hotels. |
| 35 | @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},  url={https://api.semanticscholar.org/CorpusID:214642516}  } | [Machine Learning-Based Sentiment Analysis for Analyzing the Travelers Reviews on Egyptian Hotels](https://www.semanticscholar.org/paper/Machine-Learning-Based-Sentiment-Analysis-for-the-Mostafa/bdc837a7238ebe8755445d331ec86cddbff0f2fa) 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.  Abstract  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. |

1. **GIỚI THIỆU BÀI TOÁN**

Trong thời đại số ngày nay, sự lan rộng của công nghệ đã gây ra một cú sốc mạnh mẽ đối với ngành du lịch và lưu trú, làm thay đổi hoàn toàn cách mà khách hàng tìm kiếm và đặt phòng khách sạn. Sự xuất hiện của các nền tảng đặt phòng trực tuyến và ứng dụng di động đã tạo ra một cuộc cách mạng trong lĩnh vực này, từ việc tăng cường tiện ích cho người tiêu dùng đến việc thay đổi cách thức quản lý và kinh doanh của các khách sạn. Trong bối cảnh này, việc phân tích đặt phòng khách sạn trở thành một chủ đề quan trọng và hấp dẫn trong cộng đồng nghiên cứu. Các nhà nghiên cứu và các nhà quản lý ngành du lịch đang dần nhận ra tầm quan trọng của việc hiểu biết sâu sắc về hành vi của khách hàng để từ đó dự đoán xu hướng thị trường và tối ưu hóa hoạt động kinh doanh của các khách sạn để có thể cạnh tranh và tồn tại trong một thị trường lưu trú khách sạn ngày càng cạnh tranh.

Các nghiên cứu từ 4 năm gần đây, từ 2020 đến 2024 tập trung vào nhiều khía cạnh khác nhau của phân tích dữ liêu về đặt phòng khách sạn. Đầu tiên, việc đào sâu vào hành vi của khách hàng là một chủ đề quan trọng, các nghiên cứu đã tập trung vào phân tích hành vi của khách hàng khi tìm kiếm, lựa chọn và đặt phòng trên các nền tảng đặt phòng trực tuyến [1],[2] hay phân tích tác động của giá cả, độ tin cậy của trang web [16] hay là các đánh giá trực tuyến có tác động gì đối với ý định đặt phòng khách sạn trực tuyến [6], [16] từ các trang web và ứng dụng đặt phòng. Từ đó rút ra nhận xét rằng các đánh giá phản hồi của khách hàng có tác động tích cực đến ý định đặt phòng khách sạn, đến quyết định mua hàng của khách hàng và có thể ảnh hưởng đến xếp hạng khách sạn. Các nhà quản lý khách sạn có thể thu hút nhiều khách hàng hơn và tăng lượng đặt phòng nếu biết sử dụng phản hồi này rồi cải thiện chất lượng dịch vụ để nâng cao sự hài lòng và lòng trung thành của khách hàng.

Ngoài ra, việc dự đoán xu hướng thị trường cũng là một lĩnh vực nghiên cứu quan trọng. Các nhà nghiên cứu đã sử dụng các phương pháp thống kê và dữ liệu lớn tạo ra các công cụ và mô hình để dự đoán tình hình thị trường trong tương lai [10], [22]. Về việc sử dụng các thuật toán học máy để dự đoán xu hướng đặt phòng khách sạn dựa trên dữ liệu lịch sử. Bằng cách khai thác dữ liệu giá vé máy bay và giá vé khách sạn trước đây [22], các mô hình có thể được phát triển để dự báo sự thay đổi giá theo thời gian, hỗ trợ người tiêu dùng đưa ra quyết định sáng suốt. Nhấn mạnh tầm quan trọng của việc sử dụng các mô hình dự báo tiên tiến dựa trên học máy và trí tuệ nhân tạo trong lĩnh vực khách sạn. Những mô hình này có thể giúp dự đoán nhu cầu thị trường, đổi mới các giải pháp dịch vụ mới và hỗ trợ các nhà khai thác khách sạn trong việc thiết lập các chiến lược phù hợp. Bằng cách phân tích dữ liệu trong thế giới thực, nghiên cứu nhằm xác định các thuật toán hiệu quả nhất để dự đoán sự thay đổi giá vé máy bay và xác định giá khách sạn phù hợp [22]. Việc này giúp các doanh nghiệp trong ngành du lịch có thể đưa ra các quyết định chiến lược về giá cả, quản lý phòng trống và tiếp thị để tối ưu hóa doanh thu và lợi nhuận. từ đó giúp các doanh nghiệp trong ngành du lịch có thể thích ứng và phản ứng kịp thời với các thay đổi trong nhu cầu và sở thích của khách hàng.

Cuối cùng, việc tối ưu hóa hoạt động kinh doanh của các khách sạn là một mục tiêu quan trọng của các nghiên cứu về phân tích đặt phòng. Các nhà nghiên cứu vẫn đang tiếp tục tìm cách áp dụng công nghệ trí tuệ nhân tạo và các phương pháp tối ưu hóa để cải thiện quy trình đặt phòng, tăng cường trải nghiệm của khách hàng và tối ưu hóa hiệu suất kinh doanh của các khách sạn, bao gồm việc tối ưu hóa giá cả, quản lý phòng trống và dự đoán nhu cầu của khách hàng.

1. **NGHIÊN CỨU LIÊN QUAN**

Trong một thế giới đang chuyển đổi nhanh chóng, ngành du lịch và lưu trú đang trải qua những thách thức lớn đối với sự phát triển nhanh chóng của công nghệ. Trong bối cảnh này, việc nghiên cứu và áp dụng công nghệ trong ngành khách sạn trở nên càng trở nên quan trọng và cần thiết hơn bao giờ hết. Nghiên cứu “Phân loại các mức độ hài lòng của khách hàng với các dịch vụ khách sạn tại Việt Nam bằng cách phân tích phản hồi của khách hàng”[28] (2024) của Ha Thi Thu Nguyen, Hung Nguyen Manh, và Thoa Bui Thi Kim tập trung vào việc phân loại các mức độ hài lòng khác nhau của khách hàng đối với dịch vụ khách sạn ở Việt Nam thông qua phân tích phản hồi từ khách hàng. Họ nhấn mạnh rằng sự phát triển của hệ thống đặt chỗ trực tuyến đã tạo ra nền tảng thông tin để chia sẻ kinh nghiệm khi lựa chọn điểm đến. Sử dụng các dữ liệu này, nhóm tác giả đã phát triển một phương pháp mới sử dụng quy tắc ngôn ngữ học để đo lường sự hài lòng của khách hàng với các dịch vụ khách sạn. Nghiên cứu này bắt đầu bằng việc thu thập 21.196 đánh giá từ TripAdvisor về dịch vụ khách sạn ở bảy thành phố chính của Việt Nam. Tiếp đến các tác giả đã phát triển một loạt các công thức để đo lường sự hài lòng của khách hàng dựa trên số liệu thống kê và quy tắc ngôn ngữ. Họ đã sử dụng thư viện VADER của Python để đo lường sự hài lòng tổng thể của khách hàng đối với các khách sạn ở Việt Nam. Cuối cùng, thông qua phân tích ngôn ngữ, họ đã tính toán và đánh giá mức độ hài lòng với các khía cạnh khác nhau của các khách sạn, từ đó phát hiện ra cảm xúc tiêu cực trong các đánh giá tích cực, điều mà các nghiên cứu trước đây ít khi chú ý đến. Điều này làm nổi bật phương pháp mới và cung cấp cái nhìn sâu sắc hơn vào sự đánh giá hài lòng của khách hàng với dịch vụ khách sạn. Nghiên cứu [33] "Ứng dụng học máy trong ngành khách sạn"(2020) của E. Alotaibi là một bước tiến quan trọng trong việc hiểu và áp dụng công nghệ học máy vào lĩnh vực khách sạn lưu trú. Trong một thời đại đầy khó khăn và biến động, ngành du lịch và lưu trú đang phải đối mặt với những thách thức lớn do sự phát triển nhanh chóng của công nghệ. Đây là lý do vì sao việc sử dụng học máy để cải thiện hiệu suất và tối ưu hóa các quy trình trong ngành trở nên cực kỳ cần thiết. Từ việc phân tích các dữ liệu đặt phòng đến dự đoán nhu cầu và xu hướng thị trường, học máy đóng vai trò quan trọng trong việc giúp các khách sạn đưa ra quyết định chiến lược. Nghiên cứu này đã rõ ràng chỉ ra rằng các thuật toán học máy không chỉ hiệu quả hơn trong dự báo, mà còn giúp tăng cường hiệu quả tài chính và hoạt động kinh doanh. Không chỉ giới hạn trong phạm vi nghiên cứu, mà ứng dụng của học máy trong ngành khách sạn còn có thể mở ra cơ hội mới cho các quốc gia và doanh nghiệp trong việc tối ưu hóa các quy trình và cung cấp trải nghiệm tốt hơn cho khách hàng. Tuy nhiên, điều này cũng đặt ra một thách thức mới: làm sao để triển khai và sử dụng học máy một cách hiệu quả nhất. Với sự thú vị và tính ứng dụng cao, nghiên cứu [33] của E.Alotaibi là một bước tiến quan trọng trong việc khám phá và tận dụng tiềm năng của học máy trong ngành khách sạn, đồng thời đặt ra cơ sở cho những nghiên cứu và ứng dụng tiếp theo trong tương lai. Không để E.Alotaibi chờ đợi lâu, năm 2022 hàng loạt các nghiên cứu ứng dụng học máy để dự đoán huỷ phòng của khách sạn hay dự đoán sự thay đổi giá vé máy bay theo thời gian[22] đều sử dụng các mô hình máy học để phân tích và đưa ra dự báo. Đặt phòng trực tuyến có thể nói là bước đột phá mới nhất trong ngành khách sạn, nhưng khi nói đến việc hủy đặt phòng, nó có tác động tiêu cực đến ngành khách sạn dịch vụ lưu trú. Để làm giảm tác động tiêu cực của việc huỷ dặt phòng và dự đoán số lượng hủy đặt phòng, Pujo Hari Saputro, H. Nanang đã thực hiện nghiên cứu “Phân tích dữ liệu khám phá & Dự đoán việc hủy đặt phòng trên bộ dữ liệu nhu cầu đặt phòng khách sạn” (2022) [4] và phát triển mô hình dự đoán hủy đặt phòng bằng cách sử dụng các thuật toán có thể giải thích bằng máy học cho các khách sạn. Cả hai mô hình đều sử dụng Random Forest và Extra Tree Classifier có tỷ lệ chính xác cao nhất, mặt khác Random Forest có tỷ lệ thu hồi cao nhất, mô hình này dự đoán chinh xác 79% các quan sát thực tế. Những kết quả này chứng minh rằng có thể dự đoán việc hủy đặt phòng với độ chính xác cao, có thể giúp chủ khách sạn hoặc người quản lý khách sạn dự đoán dự đoán tốt hơn, cải thiện quy định hủy bỏ và tạo ra các chiến thuật mới trong kinh doanh. Bên cạnh đó, có nghiên cứu “So sánh và phân tích các mô hình học máy để dự đoán việc hủy đặt phòng khách sạn” [34] của 4 tác giả Yiying Chen, Chuhan Ding, Hanjie Ye, Yuchen Zhou sử dụng bộ dữ liệu thông tin đặt phòng từ cả hai loại khách sạn ( khách sạn resort và khách sạn bình dân) ở Bồ Đào Nha cùng với bộ thông tin tương ứng về khách hàng để dự đoán khả năng hủy đặt phòng của khách hàng. Bài nghiên cứu trình bày ba phương pháp dự đoán khác nhau bao gồm hồi quy logistic, k -Nearest Neighbor (k - NN) và CatBoost, kết quả nghiên cứu chỉ ra rằng CatBoost là phương pháp phù hợp nhất cho mục đích này. CatBoost được chọn vì hiệu quả, độ chính xác cao và chi phí thấp hơn so với các phương pháp khác. Kết quả bài nghiên cứu này tạo cơ sở cho việc quản lý doanh thu và tài nguyên trong ngành khách sạn trong tương lai.

Tóm lại, nghiên cứu về ứng dụng học máy trong ngành khách sạn đã đem lại cái nhìn sâu rộng về tiềm năng và ảnh hưởng của công nghệ này trong lĩnh vực du lịch và lưu trú. Những khám phá trong nghiên cứu này cung cấp những hướng đi mới, từ việc tối ưu hóa các quy trình nội bộ của khách sạn đến việc cung cấp trải nghiệm tốt hơn cho khách hàng. Việc áp dụng học máy không chỉ giúp nâng cao hiệu suất và lợi ích kinh tế cho các doanh nghiệp trong ngành, mà còn mang lại sự tiện lợi và trải nghiệm tốt hơn cho người tiêu dùng. Điều này chứng tỏ rằng học máy không chỉ là một công cụ mạnh mẽ, mà còn là một yếu tố quan trọng giúp thúc đẩy sự phát triển bền vững của ngành khách sạn.