Rubinstein: Multidisciplinary Journal

Vol. 3, No. 2, June 2025
Available Online: https://jurnal.ubd.ac.id/index.php/rubin

Forecasting Tourism Demand: A Bibliometric Review of Trends, Methodologies, and Big Data Integration (2015-2024)

Aryadewa Satyagraha[1)*], Yusuf Kurnia[2)]
[1)2)]Buddhi Dharma University
Jl. Imam Bonjol No. 41, Karawaci Ilir, Tangerang, Banten. Indonesia
[1)]arya.ds88@gmail.com
[2)]yusuf.kurnia@ubd.ac.id

Article History:

Received 24 April 2025;
Revised 2 May 2025;
Accepted 8 May 2025;
Available Online 2 June 2025

Keywords:

Tourism Demand Forecasting
Big Data
Artificial Intelligence
Deep Learning
CNN and LSTM Models

Abstract

This study aims to provide a bibliometric review of trends, methodologies, and the integration of big data in Tourism Demand forecasting from 2015 to 2024. Bibliometric analysis is conducted to map the development of literature focusing on the latest techniques in Tourism Demand forecasting, with an emphasis on the application of big data and Artificial Intelligence technologies, particularly deep learning models based on CNN and LSTM. Data cleaning was performed using OpenRefine, while keyword clustering and visualization were carried out with VOSviewer to identify key trends in this research. The analysis shows a significant surge in publications related to deep learning and big data since 2018, peaking in 2020. Deep learning models, such as CNN and LSTM, have begun to dominate Tourism Demand forecasting research due to their ability to handle non-linear patterns that traditional models cannot address. Additionally, the increased use of real-time data, such as "Google Trends" and "social media," reflects a shift towards utilizing big data in Tourism Demand forecasting. These findings provide valuable insights for practitioners and policymakers to plan policies and allocate resources in the dynamic tourism sector by integrating advanced technologies.

I. INTRODUCTION

In recent years, tourism demand forecasting has become a major focus in tourism economics and management research due to its significant impact on strategic decision-making (Laaroussi et al., 2023). Particularly in the post-COVID-19 era, research on smart tourism and sustainable cities has emerged as a prominent and growing trend (Meiyanti et al., 2023). The COVID-19 pandemic, similar to other global crises, has affected various facets of life, including business operations. The disruptions resulting from such events have interfered with business continuity worldwide and, in severe cases, have led to the collapse of enterprises (Appiah et al., 2022). As the complexity of the tourism sector increases, research in this field has experienced rapid development, particularly in terms of the predictive methods used and the data sources employed. The tourism industry has unique characteristics, where high demand fluctuations require accurate predictive strategies for resource optimization and policy planning (Mukhtar et al., 2023). One rapidly developing trend is

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

the application of Artificial Intelligence (AI) and big data, which offer more efficient approaches compared to traditional statistical-based methods (Hu et al., 2022; Makoni et al., 2023).

The increased availability of digital data, such as Google Trends, Baidu Index, and online tourist reviews, has provided significant opportunities for researchers to enhance the accuracy of tourism demand forecasting (Chen et al., 2024). (Fakhriansyah, 2023) also emphasizes that big data can help improve operational efficiency in the tourism sector by utilizing information from social media and other digital platforms to forecast demand trends. Previous studies have shown that the use of big data in forecasting models based on SARIMA, LSTM, and hybrid approaches can improve accuracy compared to conventional forecasting methods (Prayoga & Wijayanto, 2024; Wickramasinghe & Ratnasiri, 2021).

Bibliometrics is a method used to explain the process of written communication in the scientific field. This method involves counting and descriptive analysis of various aspects of communication reflected in scientific literature or publications. Its main goal is to identify the characteristics and direction of scientific communication development by utilizing quantitative data contained in those documents (Kurnia et al., 2023). To systematically bridge these gaps, this research utilizes bibliometric analysis—a method that provides a structured and quantitative framework for synthesizing academic contributions. In contrast to conventional literature reviews, bibliometric analysis allows for a transparent, data-driven exploration of knowledge development in social media marketing, making it especially effective in revealing underexplored areas and highlighting emerging directions for future research (Shaheen, 2025). Furthermore, bibliometric research has been conducted to map the development of tourism forecasting research, such as the study (Wu et al., 2024) which evaluates the evolution of forecasting research over the past two decades. However, this study has not specifically highlighted the trends (Angreni et al., 2024) in the adoption of Artificial Intelligence and big data in tourism demand forecasting, as well as the collaboration patterns among researchers contributing to the development of forecasting technologies in this field. Despite the development of various methods, significant challenges remain in the application of forecasting models, especially concerning external factors such as the COVID-19 pandemic, changes in travel policies, and data volatility (Park et al., 2021; Prilistya et al., 2021).

Recent studies have found that hybrid models such as SARIMA–CNN–LSTM can capture both linear and non-linear patterns more effectively, but they still face challenges in handling sudden changes due to external factors (Hu et al., 2022). Furthermore, machine learning-based models often experience overfitting and struggle to generalize data with high seasonal characteristics, requiring more advanced regularization techniques (Kulshrestha et al., 2020). This study aims to fill this gap by conducting a bibliometric analysis of the scientific literature focused on tourism demand forecasting based on artificial intelligence and big data. By mapping research trends, dominant methods, as well as collaboration patterns among researchers and institutions, this study is expected to provide insights into the direction of research development in this field. Additionally, a better understanding of these research trends and patterns can help optimize forecasting models and support data-driven decision-making in the tourism industry.

II. LITERATURE

Tourism demand forecasting has been an essential area of study due to its significant impact on the efficient allocation of resources and policy-making in the tourism sector. Research in this field has evolved substantially in recent years, driven by advances in Artificial Intelligence (AI), big

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

data, and machine learning techniques. Several key trends have emerged, highlighting the application of more sophisticated and data-driven models for forecasting tourism demand.

Historically, tourism demand forecasting relied heavily on statistical methods, such as ARIMA (AutoRegressive Integrated Moving Average) and SARIMA (Seasonal ARIMA), to predict future demand based on past data. However, the limitations of these traditional methods in capturing complex, non-linear patterns in the data have led to the exploration of more advanced techniques. Studies by Chen et al., (2024) and Hu et al., (2022) highlight the transition from linear forecasting models to machine learning and deep learning models, which offer better predictive accuracy for volatile and dynamic tourism markets.

The availability of big data from sources like Google Trends, social media, and online reviews has transformed tourism demand forecasting. Big data allows for real-time tracking of consumer behavior and provides deeper insights into travel trends. Research by (Wickramasinghe & Ratnasiri, 2021) and (Prayoga & Wijayanto, 2024) emphasizes how big data analytics enhances the forecasting models by incorporating various external factors such as social media sentiments, weather conditions, and geopolitical events, all of which contribute to more accurate and timely predictions.

Deep learning, particularly using Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) models, has become increasingly prevalent in tourism demand forecasting. These models have the advantage of capturing both linear and non-linear patterns in the data, making them more suitable for complex forecasting tasks Kulshrestha et al., (2020). Recent studies by Laaroussi et al., (2023) and Makoni et al., (2023) demonstrate that deep learning models are superior to traditional approaches, as they can adapt to the dynamic nature of tourism demand and handle large, unstructured datasets more efficiently. In addition to time series analysis, CNNs have also been used in tourism-related research to analyze visual data (Suwaryo et al., 2025)—such as images from social media or tourist attractions—to uncover patterns in traveler preferences and behaviors that can inform more accurate demand forecasting.

Hybrid models, such as SARIMA-CNN and SARIMA-LSTM, have gained attention due to their ability to combine the strengths of different methodologies. These models are particularly effective in capturing both short-term seasonal patterns and long-term trends, thereby improving forecasting accuracy (Hu et al., 2022). The hybrid approach has been shown to reduce overfitting and improve the generalization ability of models, especially in contexts with high variability such as tourism (Prayoga & Wijayanto, 2024).

Despite the advancements in forecasting techniques, several challenges persist. One major issue is the overfitting of machine learning models, especially when working with small datasets or data with high seasonality. As highlighted by Kulshrestha et al., (2020), addressing overfitting requires the application of regularization techniques and cross-validation to improve model generalization. Furthermore, external factors such as the COVID-19 pandemic have introduced significant disruptions, making the adaptation of forecasting models to sudden and unpredictable events a key area for future research (Prilistya et al., 2021).

In conclusion, while big data and AI models, particularly deep learning, are revolutionizing the field of tourism demand forecasting, there remain significant challenges related to data volatility, model accuracy, and the integration of external variables. Future research will likely focus on refining these models to handle real-time data more effectively and to adapt to unforeseen global disruptions.

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

III. RESEARCH METHOD

This study applies a bibliometric analysis approach to identify global trends in post-pandemic sustainable tourism research. As explained by (van Eck & Waltman, 2010), bibliometric analysis is a quantitative method used to explore publication patterns, author collaboration, institutional relationships, and dominant topics within a field of study. The analysis process is carried out using the Publish or Perish application, and the results are visualized through VOSviewer, which enables the mapping of publications, citations, author collaboration networks, as well as the identification of key trends in the research topic.

The procedure used to conduct this study consists of four stages. These stages are as follows: Data Collection, Data Cleaning, Data Visualization, Data Analysis, and Report Writing. Figure 1 illustrates how these procedures should be carried out in more detail.

Figure 1. Research Metodology

Data were obtained from the Dimensions.ai website as part of the data collection phase in the form of CSV files. The publication year range applied is from 2015 to 2024, covering a 10-year span. The literature search was limited to the period of 2015-2024 to focus the analysis on the latest developments in the field of tourism demand forecasting, reflecting the rapid changes in technology and methods. The search phrase used was: TITLE-ABSTRACT ("Tourism Forecasting" OR "Tourism Prediction" OR "Tourism Demand forecasting") AND ("Machine learning" OR "Deep learning" OR "Artificial Intelligence" OR "Big data" OR "Forecasting Models" OR "SARIMAX" OR "BiLSTM" OR "Bi-LSTM"). This search was restricted to article-type documents. Using this search technique, 122 articles were retrieved.

In the data cleaning stage, this process is carried out to ensure more accurate bibliometric and bibliographic data exploration, thus supporting better visualization and interpretation of results (Donthu et al., 2021). To enhance data consistency, all keywords in the Title and Abstract were standardized using OpenRefine. This tool plays a crucial role in detecting keyword similarities within the dataset, allowing for the standardization and grouping of terms that have variations in spelling but the same meaning. For example, terms like "forecast," "forecasting," and "forecasts" were grouped into a single standardized form, "forecasting," to avoid duplication and improve data

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

consistency. This impacts the analysis results by generating more representative keyword groupings and improving the accuracy of co-occurrence analysis and visualization.

After the refinement using OpenRefine, a Thesaurus file was manually created to address keyword duplicates that might not have been detected in the previous process. The grouping process in the Thesaurus was done by replacing semantically related words with a single, more representative term. For example, the terms "demand" and "demand forecasting" were standardized to "demand forecasting" to make them more specific and consistent. This Thesaurus file was then applied in VOSViewer to ensure that all keywords were well-organized and free of duplicates that could interfere with the accuracy of further analysis.

The Data Visualization stage was conducted by building a network map based on keyword co-occurrence analysis using VOSviewer. The goal of this stage is to identify the relationships between keywords in the analyzed documents and explore the conceptual relationships within this field of study. In this process, a co-occurrence threshold of 10 was set, resulting in 51 keywords from a total of 2,842 available keywords. The co-occurrence value of 10 was chosen based on previous research as a reference (Viana-Lora & Nel-lo-Andreu, 2022). Out of the total 51 keywords, only 60%, or 31 keywords, were used as the threshold. In bibliometric analysis, the 60% value is the default setting in VOSviewer and has been considered a best practice in similar research (Klarin, 2024).

The final stage of this study includes data analysis and report writing. The bibliometric data presented in the data visualization stage is then evaluated and interpreted based on the articles included in the study. The interpretation of the results is based on the bibliometric data visualization carried out in the previous stage, including an analysis of the network map diagram built from the co-occurrence of keywords in the articles. The understanding, discussion, and conclusions from this study are then summarized in a report.

IV. RESULTS

This section presents the results of the bibliometric analysis of research on tourism demand forecasting based on artificial intelligence and big data. The analysis was conducted to identify publication trends over the past five years, the distribution of publications by country, and the forecasting methods most frequently used in this research. Additionally, the analysis explores how the use of big data, such as Google Trends, Baidu Index, and online tourist reviews, has contributed to the development of forecasting methodologies in the academic literature.

The publication trend analysis shows that research on tourism demand forecasting began to increase in 2016, with the number of publications steadily rising each year. There were no publications in 2015, indicating that the topic had not received much attention at the beginning of the analysis period. A significant surge occurred after 2018, suggesting that the adoption of machine learning and big data methods in tourism forecasting began to develop and attract broader academic interest. The peak in publications occurred in 2020 and beyond, reflecting the growing need for more advanced predictive models in the tourism sector. This trend indicates that research in this field has become increasingly relevant, in line with technological advancements and the growing availability of digital data used in tourism demand forecasting. Additionally, external phenomena such as the COVID-19 pandemic in 2020 also contributed to the surge in publications, as this global crisis prompted research on forecasting changes in tourism trends and the industry's response to the uncertainties it caused. Thus, external factors like the pandemic have been significant triggers in the development of research in this sector, influencing the direction and focus of the topics studied.

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

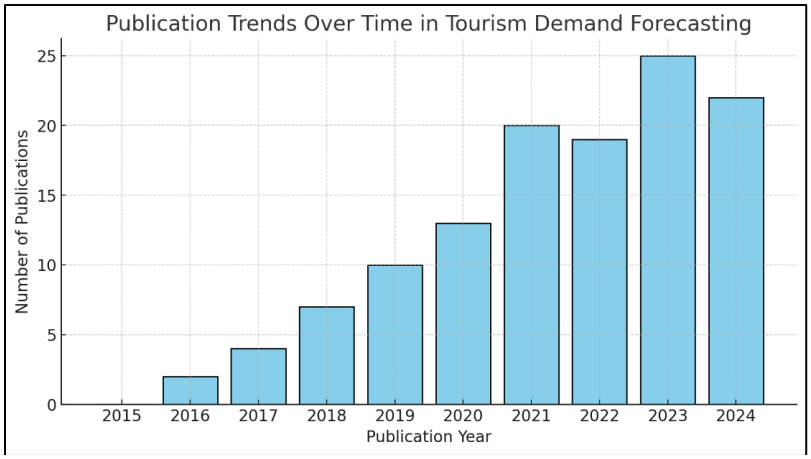

Figure 2. Publication Trends in Tourism Demand forecasting (2015-2024)

The network map diagram based on keyword co-occurrence in the articles was created using VOSviewer. Keyword co-occurrence refers to the frequency with which a keyword appears across various publications that are analyzed. The number of occurrences considered as a threshold varies depending on the research objectives. The lower the threshold used, the more keywords are included in the analysis, and vice versa.

In this analysis, there are 2,842 unique keywords from all the collected articles. The minimum co-occurrence threshold was set to 10 occurrences, so only 51 keywords met the criteria. Out of the total keywords included in the analysis, only 60%, or approximately 31 keywords, were used as the threshold to construct the network map. The weight of an item in the network map determines the size of the label and the circle in the diagram, where the higher the frequency of co-occurrence of a keyword, the larger the label and circle size. The colors in the network map indicate research clusters, where terms grouped within a single cluster are more closely related to each other than to terms outside the cluster.

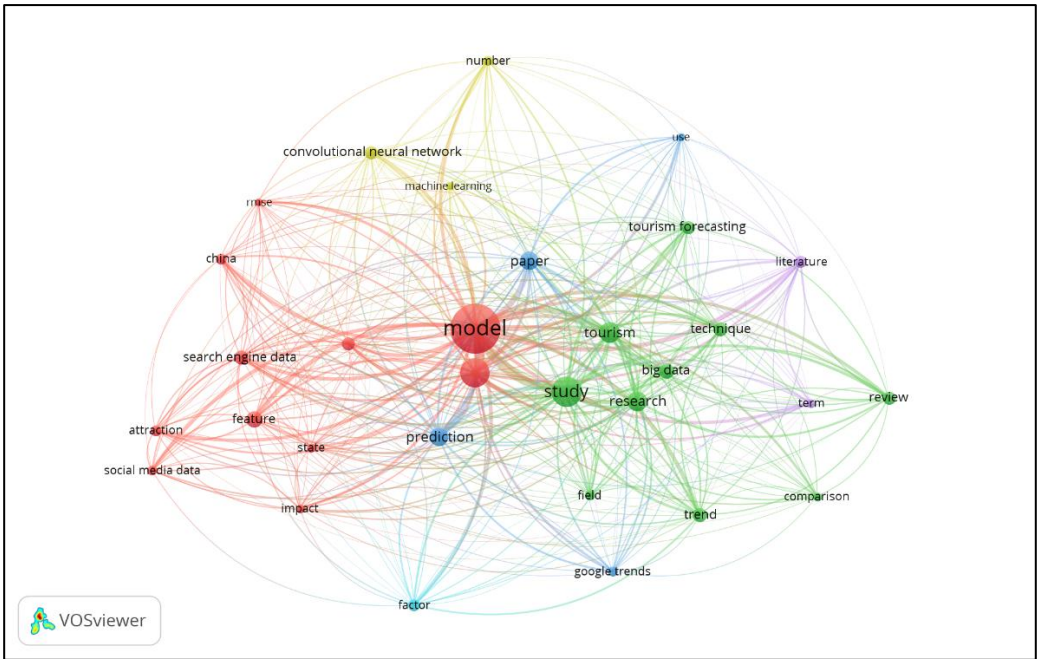

Figure 3. Network Visualization

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

Each color shown in Figure 3 represents a different cluster in tourism demand forecasting research. Clustering was performed based on the keyword co-occurrence found in the analyzed articles. This indicates that elements within the same cluster are more closely related to each other than to elements outside the cluster. Therefore, it can be concluded that elements within the same cluster likely share similar research focuses. The details of the keywords in each cluster are summarized in Table 1.

Keywords such as "demand forecasting" and "big data" also have high link strength, indicating that the developed forecasting models are often associated with tourism demand analysis and the performance evaluation techniques used. The presence of the term "Google Trends" with a relatively strong connection also suggests that online search data and social media play a key role in the effectiveness of tourism demand forecasting systems. Figure 4 displays the 10 keywords with the highest co-occurrence values and total link strength, representing the interconnections between the main topics in this research.

Table 1. Keyword Clustering in Tourism Demand Forecasting

Cluster	Keywords	Issue
1 (11 Keywords)	attraction, china, deep learning, model, demand forecasting, Feature, impact, model, rmse, search engine, social media data, state	This cluster focuses on deep learning-based forecasting methods, tourism-related data, and the influence of external factors in forecasting.
2 (10 Keywords)	big data, comparison, field, research, review, study, technique, tourism, tourism forcasting, trend	This cluster extensively discusses the comparison of forecasting techniques and the use of big data in tourism demand forecasting.
3 (4 Keywords)	google trends, paper, prediction use	This cluster focuses on the use of Google Trends and online search data in predicting tourism demand.
4 (3Keywords)	convolutional neural network, machine learning, number	This cluster highlights the application of Convolutional Neural Networks (CNN) and machine learning in forecasting models.
5 (2 Keywords)	literature, term	This cluster focuses on literature review and the development of relevant terms in tourism demand forecasting research.
6 (1 Keyword)	factor	This cluster focuses on external variables or factors that influence tourism demand.

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

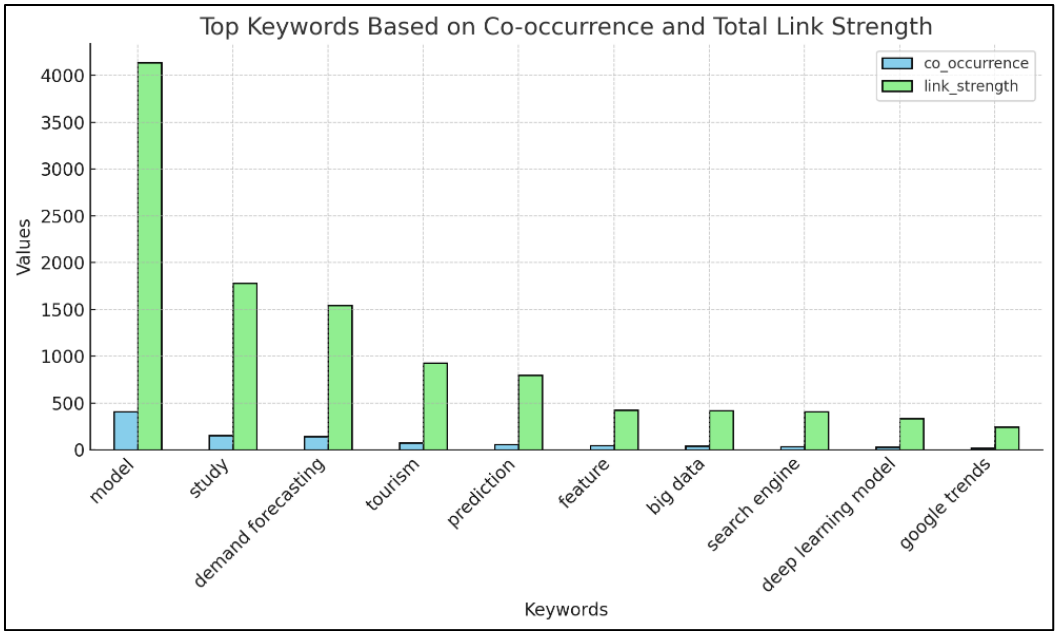

Figure 4. Network Visualization

The Overlay Visualization is used to identify the latest research topics in the field of Tourism Demand Forecasting. The gradient colors on the diagram represent the publication years, ranging from older to newer. Darker colors, such as purple and blue, represent older topics, while lighter colors, such as green and yellow, indicate more recent topics. This helps to identify how specific topics have developed and shifted over time, reflecting the adoption of new technologies such as deep learning and big data in tourism demand forecasting.

In Figure 5, it can be seen that topics such as "demand forecasting," "big data," "social media," "tourism," "cnn," and "search engine" fall within the green color spectrum, indicating that these topics emerged earlier and remain a primary focus in research related to tourism demand forecasting. This reflects the increasing use of internet-based data and the evolving forecasting techniques. Topics such as "deep learning," "Google Trends," and "attraction," which appear in the yellow color spectrum, indicate that these are more recent topics that have gained more attention in recent research. The growing focus on deep learning, the use of data from Google Trends, and tourist attraction data highlights that new technologies and the utilization of real-time data are becoming increasingly important in predicting tourist demand. This reflects a shift towards more complex and advanced forecasting methods, providing more accurate and relevant results for the ever-evolving tourism industry.

The keyword "Feature" shows a transition from green to yellow, indicating that this topic has evolved over time, with research increasingly focusing on feature optimization in forecasting models using big data and machine learning. This topic reflects the evolution of methodologies in tourism demand forecasting research, where feature optimization has become crucial for enhancing the performance of prediction models. Meanwhile, "comparison," located in the purple spectrum, indicates that this is a more recent topic in methodology analysis, focusing on comparing forecasting techniques used in previous research. Thus, this Overlay Visualization demonstrates a clear shift in research focus from traditional forecasting methods to more advanced approaches, such as deep learning and big data, which are increasingly dominating the field of Tourism Demand forecasting.

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

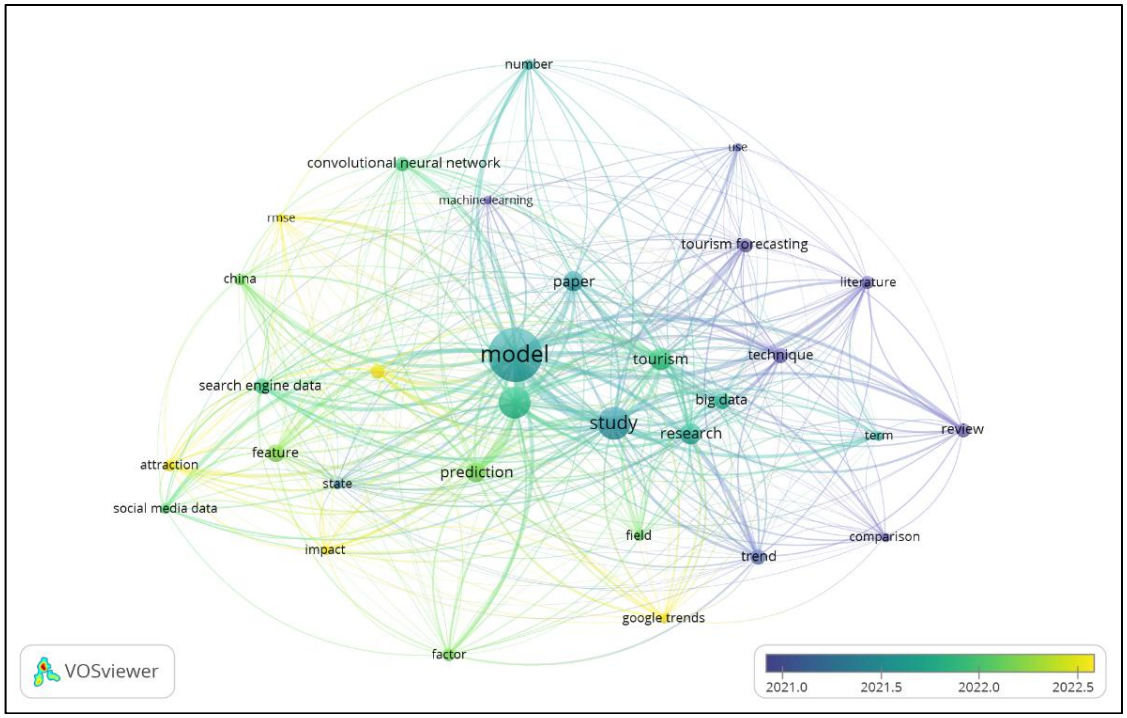

Figure 5. Overlay Visualization

The bibliometric analysis results reveal a clear trend in the increasingly developing research on tourism demand forecasting. With the growing adoption of artificial intelligence and big data technologies, publications related to this topic began showing a significant surge since 2018, peaking in 2020. This reflects the rising need for more advanced forecasting models to address the complex demand fluctuations in the tourism sector. Existing research has increasingly adopted deep learning and big data-based methods, which have proven to be more efficient in improving forecasting accuracy compared to conventional methods such as SARIMA and ARIMA.

In the network map analysis, it is evident that keywords such as "demand forecasting" and "big data" have a very strong connection, indicating that these two topics are key components in tourism demand forecasting. The clustering of these keywords also reveals that new technologies, such as deep learning, particularly CNN and LSTM-based models, are beginning to become a primary focus in tourism demand forecasting research. This indicates that research is increasingly shifting towards the application of models capable of capturing non-linear and more complex patterns that cannot be accommodated by traditional models.

Furthermore, the Overlay Visualization analysis shows that new topics, such as the use of Google Trends and social media data to enhance forecasting accuracy, have become a primary focus in recent research. The increased use of real-time data, as indicated by keywords like "Google Trends" and "social media," reflects a shift towards utilizing more dynamic and relevant data sources that align with the ever-changing market conditions. The use of internet-based data like this is becoming increasingly important in anticipating rapid and profound demand fluctuations.

However, despite the significant potential of new technologies to improve accuracy, challenges remain, particularly in addressing issues of overfitting in machine learning models, as well as challenges posed by seasonal variability and external factors such as the COVID-19 pandemic. This study found that although hybrid models like SARIMA-CNN-LSTM are more effective in handling both linear and non-linear patterns, the constraints in adapting to sudden changes due to

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University

external factors remain an unresolved issue. Overall, this study indicates that tourism demand forecasting is increasingly relying on advanced methods and big data to enhance prediction accuracy in the ever-evolving tourism industry. However, further research is needed to refine the application of these techniques, particularly in overcoming external challenges that can affect model accuracy.

V. CONCLUSION

This study successfully analyzes research trends in tourism demand forecasting using bibliometric methods to map the development of topics, dominant methods, and researcher collaboration. The results of the analysis show that tourism demand forecasting has been evolving with the adoption of artificial intelligence (AI) and big data techniques, as well as the increased use of real-time data such as Google Trends and social media. The publication trend indicates a significant rise since 2018, peaking in 2020, reflecting the growing need for more accurate forecasting models to address fluctuations in tourism demand.

Keyword clustering reveals that the main topics in this research are deep learning, big data, and forecasting, with an emphasis on model performance evaluation techniques. The Overlay Visualization shows a shift in research focus towards more advanced methods, particularly the use of deep learning and big data, which have now become integral parts of tourism demand forecasting. Overall, this study confirms that tourism demand forecasting is increasingly reliant on advanced methods and big data to enhance prediction accuracy in the tourism industry.

However, despite these advancements, several limitations are present in the current body of research. A primary challenge is the difficulty in adapting forecasting models to account for sudden, external disruptions, such as the COVID-19 pandemic, which can cause abrupt shifts in tourism demand patterns. Additionally, issues related to overfitting in machine learning models and their ability to generalize across diverse datasets remain a concern. Future studies could explore the integration of more robust regularization techniques and more diverse data sources to mitigate these challenges.

For future researchers, it is recommended to further investigate the application of hybrid models that combine traditional forecasting techniques with deep learning and big data methods to address both linear and non-linear patterns more effectively. Moreover, research could focus on refining the use of real-time data, such as social media and online reviews, to improve the responsiveness and accuracy of forecasting models. Policymakers and practitioners in the tourism sector can benefit from these advancements by adopting these advanced forecasting techniques to better plan for demand fluctuations and optimize resource allocation in a rapidly changing global environment.

In conclusion, while significant strides have been made in the use of AI and big data for tourism demand forecasting, future work should focus on addressing the remaining challenges and exploring new methodologies to increase the robustness and adaptability of these models in the face of evolving global conditions.

REFERENCES

Angreni, T., Hanitha, V., Oktari, Y., & Novianti, R. (2024). Analisis Bibliometrik: Perilaku Konsumen Generasi Y (Milenial) dan Generasi Z (Zoomer). *Rubinstein: Junrl Multidisiplin*, *3*(1), 63–78. https://doi.org/10.31253/rubin.v3i1.3428

Appiah, K. O., Addai, B., Ekuban, W., Aidoo, S. O., & Amankwah-Amoah, J. (2022). Management research and the impact of COVID-19 on performance: a bibliometric review

and suggestions for future research. *Future Business Journal*, *8*(1), 1–20. https://doi.org/10.1186/s43093-022-00149-1

Chen, J., Ying, Z., Zhang, C., & Balezentis, T. (2024). Forecasting tourism demand with search engine data: A hybrid CNN-BiLSTM model based on Boruta feature selection. *Information Processing and Management*, *61*(3). https://doi.org/10.1016/j.ipm.2024.103699

Fakhriansyah, R. (2023). *IMPLEMENTASI BIG DATA DALAM INDUSTRI TRAVEL DAN PARIWISATA*. https://doi.org/10.13140/RG.2.2.30505.77928

Hu, M., Li, H., Song, H., Li, X., & Law, R. (2022). Tourism demand forecasting using tourist-generated online review data. *Tourism Management*, *90*. https://doi.org/10.1016/j.tourman.2022.104490

Klarin, A. (2024). How to conduct a bibliometric content analysis: Guidelines and contributions of content co-occurrence or co-word literature reviews. *International Journal of Consumer Studies*, *48*(2). https://doi.org/10.1111/ijcs.13031

Kulshrestha, A., Krishnaswamy, V., & Sharma, M. (2020). Bayesian BILSTM approach for tourism demand forecasting. *Annals of Tourism Research*, *83*. https://doi.org/10.1016/j.annals.2020.102925

Kurnia, Y., Rimbawan Oprasto, R., & Oktavianus Gunawan, A. (2023). Analisis Bibliometrik: Jaringan IoT dan Protokol Komunikasi Nirkabel. *Rubinstein: Jurnal Multidisiplin*, *2*(1), 1–12. https://doi.org/10.31253/rubin.v2i1.2295

Laaroussi, H., Guerouate, F., & Sbihi, M. (2023). A novel hybrid deep learning approach for tourism demand forecasting. *International Journal of Electrical and Computer Engineering*, *13*(2), 1989–1996. https://doi.org/10.11591/ijece.v13i2.pp1989-1996

Makoni, T., Mazuruse, G., & Nyagadza, B. (2023). International tourist arrivals modelling and forecasting: A case of Zimbabwe. *Sustainable Technology and Entrepreneurship*, *2*(1). https://doi.org/10.1016/j.stae.2022.100027

Meiyanti, R., Dhika, H., Fajriyah, R., & Alam, N. I. I. (2023). Application Integration for Sustainability Smart Tourism Model in Indonesia. *Tech-E*, *6*(2), 1–8.

Mukhtar, H., Remli, M. A., Wong, K. N. S. W. S., & Mohamad, M. S. (2023). Deep Learning With Processing Algorithms for Forecasting Tourist Arrivals. *TEM Journal*, *12*(3), 1742–1753. https://doi.org/10.18421/TEM123-57

Park, E., Park, J., & Hu, M. (2021). Tourism demand forecasting with online news data mining. *Annals of Tourism Research*, *90*. https://doi.org/10.1016/j.annals.2021.103273

Prayoga, S. W., & Wijayanto, A. W. (2024). *Optimasi Prediksi Jumlah Wisatawan Nusantara ke Provinsi Bali Melalui Big Data Analytics dengan Integrasi Google Trends dan Tingkat Penghunian Kamar Hotel*. Prayoga & Wijayato.

Prilistya, S. K., Permanasari, A. E., & Fauziati, S. (2021, August 23). The Effect of the COVID-19 Pandemic and Google Trends on the Forecasting of International Tourist Arrivals in Indonesia. *TENSYMP 2021 - 2021 IEEE Region 10 Symposium*. https://doi.org/10.1109/TENSYMP52854.2021.9550838

Shaheen, H. (2025). Social Media Marketing: A Bibliometric Analysis. *Future Business Journal*, *11*(41), 1–26. https://doi.org/10.1186/s43093-025-00465-2

Suwaryo, N., Koniasari, & Basri, A. (2025). Tongue Detection For Identification Of Syndrome Diagnosis In Heart Disease Using Convolutional Neural Network. *Tech-E*, *8*(2), 140–149. https://doi.org/10.31253/te.v8i2.3285

Viana-Lora, A., & Nel-lo-Andreu, M. G. (2022). Bibliometric analysis of trends in COVID-19 and tourism. *Humanities and Social Sciences Communications*, *9*(1). https://doi.org/10.1057/s41599-022-01194-5

Wickramasinghe, K., & Ratnasiri, S. (2021). The role of disaggregated search data in improving tourism forecasts: Evidence from Sri Lanka. *Current Issues in Tourism*, *24*(19), 2740–2754. https://doi.org/10.1080/13683500.2020.1849049

Wu, X., Shi, J., & Xiong, H. (2024). Tourism forecasting research: a bibliometric visualization review (1999–2022). *Tourism Review*, *79*(2), 465–486. https://doi.org/10.1108/TR-03-2023-0169

ISSN 2985-4512 (online) 2985-4520 (print) © The Authors. DOI: 10.31253/rubin.v3i2.3783
Published by Buddhi Dharma University