Journal of Applied Engineering and Technological Science
Vol 6(1) 2024: 21-47

MOBILE TOURISM RESEARCH AND PRACTICES: A COMPREHENSIVE BIBLIOMETRIC EXPLORATION AND FUTURE STUDY DIRECTION

Syaifullah[1], Shamsul Arrieya Ariffin[2*], Norhisham Mohamad Nordin[3]
Computer Science and Digital Technology Department, Faculty of Computing and Meta-Technology (META), Sultan Idris Education University, Malaysia[123]
Information System Department, Universitas Islam Negeri Sultan Syarif Kasim Riau, Indonesia[1]
p20221001674@siswa.upsi.edu.my[1], shamsul@meta.upsi.edu.my[2*],
norhisham@meta.upsi.edu.my[3]

Received: 03 May 2024, Revised: 11 July 2024, Accepted: 23 July 2024
**Corresponding Author*

ABSTRACT
Even though mobile tourism analysis is developing, there is still a lack of literature regarding its formation patterns which makes the picture of its evolution incomplete. The evaluation in this study was carried out in general by emphasizing the evolution of exploratory analysis on the theme of "mobile tourism". This article aims to determine the increasing development of mobile tourism in terms of the number of publications, journals, authors, and the most relevant citations. Then analyze the itinerant tourism distribution map based on grouping, with merging, joint citation, collaboration network analysis, and joint word assessment, and interpret the conceptual structure of the country's co-occurrence and collaboration network regarding its visual representation. The method used is a descriptive approach through bibliometric analysis. An in-depth search of the Scopus database and RStudio software was conducted, screening, analyzing, and interpreting 752 relevant articles from 2014 to 2023. The findings show that an increase in the development of mobile tourism is identified from an increase in the number of publications, the most relevant journals, and authors, as well as the increasingly diverse origins of the authors even though the number of annual average citations has decreased slightly. Recommended six themes in mobile tourism studies, namely Tourism, Technology Acceptance Models (TAM), Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism, and produced Technology Acceptance Models and Tourism as important studies with great prospects in the future.
Keywords : *Bibliometric Analysis, Mobile Tourism, R Package, Technology Acceptance Models (TAM), Tourism.*

1. Introduction

New platforms for conducting business have recently been evolving with the evolution of mobile and wireless networks, leading to a phenomenon known as m-commerce (mobile commerce). This phenomenon connects wirelessly in a mobile environment through portable smartphone devices. For transaction processing, information retrieval, and user task performance, it also uses wireless technology, specifically the mobile internet and portable devices (Varshney, 2003). According to (Biloš & Kelić, 2012), mobile Tourism was defined as a wireless marketing activity enabling the purchase of tourism-related products via smartphones (mobile Social Commerce) (Sun & Xu, 2019), social media (Li, 2019), digital exploration (Adeola & Evans, 2019), online transactions (Saprikis & Avlogiaris, 2021), as well as intelligent, hybrid, and aware of context (Afsahhosseini & Al-Mulla, 2021).

Furthermore, m-tourism expands opportunities for the tourism industry through tour guide services, such as smartphones, tablets, and personal digital assistants (PDAs) (Kenteris et al., 2009). In this case, various mobile software is designed to run on wireless devices (Wang et al., 2013), such as travel applications (Zhou et al., 2022), augmented reality (Tom Dieck & Jung, 2018), Virtual Reality at Festivals (Dieck et al., 2021), tourism applications (Palos-Sanchez et al., 2021), cellular tools (Martins & Casais, 2019), and smart technology development (Neuhofer et al., 2015). For m-tourism transactions using wireless networks and mobile devices (Wang et al., 2013), hospitality technology can emphasize cellular computation (Agustinus Borgy Waluyo & Ling Tan, 2021) or financial services (Singh et al., 2020). As additional benefits, this phenomenon also provides many consumers with convenience, positioning, destination-specific data and direct access to related information, personalized

service, purchasing decisions based on relevant content, and user profile management (Gavalas & Kenteris, 2011).

Although several previous reports have demonstrated the development of understanding of certain categories of mobile tourism, there is still a lack of literature on its evolution, resulting in an incomplete exhibition of improvements. This explains that many scholars previously conducted special discussions on the theme of mobile tourism or used a relational approach/the influence of technology and applications, such as (1) e-tourism (Cristobal-Fransi et al., 2017; Femenia-Serra et al., 2019; Navío-Marco et al., 2018), (2) ICT (Ali & Frew, 2014; Hamaguchi, 2021; Jarrar, 2020; Naramski, 2020), (3) Smart tourism (Daries et al., 2018; Ghaleb et al., 2021; Santamaria-Granados et al., 2021; Wong, 2020; Zhou et al., 2021), and (4) Mobile Technology (Jeon et al., 2019; Saravanan & Sadhu Ramakrishnan, 2016; Vu et al., 2019), From this context, knowledge about thematic development and expansion patterns of tourism analysis in mobile tourism is still difficult despite the growing analytical awareness. Some academics and industry practitioners have difficulty reassessing the evolution of mobile tourism, fashionable and popular themes, and future important topics over a certain period. This shows that the analysis of mobile tourism cannot be explained comprehensively on general themes, and specific studies cannot be produced on mobile tourism.

To identify concerns and variables related to mobile technology in the tourism industry and explain the function of mobile technology in tourism. Moving forward, it is important to examine the formation patterns of mobile tourism to provide a comprehensive understanding of its development (Kim & Kim, 2017a). Therefore, this study aims to synthesize the mobile tourism literature from 2014 to 2023 using bibliometric analysis, leading to accumulating field knowledge and providing potential analytical directions. It also aims to contribute to the academic literature by analyzing mobile tourism analysis's knowledge structure and evolution over the previous decades.

In this research, expanding the scope of technology articles is one of the most significant contributions, and this analysis is the first attempt to specifically examine the general theme of reviewing and exploring mobile tourism. As many reports reportedly describe the broadening of understanding of certain categories of itinerant tourism (Florido-Benítez, 2022; Johnson & Samakovlis, 2019; Kim & So, 2022; Knani et al., 2022; Molina-Collado et al., 2022; Ndou et al., 2022), Therefore, in this research study a more inclusive and general document selection strategy is being implemented. This strategy differs from the types previously used in the analysis of mobile tourism or specific technologies and application domains. Furthermore, this research is not limited to an exploration of wireless or any specific theme, and it provides a comprehensive overview of the evolution of mobile tourism and contemporary trends in the tourism industry. To address existing literature gaps, this research aims to carry out the following objectives: (1) Identify the growing development of analysis in mobile tourism, regarding the increase in the number of publications, the most relevant journals, and citations. (2) Analyze the distribution map of mobile tourism analysis based on clustering, co-cite (papers, authors, and sources), collaboration (authors, countries), and word analysis. (3) Interpret the collaboration of countries and the conceptual structure of co-occurrence networks regarding their visual representation.

By using bibliometric analysis, it is hoped that the findings in the research study can determine global trends, analyze distribution maps, and interpret mobile tourism. A holistic approach through thematic maps also produces four analysis clusters, namely motor, basic, emerging or declining, and niche themes. Next, these themes are clarified and differentiated based on their centrality and density in one of the quadrants using thematic mapping. Based on the level of importance (centrality) and compactness (density) of the identified themes, potential areas for future analysis (Basic Themes) resulted in six related categories, namely Tourism, Technology Acceptance Models, Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism.

The results obtained are expected to contribute to an analytical perspective of popular and significant mobile tourism during a certain period, regarding the most frequently used keywords and Word Cloud. It is also hoped that research experts will periodically adjust their attention to mobile tourism analyzes and themes that are not included in other bibliometric papers. From

this context, the following themes are suggested, "Tourism, Technology Acceptance Models, Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism". In this case, two very important and prospective themes are especially prioritized for future relevant analysis, namely “Tourism” and “Technology acceptance model”.

2. Literature Review

2.1 Mobile Tourism

Mobile tourism (Biloš & Kelić, 2012) refers to mobile marketing activities that facilitate the purchase of tourism-related products through mobile devices. Mobile tourism applies technology to tourism-related endeavors (Vasant & M., 2017). Utilizing mobile devices such as smartphones, tablets, and wearables to access tourism-related information and services (Chen et al., 2020; Vasant & M., 2017). Mobile tourism can also be defined as mobile marketing activities that facilitate consumers' purchasing of tourism-related products via mobile devices (Vinodan & Meera, 2020).

The role of mobile technology in tourism is to provide information related to the tourist's context and to promote overall economic and social benefits (Kim & Kim, 2017a). In addition, mobile technology plays a greater role in the travel experience, and more research in the travel field is being conducted (Chen et al., 2020). On the other hand, E-tourism includes the digitalization of processes and value chains in the tourism industry, including e-commerce and the use of ICT to optimize the efficiency and effectiveness of tourism products and companies (Buhalis & Deimezi, 2004). Biloš & Kelić (2012) define mobile tourism as mobile marketing initiatives that enable purchasing tourism-related products via mobile devices.

The use of mobile technology related to tourism is referred to as mobile tourism (Vasant & M., 2017). Individuals can gain access to tourism-related information and services through mobile devices, including smartphones, tablets, and wearable devices (Chen et al., 2020; Vasant & M., 2017). Mobile tourism, as defined by (Vinodan & Meera, 2020), also includes mobile marketing activities that can enable consumers to obtain tourism-related products via their mobile devices. Mobile technology plays an important role in the tourism industry by disseminating context-specific information and advancing economic and social benefits on a broader scale (Kim & Kim, 2017a). Meanwhile, e-tourism is related to the transformation of value chains and operational processes in the tourism sector into a digital format, which combines e-commerce and information and communication technology (ICT) to increase the productivity and progress of tourism companies and products (Buhalis & Deimezi, 2004).

2.2 Bibliometrics

It is challenging to keep up with the vast quantity of published research due to the escalating volume of academic publications. Furthermore, the division of efforts towards empirical contributions has led to the fragmentation of research streams, thereby posing challenges in the acquisition of knowledge from prior research articles (Briner & Denyer, 2012). The utilisation of extant knowledge, the synthesis of previous research findings, the advancement of research, and the provision of evidence-based insights into professional judgement and expertise have all contributed to the growing importance of literature reviews (Briner & Denyer, 2012). However, prior scholarly investigations in the domain of information technology in the hotel industry have often concentrated on particular subjects, platforms, or commercial implementations, including smart tourism, eTourism, social media, and hotels (Xiang et al., 2021). Conversely, certain authors advocate for more comprehensive studies that extend beyond these limited scopes.

Prominent databases and software applications, including Gephi, Leximancer, VOSviewer, Scopus, and Web of Science, have contributed to the rise in prominence of bibliometric analysis within the realm of business research. Scholars can utilize these tools in bibliometrics, to identify emerging trends, collaboration patterns, and intellectual frameworks in a particular field as documented in the literature (Donthu et al., 2020, 2021; Verma, 2020). However, in business research studies, bibliometric analysis often has not reached its full

potential due to the scarcity of data and techniques that allow limited understanding of the field (e.g., analytical performance is still lacking in mapping science) (Brown et al., 2020).

To overcome these challenges, automated workflows by integrating specialized software have emerged as a solution for bibliometric analysis, (Guler et al., 2016) This procedure allows for multi-step analysis through the utilization of various software. This is especially useful for researchers who do not have advanced programming skills. R is a programming language used for statistical computing and graphics. This program provides a variety of statistical and graphical methods. The ability to automate analysis and develop new functionality. Through integration with other open-source statistical R packages, it ensures updates and makes it suitable for bibliometrics in dynamic domains (R Core Team., 2016).

2.3 Mobile Tourism Implementation Using Bibliometrics

Based on a bibliometric literature review on mobile tourism which refers to a thematic map approach by looking at density and centrality, we can identify four grouping themes that emerge in mobile tourism. Neff & Corley (2009) stated that the degree of cohesion exhibited by the clusters' represented motifs is denoted by density. As stated by (Della Corte et al., 2019), the extent of motif development is regulated by density. Neff & Corley (2009) Define centrality as the frequency of keyword usage by researchers in a given discipline that pertains to a cluster. Therefore, the significance of the subject is communicated through centrality (Della Corte et al., 2019). Themes are classified into four distinct categories and displayed on a two-dimensional map according to two dimensions—centrality and density—which are motor, fundamental, emerging/descending, and special themes (Cobo et al., 2011a). The term "motor theme" pertains to a research topic that possesses significant centrality and high density. "Basic theme" denotes an essential research topic that has not yet reached its full development. "Emerging/declining themes" denote topics that have undergone weak and marginal development. Lastly, "special themes" pertain to well-established themes whose significance is not excessively great (Cobo et al., 2011a).

2.4 Related Secondary Research

This research is significant because it bridges the divide between prior studies that employed a bibliometric methodology to examine the impact of technology and applications or conducted specific discussions on the subject of mobile tourism or utilized a relational approach. Chen et al. (2020) conducted research on the emergence of the fifth iteration of mobile communication technology. The influence of mobile technology on tourism. Existing research on mobile technology in tourism is still limited in terms of bibliometrics and visual analysis. Research aim: to assess the current state of research and possible future directions. Visual bibliometric analysis utilizing the Cite Space application. Eighty-three papers were examined, all from the Web of Science Core Collection. Research trends, domains, leading journals, author/institution/country collaboration networks, research keywords, and foundations are some of the insights offered. In conclusion, three phases of mobile technology in tourism research are proposed. Contributions: identification of prospective future research directions, quantitative perspective on the study of mobile technology in tourism, and comprehensive research visualization from various angles.

(Johnson & Samakovlis, 2019) carried out a bibliometric analysis of journal articles published between 2000 and 2018. Domain visual observation and mapping. The information was taken from English language scientific articles using appropriate keywords related to smart tourism. Objective: To analyze the generation and progress of smart tourism knowledge through collaborative networks. Discovery: Collaborative networks shape and improve knowledge about smart tourism; The domain extends to various networks and core themes. Originality and value: Contribution to the evolution of smart tourism research; one of the early articles offering insight through bibliometric analysis.

(Ortega-Fraile et al., 2018) Conducting research mapping between mobile technology and tourism using the Scopus and Web of Science databases. Establishing the progression of mobile technology in the tourism industry, delineating the parameters of collaboration among academic

institutions, organizations, and businesses, and identifying the most significant subjects within "mobile tourism" are the aims of this study. Approach: A mixed methodology was employed, comprising database exploration, pertinent data extraction via Mendeley, Excel tabulation, and the generation of tables and graphs. Results: An examination of the quantity of articles published annually, by nation, institution, in collaboration, by author, and on particular subjects. Originality and worth: Since 2002, articles on the role of mobile phones in tourism have proliferated significantly; state and university participation has been moderate; and the significance of research models that are adapted to the ever-changing tourism landscape has been emphasized.

(Ye et al., 2020) performed a comprehensive analysis of 124 articles pertaining to smart tourism. Ten categories of smart tourism articles were identified through qualitative analysis, with an emphasis on the impact of technology on the perceptions, behavior, and experiences of visitors. An examination of the co-occurrence of keywords utilized by scholars over the past five years. Co-authorship analysis (country) is a method utilized to investigate the collaborative connections that exist among nations. An examination of applied theories, research domains, industries, and methodologies. In conclusion, intelligent tourism signifies a technologically innovative implementation that is profoundly influencing the future of travel. In order to identify research trends, themes, and implications, a systematic review was undertaken. Significant domains that warrant further investigation are identified, encompassing aspects such as governmental intervention, privacy concerns, psychological and social ramifications, and the formulation of theoretical frameworks.

Despite the growing recognition of analytical principles, understanding the thematic developments and trends in the expansion of tourism analysis in the context of mobile tourism remains a challenge. Discussion of research (Chen et al., 2020; Donthu et al., 2020; Johnson & Samakovlis, 2019; Ortega-Fraile et al., 2018) using bibliometrics methodology or combining methodologies, explanations are presented in a special or specific context. This shows that mobile tourism analysis cannot yet receive a comprehensive and general explanation. Therefore, this research focuses on discussing mobile tourism in general and tries to re-evaluate the development of mobile tourism, popular and trend-setting themes, as well as important topics that will emerge in the future within a certain period of time.

3. Research Methods

To address the concerns of academics and industry practitioners regarding the difficulty of assessing the evolution of mobile tourism, fashionable and popular themes, as well as important future topics over a certain period and variables related to mobile technology in the tourism industry going forward, it is important to examine patterns formation of mobile tourism to provide a comprehensive understanding of its development(Kim & Kim, 2017a). To address the gaps in the existing literature, the research questions for this study were posed, as follows:

- Research Question (RQ1): How is the analysis of itinerant tourism developing in the number of publications, citations, and most relevant journals?
- Research Question (RQ2): What is the distribution map for mobile tourism analysis based on clustering, co-citation (papers, authors, and sources), collaboration (authors, countries), and word analysis?
- Research Question (RQ3): How will collaboration trends and the conceptual structure of co-occurrence networks influence their visual representation in the future?

To answer this question, this research aims as follows: (1) Identify the growing development of analysis in mobile tourism, regarding the increase in the number of publications, the most relevant journals, and citations. (2) Analyze the distribution map of mobile tourism analysis based on clustering, co-cite (papers, authors, and sources), collaboration (authors, countries), and word analysis. (3) Interpret the collaboration of countries and the conceptual structure of co-occurrence networks regarding their visual representation.

In this research, quantitative methods were used with a descriptive approach through bibliometric analysis (Broadus, 1987; Mulet-Forteza et al., 2018; Qian et al., 2019). From this context, the application of the methods was summarized, such as the analysis of bibliometric data, namely publication units (Donthu et al., 2021). Bibliometric analysis was also used to

globally determine research developments, analyze the distribution map, and interpret mobile tourism. The stages in this process start with the data collection stage to data analysis in visualizing the data.

3.1 Data Collection

The 2014-2023 data used for the bibliometric analysis was obtained from the SCOPUS database containing various citations regarding keyword searches. This database was often used to retrieve data for systematic review (Awalurahman et al., 2023; Rahmadhan et al., 2023) and bibliometric analysis (Martorell Cunill et al., 2019; Ortega-Fraile et al., 2018) due to containing the highest quality scientific publications. According to the proposal of (Xiang et al., 2021), the search for high-quality data was conducted by establishing several criteria restricting the analytical scope. This indicated two search patterns, namely (1) using a large number of keywords (Leung et al., 2017), and (2) focusing searches on a few terms directly related to the exact research topic (D. Leung et al., 2013; Zeng & Gerritsen, 2014). In this research, the second option entailing the use of keywords explicitly associated with the topic was selected, to obtain general and specific relevant outputs. However, the acknowledgment of the two alternatives as the subject of debate was identified, with the final decision depending on the outputs. The Scopus database from https://www-scopus-com.ezpustaka2.upsi.edu.my also served as the experimental data source, with the total number of documents obtained for mobile travel being 1,528. However, based on the selection criteria, 776 articles were excluded. This was accompanied by the filtration of the article outcomes, to prevent the definition of duplicate keywords and filters, such as (1) Criteria Selected by 10 Years (2014-2023), (2) Filters by Document Type, (3) Publication Stage, (4) Source Type, and (5) Language. In this case, the procedure yielded a data document containing 752 articles, whose metadata sources were then extracted in bib-style format. This led to the retrieval of various information, including citations, bibliographic, abstracts & keywords, etc. The systematic review in this study incorporated a database search in accordance with the PRISMA flowchart and inventory of preferred reporting items for systematic reviews and meta-analyses. Users are able to generate flowcharts of systematic reviews, according to research (Arega & Sharma, 2023; Reddy et al., 2023), using the Shiny application and the R package.

Fig 1 depicts the data capture procedure flowchart on April 21, 2023, with the keywords entered into the Scopus database for information mining. "mobile tourism" AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021 ORLIMIT-TO (PUBYEAR, 2020) LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) ORLIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014)) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j"))

The final article data obtained was 752, in the form of articles in English for the time period from 2014 to 2023 that was observed. In this case, the R-tool software was used to map the outputs of publication development, as a well-developed and extensively documented statistical computing language and environment (Aria & Cuccurullo, 2017; Aubert & Hocking, 2023). R-studio provides various advantages in bibliometric analysis, including a wide range of packages for quantitative analysis, visualization, and mapping of bibliographic data, making it a popular choice among academics in this subject (Anaç et al., 2023; Ansari et al., 2022; Duplančić Leder et al., 2023; Kharchenko, 2023). These Scopus data were then entered into the R-tool software for data analysis on bibliometric coupling, co-citation, co-authors, and co-word. The visualization outputs were also considered a collection of cooperation and world maps of country collaboration networks, thematic maps, and data analysis interpretation. According to the bibliographic data, the visual representation of the bibliometric analysis enhanced the comprehension of the entire dataset. It also enabled the identification of key elements within the depiction of the dataset items, such as nodes and connections between authors, journals, and keywords (Van Eck & Waltman, 2010).

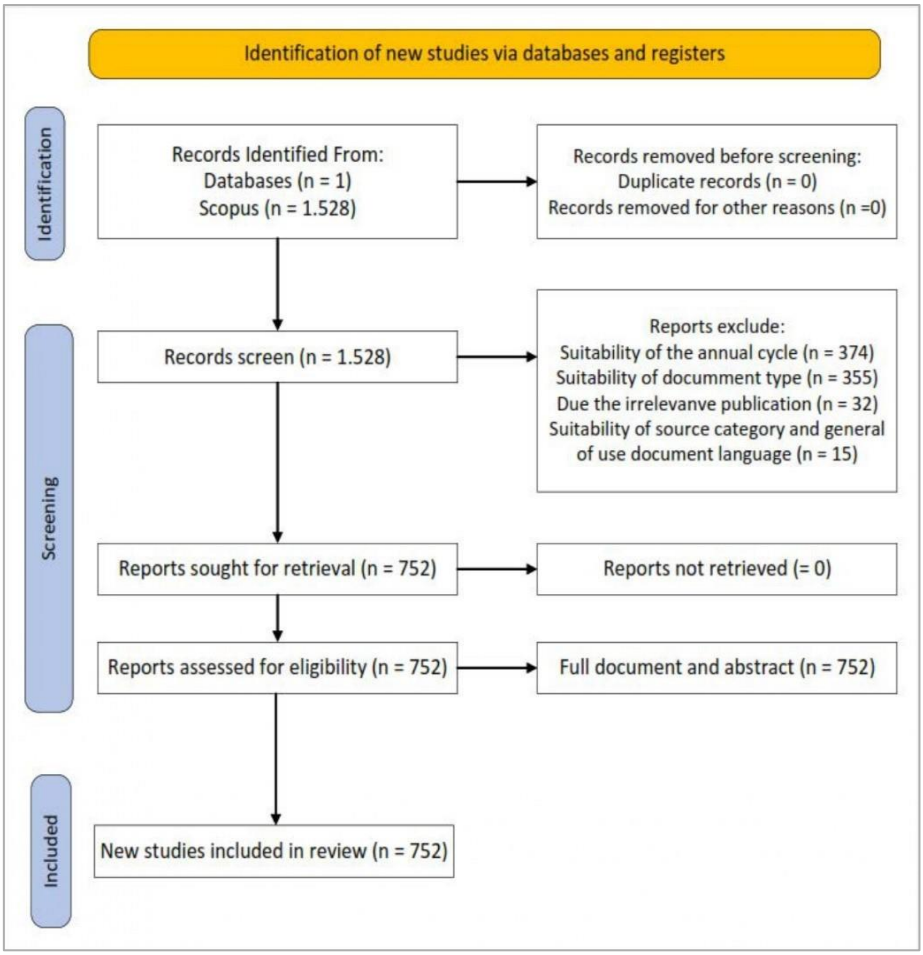

Fig. 1. PRISMA flow diagram of study identification, screening and selection.

1) Identify Keyword
   Studies have explored the use of keyword bursts and author bursts as indicators for identifying emerging or dying research trends, highlighting the importance of effective keyword identification in tracking the evolution of research areas (Kenekayoro, 2020). Keyword identification was carried out in research by collecting various articles and journals related to "mobile tourism".
2) Inclusion Criteria
   Research papers from the sources mentioned above are assessed based on all field criteria including Citation information, Bibliographical information, Abstract & keywords, Funding details, and other information.
3) Exclusion Criteria
   Criteria for selected articles: 10 years (2014-2023), filter based on document type is an article, article publication stage is final, article source type is a journal, and article language is English.

3.2 Data Analysis

In this research, descriptive analysis and network extraction were emphasized, with different approaches developed to extract several channels using distinct analytical units (Aria & Cuccurullo, 2017), (Callon, M & Turner, W. A, 1983). (1) Bibliographic linkage can occur when two works share the same reference to a third assignment in their bibliography. This shows that both works can cover similar subject matter and be used to map current analytical boundaries (Kessler, 1963). (2) The frequency of two documents being cited simultaneously is defined as co-citation analysis. This suggests that greater frequency leads to stronger ties (Liu et

al., 2015). (3) Authorship analysis shows patterns of authorship and connectivity among collaborating authors (Donthu et al., 2021). (4) Co-word analysis examines the conceptual structure of a research field by employing the most important words or keywords in documents (Callon, M & Turner, W. A, 1983).

4. Results and Discussions

4.1 Results

In this section, the results of 752 datasets from the Scopus database were evaluated, providing information based on the following objectives.

A. RQ1. How will mobile tourism analysis develop in the number of publications, citations, and most relevant journals?

1. Development of Research in Mobile Tourism based on Publications

Based on the results, an overview of the total number of publications and citations was provided. By using publications, (Rialp et al., 2019) implied that the work measured the volume of published analysis, with citations emphasizing prominence and influence. Figs 2 and 3 present the evolution of Mobile Tourism publications and the average number of article citations per year from 2014 to 2023.

Fig 2 shows the evolution of Mobile Tourism publications from 2014 to 2023. During these periods, 752 relevant scientific publications were presented, demonstrating an increase in the outputs of the analytical field. The average number of publications produced in the first decade was also 752, with 139 and 29 papers published in 2021 and 2014, respectively. Although the average increased yearly with an elevation observed in 2020, no increment was found in 2018 and 2019 regarding the number of articles, which was 74. The publication increases also peaked in 2021 and declined in 2022 and 2023, with a total of 33 articles published in 2023. From these results, the number of publications on mobile tourism was still inadequate for space exploration and wireless tourism-related analysis (Fig 2).

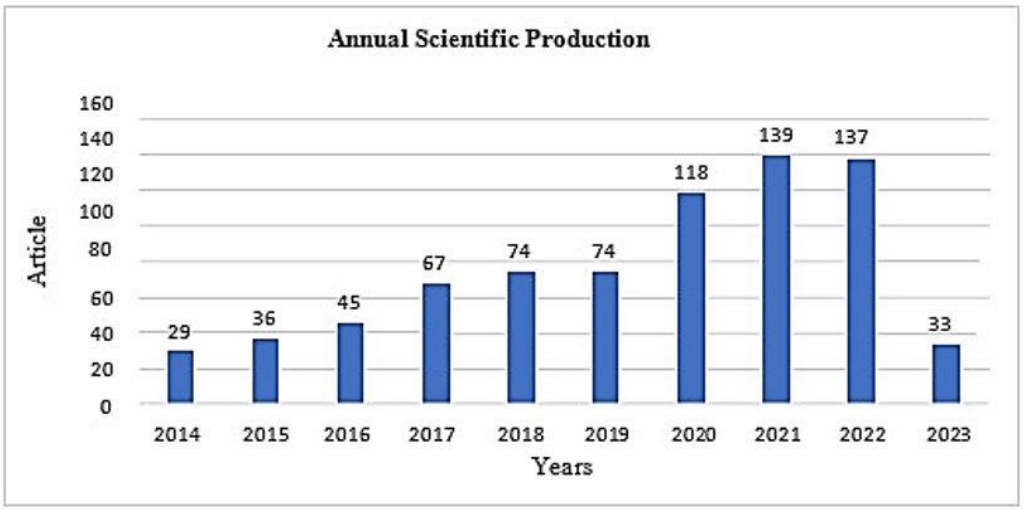

Fig. 2. The evolution of mobile tourism research publications

2. Development of Research in Mobile Tourism Based on Average Citation per Year

According to Fig 3, the average number of article citations per year was depicted. Since the debut of mobile travel documents in 2014, the average number of annual citations has passed through four distinct phases. In the first period, the average value increased progressively from 2014 to 2015, reaching a peak of 5.92 in 2015 before declining to 4.74 and 4.17 in 2016 and 2017, respectively. For the second phase, mobile tourism increased in 2018 and surpassed 6,076 average citations to reach its peak. This was accompanied by the third stage, where the average value decreased to 4.02 in 2019 before rising significantly in 2020. Regarding an average of 6.14 citations from the beginning of 2014 to the present, this article reached its apex in 2020. This indicated that the period beginning in 2021 and ending in 2023

continuously experienced a decline in the average number of citations, with the lowest value of 1.39 occurring in 2023.

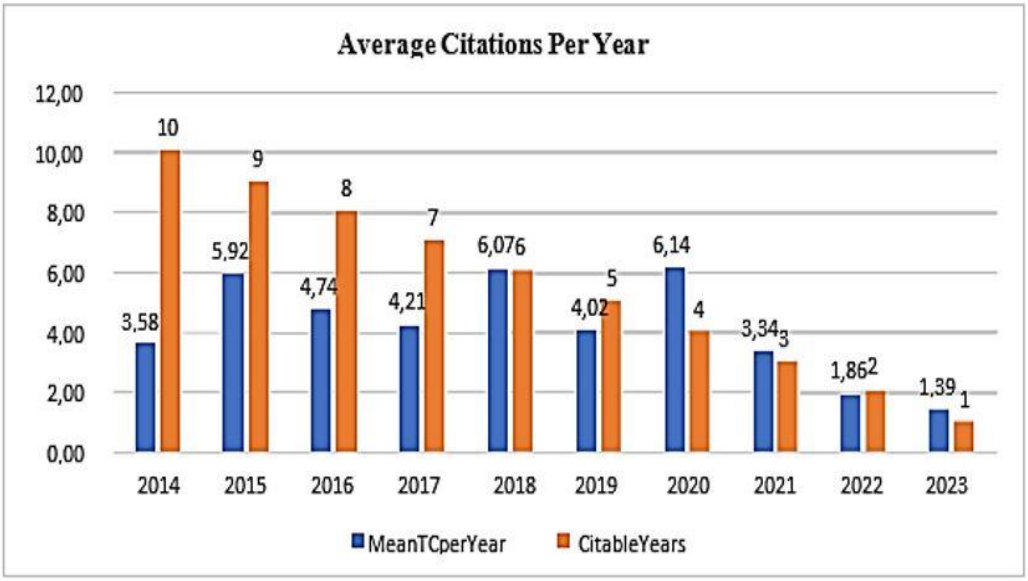

Fig. 3. The average number of article citations per year

3. Development of Research in Mobile Tourism Based on Most Relevant Journal

In the analysis of mobile tourism, the sources with the most publications were displayed in Table 1. This indicated that the top 10 publication sources were scholarly journals, not conference proceedings. From this context, the Journals of Sustainability (Switzerland) and Hospitality & Tourism Technology Sustainability Journal (Switzerland) ranked first and second with 39 scholarly and 16 academic articles, respectively. Based on the results, Information Technology & Tourism and Telematics & Informatics were ranked third with 15 articles each. Other leading publications included the Journals of Travel Research (13), Retailing and Consumer Services (12), Mobile Information Systems (12), Contemporary Hospitality Management (International; 11), Computers in Human Behavior (9), and Tourism Management (9).

Table 1 - Mobile tourism based on the most relevant journal

Sources	Articles
Sustainability (Switzerland)	39
Journal of Hospitality and Tourism Technology	16
Information Technology and Tourism	15
Telematics and Informatics	15
Journal of Travel Research	13
Journal of Retailing and Consumer Services	12
Mobile Information Systems	12
International Journal of Contemporary Hospitality Management	11
Computers in Human Behavior	9
Tourism Management	9

B. RQ2. How will the distribution map of mobile tourism analysis base on clustering, co-citation (papers, authors, and sources), collaboration (authors, countries), and word analysis?

1. Distribution Map of Research in Mobile Tourism Based on Citation Papers Analysis

In Fig 4, the network visualization map for co-citation analysis was depicted based on cited documents. This showed that the 49 network documents were organized into 4 clusters represented by various colorations. In this case, the crimson, blue, green, and purple colors

represented Clusters 1, 2, 3, and 4, with 6, 41, 1, and 1 document, respectively. The size and color of the vertices also encompassed the significance or prominence of the document, with the thickness and coloration of the border prioritizing the strength of the co-citation relationship. Based on the cumulative degrees' diagrams, the relationship between the accumulated levels and the co-citation network was visualized. This showed that the nodes with a greater cumulative degree will be ranked higher, and vice versa. From this visualization, Davis. FD 1988-1 was the most cited document ranking first with a plot level of 1. This was accompanied by Fornell c. 1981-1 and Venkatesh.v.2003, which ranked second and third with plot levels of 0.847 and 0.727, respectively. Meanwhile, Ajzen i. 1991, Davis fd-2, Fishbein m. 1975, Wang D. 2014, Bhattacharjee A. 2006, and Google Scholar with plot levels of 0.501, 0.401, 0.356, 0.12, 0.119, and 0.003 were ranked lowest, respectively.

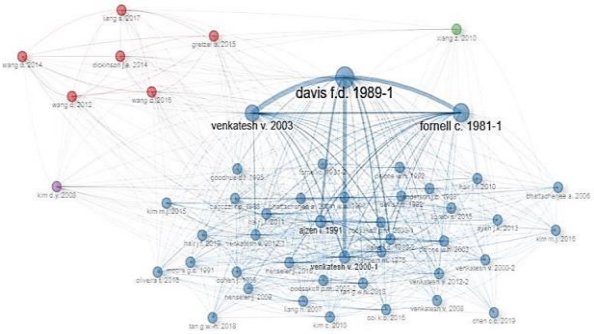

Fig. 4. Mobile tourism based on citation papers analysis

2. Distribution Map of Research in Mobile Tourism Based on Citation Author Analysis

In bibliometrics, citation analysis was the most prevalent experimental phenomenon, due to employing quotation counts as a measure of similarity between documents, authors, and periodicals. This analysis was subsequently degraded into bibliographic coupling and co-citation analysis. For example, the co-citations of authors (White & Griffith, 1981) and journals (McCain, 1991). Based on Fig 5, the network visualization map for co-citation analysis was depicted regarding cited authors. This proved that the 50 network authors were divided into two subgroups. In this case, the crimson and blue colors represented Clusters 1 and 2 with 31 and 19 authors, respectively. The size and color of the nodes also emphasized the significance or prominence of the authors, with the thickness and coloration of the border indicating the length of the co-citation relationship.

According to the cumulative degree diagrams, the relationship between accumulated levels and the co-citation network was visualized. This explains that the nodes with a greater cumulative degree would be ranked higher and vice versa. From this context, Kim is the most prominent author ranked first with a plot level of 1, having the strongest co-citation relationship. This was accompanied by Wang, Lee, Chen, Hair, and Zhang ranking second, third, fourth, fifth, and sixth with plot levels of 0.993, 0.911, 0.82, 0.75, and 0.652, respectively. Meanwhile, the classification below begins with Zheng, Law, and Gretzel with levels of 0.184, 0.155, and 0.131 were considered the lowest values.

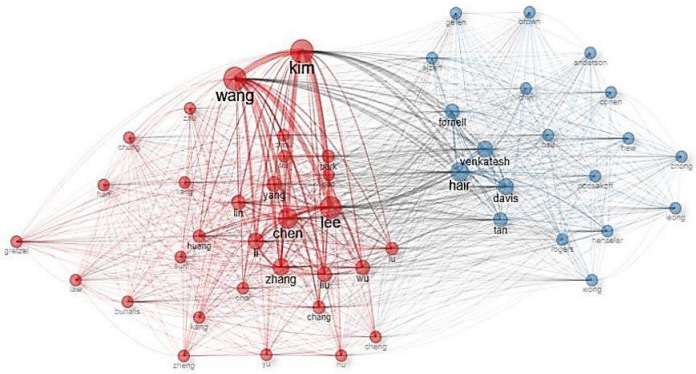

Fig. 5. Mobile tourism based on citation author analysis

3. Distribution Map of Research in Mobile Tourism Based on Citation Source Analysis

According to Fig 6, the network visualization map for co-citation analysis was depicted regarding cited sources. This showed that the 50 network sources were divided into three groups, where the crimson, blue, and green colors represented Clusters 1, 2, and 3 with 13, 27, and 10 originations, respectively. The thickness and color of the edges also signified the strength of the co-quote relationship. Based on the cumulative degree diagrams, the relationship between accumulated levels and the co-citation network was visualized. This proved that the nodes with a greater cumulative degree will be ranked higher and vice versa. In this case, computer-human behavior journals were ranked first with a degree plot of 1 and were the most widely read documents having the strongest co-citation relationships. This was accompanied by the Journals of Tourism Management, Mis Quarterly, Telematics and Informatics, Business Research, and Information Management (International) with plot degrees of 0.972, 0.877, 0.799, 0.76, and 0.732, respectively. Meanwhile, the Journals of Computer-Human Behavior, Tourism Management, and Systematic Application (Expert) with plot levels of 0.045, 0.041, and 0.031 were ranked the lowest, respectively.

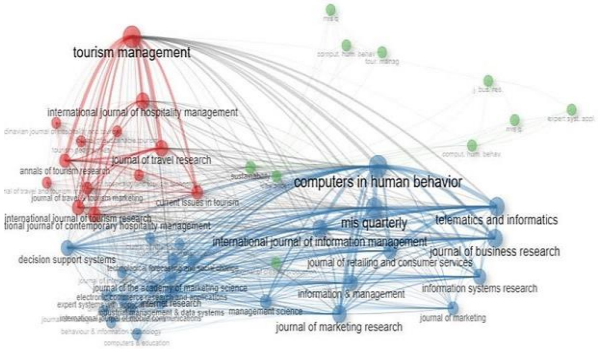

Fig. 6. Mobile tourism based on citation source analysis

4. Distribution Map of Research in Mobile Tourism Based on Collaboration Network Analysis

1) Author's Distribution Map of Research in Mobile Tourism Based on Collaboration Network Analysis

The nodes and connections representing authors and co-authorships were contained in a scientific collaboration network, which was one of the most extensively studied forms of experimental cooperation (Glänzel & Schubert, 2005). Co-author analysis was another form of bibliometric research, which examined various authors and their affiliations to analyze social structure and collaboration networks (Glanzel, 2001; Peters & Van Raan, 1991). Based on the network construction originating from the normalization phase, graphs or diagrams were commonly generated regarding the relationships (edges) between its nodes. In this case, each node represented an author, with the endpoints indicating the collaborative relationship (Aria & Cuccurullo, 2017). The thickness and color of the edges also prioritized the intensity of the collaborative relationship, with the size and coloration of the nodes representing the significance or output of the author.

Based on Fig 7, the visual representation of the Collaboration Network Analysis base author was shown. This network of collaboration comprised 42 authors organized into 10 clusters. From this context, the first cluster represented by the crimson color consisted of Ooi kb, Tan GWh, Lee Yh, hew Jj, Leong ly, Loh Xm, Hew Ts, Dwivedi YK, Wong Lw, Foo Py, Sohal a, aw ecx, and Cham Th, and is represented by the color crimson, with the second group having the brown coloration containing Law r, Wang d, Liu j, and Xiang z. The third cluster represented by the light green color also contained Kim MJ, Chung n, Lee ck, and Preis mw, with the fourth group having a purple depiction comprising Chen Y and Liu Y. Furthermore, the orange color depicted the fifth cluster consisting of Li Y and Chen T, with Zhang q, Zhang y, Wang j, Wang y, Zhang g, Cao f, Chen j, and Chen z enclosed in the sixth group having brown coloration. For the seventh cluster visualized by grey color, Da and Db Carson were contained, with the eighth group having a dark green representation including Dhir a, Kaur p, and Talwar s. The pink color depicting the ninth cluster also consisted of Lo Ps and Wei-Han tang, with

Bharadwaj kk and Choudhary n, contained in the tenth group portrayed in fuchsia. Moreover, the collaboration network degree diagram was used to visualize the distribution of cooperation between the parties analyzing mobile tourism. By analyzing this diagram, the identification of the authors was achieved through the most connections and the distribution of collaborative efforts across the network. Based on the results, Ooi kb was the author with the most substantial connection to plot diagram 1. This was accompanied by Tan Gwh, Lee YH, Hew jj, and Leong Ly with plot diagrams of 0.797%, 0.523, 0.401, and 0.279, respectively.

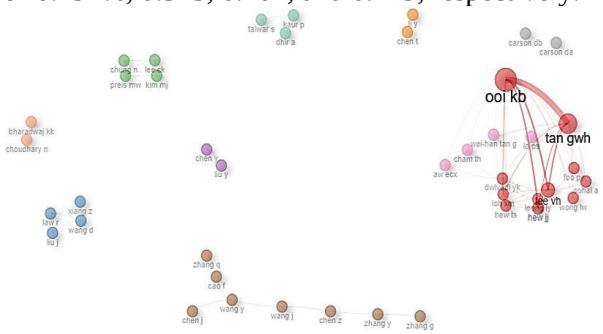

Fig. 7. Author's collaboration network analysis

2) Countries Distribution Map of Research in Mobile Tourism Based on Collaboration Network Analysis

A graph or network diagram was used to depict collaborative channels, where each node and edge represented a country and their collaborative relationships. In this case, the size and color of a node prioritized the significance or output of a nation, with the thickness and coloration of a border indicating a collaborative relationship strength.

Based on Fig 8, a representation of the Collaboration Network Analysis was visualized regarding a country. This network of collaboration comprised 38 countries organized into 5 clusters. In this case, the crimson color denoted the first cluster, which included China, Malaysia, India, the United Kingdom, Indonesia, Pakistan, Saudi Arabia, Jordan, Ukraine, Bangladesh, and Iraq. The second cluster represented by the hue blue also contained the United States, Korea, Hong Kong, Thailand, Japan, Singapore, and Qatar, with the third group portrayed by green consisting of Spain, Finland, Portugal, Turkey, Germany, Norway, Sweden, South Africa, Greece, the Netherlands, New Zealand, Serbia, Denmark, Oman, Colombia, and Ghana. Moreover, the fourth cluster denoted by purple comprised Australia, Iran, and Canada, with the orange color representing the fifth group containing Italy, Poland, Brazil, Switzerland, Egypt, France, Austria, Algeria, Argentina, and Morocco.

The collaboration network degree diagram was also used to visualize the distribution of international collaboration emphasizing mobile tourism analysis. From this context, the most interconnected nations and the distribution of collaborative efforts throughout the network were determined. Based on the results, China was the most connected country with the plot diagram of 1, accompanied by Malaysia at 0.53. In this case, both countries were categorized into the same group, namely Cluster 1. The United States and Korea grouped into Cluster 2 were also ranked as the third and fourth, with plot diagrams of 0.454 and 0.329, respectively. Meanwhile, India and the United Kingdom grouped in Cluster 1 occupied the fifth and sixth positions with plot diagrams of 0.288 and 0.25, respectively.

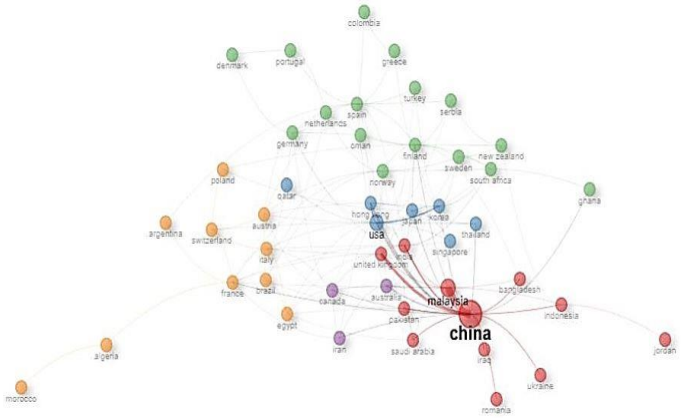

Fig. 8. Countries collaboration network analysis

5. Distribution Map of Research in Mobile Tourism Based on Word Analysis

1) Word Analysis Distribution Map Based on Most Frequency Word and Word Cloud

By using a word co-occurrence network to map and aggregate the terms extracted from keywords, titles, or abstracts in a bibliographic collection, the co-word analysis was responsible for determining the conceptual structure of a framework. This function extracted terms from a textual field (e.g., abstract, title, author's keywords), removed stop words, and applied Porter's stemming algorithm (Porter, 1980). From this context, stemming was the reduction of inflected (or occasionally derived) words to their stem, base, or root forms, specifically in written format. This emphasized the most frequently occurring words in a text or reader collection. In mobile tourism analysis, the identification of the most important topics, concepts, and themes was also facilitated by analyzing the highest frequently used words. Based on Fig 9, the frequency with which the keyword of an author occurred in mobile tourism publications was determined. This indicated that Tourism ranked first among 2,600 frequently occurring keywords with 43 occurrences, accompanied by Technology Acceptance Model, Satisfaction, Mobile Commerce, Perceived Utility, and social media with 34, 22, 21, 21, and 21 appearances, respectively. Trust was also observed 21 times, with COVID-19, PLS-SEM, and Smart Tourism having 20, 17, and 17 occurrences, respectively.

In Fig 10, a word cloud was depicted for the keywords of the author, with the font size of a term or phrase indicating its frequency level. This showed that Tourism was frequently observed, accompanied by Technology Acceptance Model, Satisfaction, Mobile Commerce, Perceived Usefulness, social media, Trust, COVID-19, PLS-SEM, and Smart Tourism. Although Figs 9 and 10 had different forms, the contents were still identical with distinct presentation concepts.

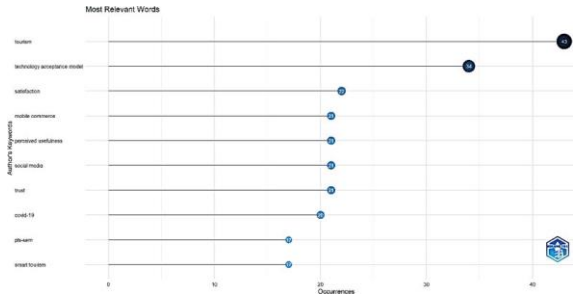

Fig. 9. Word analysis distribution map based on most frequency word

Fig. 10. Word analysis distribution map based on Word Cloud

2) Word Analysis Distribution Map Based on Trend Topic

In Fig 11, the circle was used to denote the occurrence frequency of a specific keyword, with the horizontal line indicating the range between the first and third quartiles. This showed the period and extent to which the keywords achieved popularity. Based on a joint citation analysis of 21 keywords and 315 keyword occurrences in mobile tourism, no prominent topics were observed from 2014 to 2015. However, a research topic on context awareness and innovation was visualized in 2014.

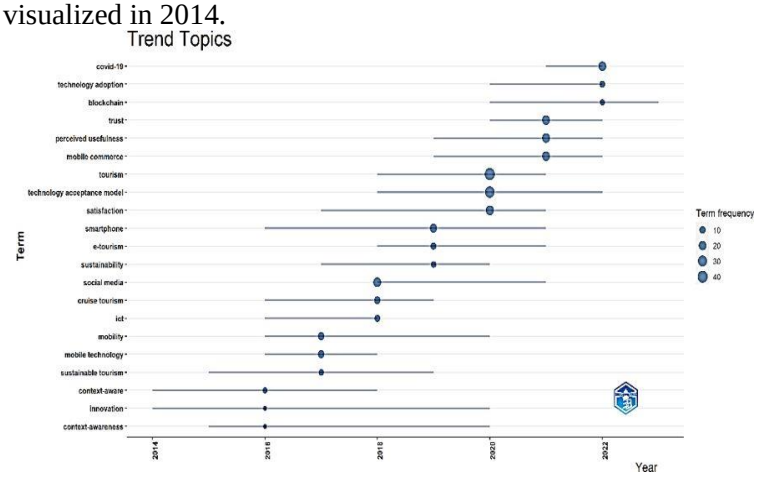

Fig. 11. Word analysis distribution map based on trend topic

Context-aware (2014-2018)" also became a prominent topic in 2016 (6 occurrences) compared to Innovation (2014-2020) and Context Awareness (2016-2020) with occurrence rates of 5 and 5, respectively. Moreover, Mobile Technology (2016-2018) and Mobility (2016-2020) were popular topics in 2017, with an incidence rate of 12 each, compared to Sustainable Tourism (2017-2019) occurring 7 times. In 2018, social media (2018-2021) became the most discussed topic with an occurrence value of 21 times. This exceeded the rate of case visibility in the same year, with Cruise Tourism (2016-2019) and ICT topics (2016-2018) having 11 and 8 events, respectively. According to the most prominent issues in 2019, Smartphones (2016-2021) also had a higher incidence rate (16 events) than e-tourism (2018-2021) occurring 9 times, with Sustainability (2017-2021) only emphasizing 7 occurrences. In 2020, the most discussed topic was Tourism (2018-2020), whose 43 occurrence rates rivaled the 34 events of the Technology Acceptance Model (2018-2022), with Satisfaction (2017-2021) occurring 22 times. During 2021, three topics were also frequently discussed collectively with occurrence rates of 21 each, namely Trust (2020-2022), Perceived Usefulness (2019-2022), and Mobile Commerce (2019-2022). In addition, COVID-19 (2021-2022) was highly prominent with 20 appearances in 2022, rivaling Technology Adoption (2020- 2022) and Blockchain (2020-2023) having 8 and 6 occurrences, respectively. Based on all keyword occurrences, Tourism was the most popular theme with 43 occurrences.

C. RQ3. How will collaboration trends and the conceptual structure of co-occurrence networks affect their visual representation in the future?

1) Visual Interpretation Map of Research in Mobile Tourism Based on Countries' Collaboration World Map Analysis

According to Fig 12, international cooperation in mobile tourism was depicted. This indicated that a red line was used for connection when cooperation was found between two countries or regions. In this case, the width of the line was proportional to the degree of collaboration. The United States, China, Spain, and Malaysia were also publication hubs, with numerous red lines observed between them and other countries. From this context, the United States specifically had 24 collaborative relationships with other nations, regarding the publication of 12, 10, 3, and 3 joint papers with Korea, Hong Kong, India, and Japan, respectively. China also presently had 21 partnerships with other nations, leading to the publication of 27, 16, 14, 11, and 9 joint papers with Malaysia, the United Kingdom, the United States, Hong Kong, and India, respectively. Moreover, Malaysia and Spain were tied for the third position with 15 collaborative relationships with other nations. This indicated that Malaysia had 9, 7, 6, and 5 joint publications with Australia, the United Kingdom, India, and Saudi Arabia, respectively. Spain also had 5 and 2 collaborative articles with Portugal and Serbia, respectively. From these results, India, Finland, Korea, and Australia were the nations that had collaborated on the publication of documents.

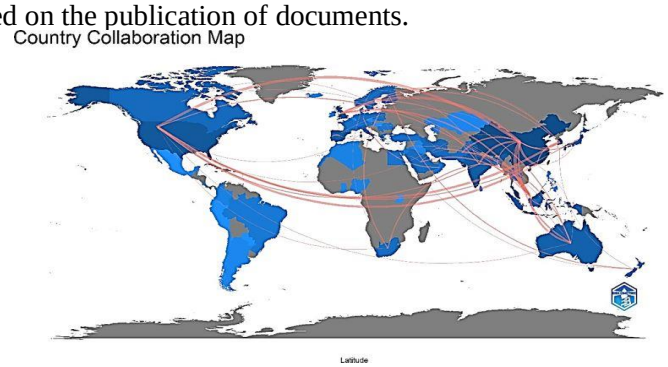

Fig. 12. Visual countries collaboration world map analysis

2) Visual Interpretation Map of Research in Mobile Tourism Based on Conceptual Structure

1. Visual Interpretation Map of Research in Mobile Tourism Based on Co-Occurrence Network

Based on Fig 13, the relationship between key terms and entities in mobile tourism was prioritized regarding their propensity to relate to one another. This indicated that the central nodes or hubs of the network were designated as the key entities frequently occurring together, highlighting their significance in mobile tourism analysis. In line with the entity term in the author keyword, 9 grouped and interconnected clusters were observed, with each group represented by a dominant element. From these results, Smart Tourism, Satisfaction, Perceived Efficacy, Mobile Commerce, Technology Acceptance Model, Mobile Payment, Augmented Reality, Trust, and Tourism were the dominant entities in the first, second, third, fourth, fifth, sixth, seventh, eighth, and ninth clusters, representing 2, 5, 3, 5, 3, 1, 1, 1, and 4 additional keywords, respectively.

The cumulative degree also represented the entire number of connections a node had with other forms in co-occurrence network analysis. This quantified the aggregate significance or centrality of a node within a co-occurrence network. According to the cumulative degree author keyword in mobile tourism, Tourism was the most central keyword with a degree plot of 1.00. This was accompanied by the Technology Acceptance Model, Perceived Efficacy, Satisfaction, Mobile Commerce, Trust, ICT, Social Influence, and Big Data with degree plots of 0.818, 0.603, 0.554, 0.554, 0.529, 0.165, 0.165, and 0.157, respectively.

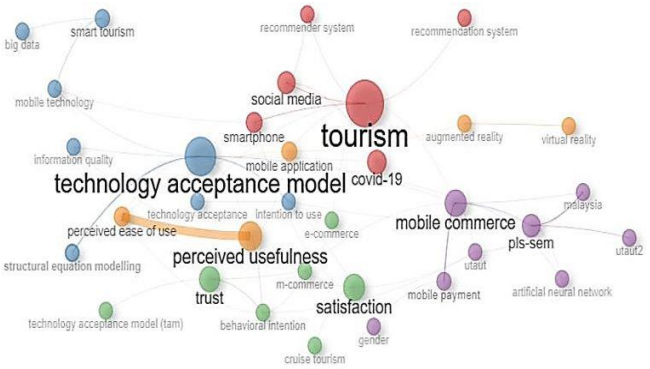

Fig. 13. Visual Interpretation Mobile Tourism Based on Co-Occurrence Network

2. Visual Interpretation Map of Research in Mobile Tourism Based on Thematic Map, Thematic Map-Cluster

Methods of analysis were responsible for enabling the extraction of valuable knowledge from data and its representation through intuitive visualizations or maps, such as bi-dimensional maps and social networks. Network analysis also enabled the determination of a statistical analysis on the generated maps, to indicate different measures of the entire channel or relationship/overlap between the various clusters detected. By using visualization techniques, a science map and the outputs of various analyses were represented. For instance, networks were depicted through thematic channels (Bailón-Moreno et al., 2006) or maps, where the proximity between objects represented their similarity (van Eck & Waltman, 2010). However, the objective of the temporal analysis was conducted to determine the conceptual, intellectual, or social evolution of the analytical field, by identifying patterns, trends, seasonality, and outliers. The objective of burst detection, a type of temporal analysis, was also performed to identify the features with high intensity over finite time intervals. In this context, cluster strings (Small, 2006; Upham & Small, 2010), and thematic areas (Cobo et al., 2011b) were used to illustrate the evolution over several periods. Based on Fig 14, the analysis of mobile tourism Thematic Maps was related to two dimensions, namely density, and centrality. These themes emphasized a two-dimensional map and were subsequently categorized into four distinct categories, namely motor, basic, appear/decline, and niche. In this case, age, an elaboration likelihood model, and an image of the final destination were used to categorize the themes appearing or declining in frequency.

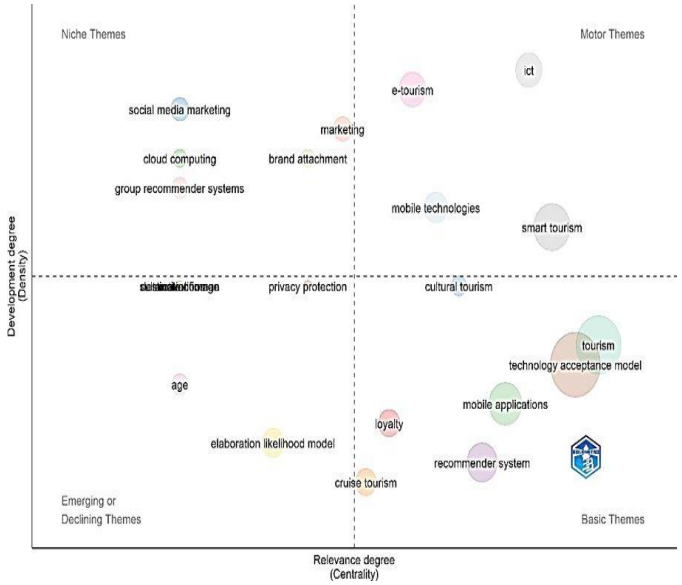

Fig. 14. Visual interpretation of mobile tourism based on thematic map.

Group recommender systems, cloud computing, social media promotion, brand attachments, and marketing were also various examples of niche topics, with motor themes represented by mobile technologies, ICT, e-tourism, and smart tourism. Moreover, cruise and

cultural tourism, loyalty, recommender systems, mobile applications, technology acceptance model (Gibson, 2021; M. J. Kim & Hall, 2019; Rahimizhian et al., 2020a; Rasli et al., 2020; Tan & Ooi, 2018), and tourism (Neuhofer et al., 2015; Singh et al., 2020; Talwar et al., 2020; Tze Kiat Lui et al., 2021) denoted the basic themes. According to Table 2, Tourism and Technology Acceptance Models were important topics without optimal development, as evidenced by their centrality and density values of 22/8 and 21/7, respectively. This proved that the two themes had minor significant and density values due to their non-optimal development.

Table 2 - Visual Interpretation Of Mobile Tourism Based On Thematic Map-Cluster

Cluster	Rank Centrality	Rank Density
Tourism	22	8
Technology acceptance model	21	7
Smart tourism	20	14
ICT	19	22
Mobile applications	18	5
Recommender system	17	2
Cultural tourism	16	11
Mobile technologies	15	15
e-tourism	14	21
Loyalty	13	4

B. Discussions

A. Theoretical Implications

According to the results, Tourism has been recognized as a particularly noteworthy advancement in the industrial sector. This demonstrated that numerous analyses of mobile tourism had been performed within the tourism sector.

Despite the gradual development of this analysis, a paucity of literature on its establishment patterns was still observed, leading to an incomplete picture of its evolution. The study titled "The Role of Mobile Technology in Tourism: Patents, Articles, News, and Reviews of Mobile Tour Applications" identifies the concerns and variables associated with mobile technology in the tourism industry and describes the function of mobile technology in tourism. Moving forward, it will be imperative to examine the formation patterns of itinerant tourism to provide a comprehensive understanding of its development (Kim & Kim, 2017b). In this research, the literature on mobile tourism was synthesized from 2014 to 2023 using bibliometric analysis, facilitating the accumulation of knowledge and providing potential analytical directions. From this context, the results obtained contributed to the literature by analyzing the knowledge structure and evolution of mobile tourism analysis over the previous decade.

Contributions were also made because the evaluation was carried out in general, emphasizing the evolution of exploratory analysis on the theme of "mobile tourism". This is one of the first attempts to specifically address the analysis of mobile tourism by evaluating general themes, although many other studies are observed illustrating the development of knowledge about the specific category of mobile tourism, such as (1) Travel Applications (Zhou et al., 2021; Zhou et al., 2022), (2) Augmented Reality for smart devices (Tom Dieck & Jung, 2018), (3) Virtual Reality Applications at Festivals (Dieck et al., 2021), (4) Mobile Social Commerce (Sun & Xu, 2019), (5) Services for mobile wallets (Singh et al., 2020), (6) Tourism applications (Palos-Sanchez et al., 2021), (7) Smart technology development (Neuhofer et al., 2015), (8) Wireless hospitality technologies (Navio-Marco et al., 2019), (9) Mobile social media (Li et al., 2019), (10) Digital applications (Martins & Casais, 2019), (11) Online purchasing (Saprikis & Avlogiaris, 2021) (12) Virtual tourism (Adeola & Evans, 2019), (13) Smart, hybrid, and context-aware (Afsahhosseini & Al-Mulla, 2021), and (14) Mobile computing (Agustinus Borgy Waluyo & Ling Tan, 2021).

The development of Mobile Tourism Research can be seen in the increasing impact of digital technology, the utilization of cellular applications to promote cultural tourism, the influence of cellular technology on user intention to visit the destination, and Drivers of Economic Growth all contributed to the peak increase in publication volume in 2021. esting of the Smart Marca application shows that intentions to visit a destination are positively influenced by the usability and ease of use of the application, as well as other application-specific attributes (Ferrara et al., 2021). Leveraging smartphone applications to promote Tehran's architectural heritage tourism, with emphasis on the importance of mobile applications (Sepehri & Gholinejad Pirbazari, 2021). Bibliometric analysis examines the use of mobile technology in the smart tourism domain. This analysis provides valuable insights into current research and emerging trends in smart tourism (Chen et al., 2022). Tourism and Digital Technology as Drivers of Economic Growth in Europe and Central Asia (Castro et al., 2021). In contrast, these studies were not identified in 2023, although the factors causing the decline in such studies were not explicitly stated. However, changes in research that emphasize alternative domains of tourism studies, such as sustainable tourism, cultural tourism, or smart tourism, have the potential to influence the decline (Rosário et al., 2021). These factors could have resulted in a diversion of resources and attention away from cellular tourism research. Furthermore, research on cellular tourism might have been conducted on more recent technologies, such as virtual and augmented reality, as a result of the tourism industry's accelerated technological advancements (Ghandour et al., 2021). This substantiates the assertion made in the introduction that numerous scholars devote more attention to debating particular facets of mobile tourism rather than the subject matter of mobile tourism as a whole.

Collaboration Network Analysis identifies the following 38 countries: five clusters. Among the most interconnected nations, the countries with the most collaboration are the United States, China, and Malaysia. In the interim, the forty-two authors are categorized into ten clusters; Ooi KB, Tan GWH, and Lee YH are the authors with the most substantial connections and the greatest collaborative distribution across the network. This demonstrates that China is a partner in research collaboration regarding the current topic of mobile tourism. The anthology of research on mobile tourism in China encompasses technological advancements, economic ramifications, and trends. Numerous studies have underscored the significance of mobile applications within the tourism sector, placing particular emphasis on the necessity to develop and implement them to foster domestic tourism and enrich the experiences of tourists. A growing emphasis on current applications and future orientations of big data in tourism-related research in China has been underscored by a systematic review of publications from English-language journals (Li et al., 2022).

Based on mobile tourism analysis, the article selection approach used is more complete and not limited to certain themes. A comprehensive perspective on the analytical evolution and current trends in the tourism industry is also provided. This holistic approach produces various outcomes in six categories, namely Tourism, Technology Acceptance Models, Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism. Furthermore, two of the six categories became words and word clouds that often appeared, namely Tourism and Technology Acceptance Model. This results in a perspective that emphasizes the pattern by which mobile tourism will become popular and significant in the future.

Using thematic tracking, themes were classified and identified based on their centrality and density in one of the four quadrants. This shows that theme development is determined specifically by carrying out thematic capture throughout the period. Based on the significance (centrality) and level of development (density) of the identified themes, potential areas for future analysis (basic themes) are proposed, namely: Tourism, Technology Acceptance Models, Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism. The Tourism and Technology Acceptance Model (TAM) has high centrality and density as a potential theme choice in the future). The results of these findings are strengthened and supported by researchers regarding tourism studies and technology acceptance models for mobile tourism, which is a potential theme in every development.

Kuo et al. (2019) in their research findings regarding assessing how consumers adopt and use tourism mobile applications to influence their intentions to visit tourism destinations using

the Technology Acceptance Model (TAM). The Technology Acceptance Model (TAM) can be applied to the tourism sector to better explain FIT behavior and preferences towards smartphone applications, according to research conducted by (Lin et al., 2020).

Meanwhile, a modified Technology Acceptance Model (m-TAM) was used to collect perceived enjoyment and perceived value to test how mobile technology influences consumers' intention to book hotel rooms via smartphone (Mohamad et al., 2021). For the benefit of hotel operators, online travel agents (OTAs), and hospitality technology suppliers, this research extends the Technology Acceptance Model (TAM) to predict and explain the adoption of new technologies in the service sector. It also offers significant theoretical contributions and useful practical implications. Meanwhile, (Rahimizhian et al., 2020b) used data collected from European respondents regarding Hong Kong as a goal to expand a model combining motivation theory and the Technology Acceptance Model to investigate the impact of 360-degree videos in shaping consumer attitudes and behavioral intentions.

B. Practical Implications

Based on the practical implications, this research was a synthesis of the research published in prominent mobile tourism journals. In this case, various industry professionals experienced difficulties in maintaining the vast amount of academic research on mobile tourism. Although some papers provided both theoretical and practical insights, these practitioners still assessed the actual pragmatic implications. By synthesizing the mobile tourism analysis published in a leading journal, this research served as a resource for industry professionals seeking academic articles pertinent to their situation. For instance, the research summary suggested that the tourism sector was supported through the instrument best suitable for the circumstance and time.

A technological perspective on the concept of mobile tourism includes destination management and image, sustainable and digital exploration, wireless technology, social networks, and m-tourism. The patterns of comprehending various behaviors in the tourism industry also the technological perspective on the mobile tourism concept includes destination management and image, sustainable and digital exploration, wireless technologies, social networks and m-tourism. Understanding patterns of various behaviours in the tourism industry also involves user attitudes, as well as privacy and preservation. Moreover, gender and status must be understood in the tourism industry, such as age and the millennial generation. In this case, a promotional model needs to be implemented, accompanied by the development and adoption of customer value, payment and marketing concepts. It is hoped that Smart and Cultural Tourism, ICT, Mobile technology and e-tourism can become reference materials for practitioners or adapt industrial concepts to scientific developments. Meanwhile, Tourism, Technology acceptance models, Mobile applications, Recommendation systems, Loyalty and cultural tourism should be used as opportunities for the development of the tourism industry, regarding the formation of knowledge in future analysis.

Strengthening the research study as a practical form in the form of implementing the findings carried out by (Mohamad et al., 2021). This study helps hotel owners, online travel agents (OTAs), and hospitality technology vendors anticipate and understand consumer behaviour regarding mobile hotel bookings. Meanwhile, (Mohamad et al., 2021) in a corporate environment, businesses can better understand their customers' intentions to book hotel rooms via smartphone by adding perceived enjoyment and value into the modified Technology Acceptance Model (m-TAM). This will result in more effective marketing and service improvement tactics. Travel marketers can leverage 360-degree video to captivate viewers and encourage them to participate in virtual experiences that will increase happiness and influence their future behaviour. 360-degree content is a useful tool for engaging Millennials and generating social currency through experiences. Tourism companies need to realize that the Millennial generation is the desired target market for unique experiences and digital sharing (Rahimizhian et al., 2020b)

When it comes to ecotourism, Sadiq & Adil, (2021) can offer insights that website/application developers can employ to create user-friendly interfaces with reliable information that will affect travellers' decisions to seek out ecotourism information. Draws

attention to how attitudes toward utilizing tourist apps and visiting places are shaped by the e-servicescape environment, e-word-of-mouth communication, perceived ease of use, and perceived utility.

C. Limitations and Future Research

This investigation has several limitations, such as the use of Scopus as the only data source. In this case, various research should leverage multiple databases (WOS, Google Scholar, Dimensions) to analyze a wider selection of academic publications (books, conference proceedings, dissertations). Another limitation indicated that the publication only used the "mobile tourism" theme and did not include other keywords despite other reports including numerous relevant terminologies. From this context, subsequent research was encouraged to expand their search for data sources regarding the trend outputs on Tourism, Technology Acceptance Model, Mobile Applications, Recommendation Systems, Loyalty, and Cultural Tourism, specifically on those with high centrality and diversity values ("tourism" and "technological acceptance model").

5. Conclusion

Based on the results, the use of bibliometric analysis led to the achievement of all research objectives. Firstly, the increasing development of mobile tourism analysis was identified regarding the elevating number of publications, the most relevant journals, and citations. In this case, the annual average citation count decreased slightly and not substantially. Secondly, the distribution map of mobile tourism analysis was examined concerning co-citation (papers, authors, and sources) and collaborative (authors, countries), word analysis, co-word experiments (word clouds and frequency word), and trending topics. According to word frequency distribution maps and Word Cloud, Tourism and Technology Acceptance Model were the most significant and frequently used words. Thirdly, the countries' collaboration and conceptual structure of co-occurrence networks were interpreted regarding their visual representation. For the basic themes on the thematic map, Tourism, Technology Acceptance Model, Mobile Application, Recommender System, Loyalty, and Cultural Tourism should be specifically developed and explored optimally (cluster 4), concerning the high-interest value and low density. These results were based on the level of centrality and density on the basic theme cluster, leading to the recommendation of six themes, namely Tourism, Technology Acceptance Model, Mobile Application, Recommender System, Loyalty, and Cultural Tourism. In this case, Tourism and Technology Acceptance Models were specifically emphasized, due to being important research having a prospective future in mobile tourism.

References

Adeola, O., & Evans, O. (2019). Digital tourism: Mobile phones, internet and tourism in Africa. *Tourism Recreation Research*, *44*(2), 190–202. https://doi.org/10.1080/02508281.2018.1562662

Afsahhosseini, F., & Al-Mulla, Y. (2021). Smart, hybrid and context-aware POI mobile recommender system in tourism in Oman. *Journal of Cultural Heritage Management and Sustainable Development*. https://doi.org/10.1108/JCHMSD-08-2021-0148

Agustinus Borgy Waluyo & Ling Tan. (2021). *Mobile Computing and Technology Applications in Tourism and Hospitality*. Business Science Reference.

Ali, A., & Frew, A. J. (2014). ICT for sustainable tourism: A challenging relationship? *Information Technology & Tourism*, *14*(4), 261–264. https://doi.org/10.1007/s40558-014-0020-x

Anaç, M., Gumusburun Ayalp, G., & Erdayandi, K. (2023). Prefabricated Construction Risks: A Holistic Exploration through Advanced Bibliometric Tool and Content Analysis. *Sustainability*, *15*(15), 11916. https://doi.org/10.3390/su151511916

Ansari, Y., Arwab, M., Subhan, M., Alam, M. S., Hashmi, N. I., Hisam, M. W., & Zameer, M. N. (2022). Modeling Socio-Economic Consequences of COVID-19: An Evidence From Bibliometric Analysis. *Frontiers in Environmental Science*, *10*, 941187. https://doi.org/10.3389/fenvs.2022.941187

Arega, A., & Sharma, D. P. (2023). Towards Smart and Green Features of Cloud Computing in Healthcare Services: A Systematic Literature Review. *Journal of Information Systems Engineering and Business Intelligence*, *9*(2), 161–180. https://doi.org/10.20473/jisebi.9.2.161-180

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, *11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Aubert, J., & Hocking, T. D. (2023). *CRAN, The Comprehensive R Archive Network*.

Awalurahman, H. W., Witsqa, I. H., Raharjana, I. K., & Basori, A. H. (2023). Security Aspect in Software Testing Perspective: A Systematic Literature Review. *Journal of Information Systems Engineering and Business Intelligence*, *9*(1), Article 1. https://doi.org/10.20473/jisebi.9.1.95-107

Bailón-Moreno, R., Jurado-Alameda, E., & Ruiz-Baños, R. (2006). The scientific network of surfactants: Structural analysis. *Journal of the American Society for Information Science and Technology*, *57*(7), 949–960. https://doi.org/10.1002/asi.20362

Biloš, A., & Kelić, I. (2012). *Drago Ružić, PhD, Full Professor*.

Briner, R. B., & Denyer, D. (2012). Systematic review and evidence synthesis as a practice and scholarship tool. In D. Rousseau (Ed.), *The Oxford Handbook of Evidence-Based Management* (pp. 112–129). Oxford University Press. http://ukcatalogue.oup.com

Broadus, R. N. (1987). Toward a definition of "bibliometrics." *Scientometrics*, *12*(5–6), 373–379. https://doi.org/10.1007/BF02016680

Brown, T., Park, A., & Pitt, L. (2020). A 60-Year Bibliographic Review Of the *Journal of Advertising Research*: Perspectives on Trends in Authorship, Influences, and Research Impact. *Journal of Advertising Research*, *60*(4), 353–360. https://doi.org/10.2501/JAR-2020-028

Buhalis, D., & Deimezi, O. (2004). E-Tourism Developments in Greece: Information Communication Technologies Adoption for the Strategic Management of the Greek Tourism Industry. *Tourism and Hospitality Research*, *5*(2), 103–130. https://doi.org/10.1057/palgrave.thr.6040011

Callon, M, C., J. P., & Turner, W. A, B., S. (1983). *From translations to problematic networks: An introduction to co-word analysis.* https://doi.org/doi.org/10.1177/053901883022002003

Castro, C., Ferreira, F., & Nunes, P. (2021). *Digital Technologies and Tourism as Drivers of Economic Growth in Europe and Central Asia* (pp. 341–350). https://doi.org/10.1007/978-981-33-4260-6_30

Chen, S., Law, R., Xu, S., & Zhang, M. (2020). Bibliometric and Visualized Analysis of Mobile Technology in Tourism. *Sustainability*, *12*(19), 7975. https://doi.org/10.3390/su12197975

Chen, S., Tian, D., Law, R., & Zhang, M. (2022). Bibliometric and visualized review of smart tourism research. *International Journal of Tourism Research*, *24*(2), 298–307. https://doi.org/10.1002/jtr.2501

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011a). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, *5*(1), 146–166. https://doi.org/10.1016/j.joi.2010.10.002

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011b). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology*, *62*(7), 1382–1402. https://doi.org/10.1002/asi.21525

Cristobal-Fransi, E., Daries-Ramon, N., Mariné-Roig, E., & Martin-Fuentes, E. (2017). Implementation of Web 2.0 in the snow tourism industry: Analysis of the online presence and e-commerce of ski resorts. *Spanish Journal of Marketing - ESIC*, *21*(2), 117–130. https://doi.org/10.1016/j.sjme.2017.06.002

Daries, N., Cristobal-Fransi, E., Ferrer-Rosell, B., & Marine-Roig, E. (2018). Maturity and development of high-quality restaurant websites: A comparison of Michelin-starred

restaurants in France, Italy and Spain. *International Journal of Hospitality Management*, *73*, 125–137. https://doi.org/10.1016/j.ijhm.2018.02.007

Della Corte, V., Del Gaudio, G., Sepe, F., & Sciarelli, F. (2019). Sustainable Tourism in the Open Innovation Realm: A Bibliometric Analysis. *Sustainability*, *11*(21), 6114. https://doi.org/10.3390/su11216114

Dieck, M. C. T., Dieck, D. T., & Jung, T. (2021). Exploring Usability and Gratifications for Virtual Reality Applications at Festivals. *Event Management*, *25*(6), 585–599. https://doi.org/10.3727/152599521X16106577965152

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Donthu, N., Kumar, S., & Pattnaik, D. (2020). Forty-five years of Journal of Business Research: A bibliometric analysis. *Journal of Business Research*, *109*, 1–14. https://doi.org/10.1016/j.jbusres.2019.10.039

Duplančić Leder, T., Baučić, M., Leder, N., & Gilić, F. (2023). Optical Satellite-Derived Bathymetry: An Overview and WoS and Scopus Bibliometric Analysis. *Remote Sensing*, *15*(5), 1294. https://doi.org/10.3390/rs15051294

Femenia-Serra, F., Neuhofer, B., & Ivars-Baidal, J. A. (2019). Towards a conceptualisation of smart tourists and their role within the smart destination scenario: 智慧型旅游者概念化及其在智慧目的地场景中的角色. *Service Industries Journal*, *39*(2), 109–133. https://doi.org/10.1080/02642069.2018.1508458

Ferrara, C., Pierdicca, R., Balestra, M., Mignani, C., Frontoni, E., & Cavicchi, A. (2021). *ICTS AND MOBILE APPLICATIONS FOR PROMOTING TOURISM DESTINATIONS: THE CASE OF SMART MARCA APP*. 229–245. https://doi.org/10.20867/tosee.06.16

Florido-Benítez, L. (2022). International mobile marketing: A satisfactory concept for companies and users in times of pandemic. *Benchmarking: An International Journal*, *29*(6), 1826–1856. https://doi.org/10.1108/BIJ-06-2021-0303

Gavalas, D., & Kenteris, M. (2011). A web-based pervasive recommendation system for mobile tourist guides. *Personal and Ubiquitous Computing*, *15*(7), 759–770. https://doi.org/10.1007/s00779-011-0389-x

Ghaleb, E. A. A., Dominic, P. D. D., Fati, S. M., Muneer, A., & Ali, R. F. (2021). The Assessment of Big Data Adoption Readiness with a Technology–Organization–Environment Framework: A Perspective towards Healthcare Employees. *Sustainability*, *13*(15), 8379. https://doi.org/10.3390/su13158379

Ghandour, A., Kintonova, A., Demidchik, N., & Sverdlikova, E. (2021). Solving Tourism Management Challenges by Means of Mobile Augmented Reality Applications: *International Journal of Web-Based Learning and Teaching Technologies*, *16*(6), 1–16. https://doi.org/10.4018/IJWLTT.293280

Gibson, C. (2021). Critical tourism studies: New directions for volatile times. *Tourism Geographies*, *23*(4), 659–677. https://doi.org/10.1080/14616688.2019.1647453

Glanzel, W. (2001). National Characteristics In International Scientific Co-Authorship Relations. *Scientometrics*, *51*(1), 69–115. https://doi.org/10.1023/A:1010512628145

Glänzel, W., & Schubert, A. (2005). Analysing Scientific Networks Through Co-Authorship. In H. F. Moed, W. Glänzel, & U. Schmoch (Eds.), *Handbook of Quantitative Science and Technology Research* (pp. 257–276). Kluwer Academic Publishers. https://doi.org/10.1007/1-4020-2755-9_12

Guler, A. T., Waaijer, C. J. F., Mohammed, Y., & Palmblad, M. (2016). Automating bibliometric analyses using Taverna scientific workflows: A tutorial on integrating Web Services. *Journal of Informetrics*, *10*(3), 830–841. https://doi.org/10.1016/j.joi.2016.05.002

Hamaguchi, Y. (2021). Does the trade of aviation emission permits lead to tourism-led growth and sustainable tourism? *Transport Policy*, *105*, 181–192. https://doi.org/10.1016/j.tranpol.2021.03.012

Jarrar, Y. (2020). Technological readiness index (TRI) and the intention to use smartphone apps for tourism: A focus on indubai mobile tourism app. *International Journal of Data and Network Science*, *4*(3), 297–304. https://doi.org/10.5267/j.ijdns.2020.6.003

Jeon, H.-M., Ali, F., & Lee, S.-W. (2019). Determinants of consumers' intentions to use smartphones apps for flight ticket bookings. *The Service Industries Journal*, *39*(5–6), 385–402. https://doi.org/10.1080/02642069.2018.1437908

Johnson, A.-G., & Samakovlis, I. (2019). A bibliometric analysis of knowledge development in smart tourism research. *Journal of Hospitality and Tourism Technology*.

Kenekayoro, P. (2020). Author and Keyword Bursts as Indicators for the Identification of Emerging or Dying Research Trends. *Journal of Scientometric Research*, *9*(2), 120–126. https://doi.org/10.5530/jscires.9.2.15

Kenteris, M., Gavalas, D., & Economou, D. (2009). An innovative mobile electronic tourist guide application. *Personal and Ubiquitous Computing*, *13*(2), 103–118. https://doi.org/10.1007/s00779-007-0191-y

Kessler, M. M. (1963). Bibliographic coupling between scientific papers. *American Documentation*, *14*(1), 10–25. https://doi.org/10.1002/asi.5090140103

Kharchenko, D. (2023). Content and Bibliometric Analysis of Education as a Competitive Advantage of Business. *Business Ethics and Leadership*, *7*(2), 99–108. https://doi.org/10.21272/bel.7(2).99-108.2023

Kim, D., & Kim, S. (2017a). The Role of Mobile Technology in Tourism: Patents, Articles, News, and Mobile Tour App Reviews. *Sustainability*, *9*(11), Article 11. https://doi.org/10.3390/su9112082

Kim, D., & Kim, S. (2017b). The Role of Mobile Technology in Tourism: Patents, Articles, News, and Mobile Tour App Reviews. *Sustainability*, *9*(11), Article 11. https://doi.org/10.3390/su9112082

Kim, H., & So, K. K. F. (2022). Two decades of customer experience research in hospitality and tourism: A bibliometric analysis and thematic content analysis. *International Journal of Hospitality Management*, *100*, 103082. https://doi.org/10.1016/j.ijhm.2021.103082

Kim, M. J., & Hall, C. M. (2019). A hedonic motivation model in virtual reality tourism: Comparing visitors and non-visitors. *International Journal of Information Management*, *46*, 236–249. https://doi.org/10.1016/j.ijinfomgt.2018.11.016

Knani, M., Echchakoui, S., & Ladhari, R. (2022). Artificial intelligence in tourism and hospitality: Bibliometric analysis and research agenda. *International Journal of Hospitality Management*, *107*, 103317. https://doi.org/10.1016/j.ijhm.2022.103317

Kuo, T.-S., Huang, K.-C., Quyet Nguyen, T., & Hung Nguyen, P. (2019). ADOPTION OF MOBILE APPLICATIONS FOR IDENTIFYING TOURISM DESTINATIONS BY TRAVELLERS: AN INTEGRATIVE APPROACH. *Journal of Business Economics and Management*, *20*(5), 860–877. https://doi.org/10.3846/jbem.2019.10448

Leung, D., Law, R., van Hoof, H., & Buhalis, D. (2013). Social Media in Tourism and Hospitality: A Literature Review. *Journal of Travel & Tourism Marketing*, *30*(1–2), 3–22. https://doi.org/10.1080/10548408.2013.750919

Leung, X. Y., Sun, J., & Bai, B. (2017). Bibliometrics of social media research: A co-citation and co-word analysis. *International Journal of Hospitality Management*, *66*, 35–45. https://doi.org/10.1016/j.ijhm.2017.06.012

Li, H., Wang, Q., Zhang, L., & Cai, D. (2022). Big Data in China Tourism Research: A Systematic Review of Publications from English Journals. *Journal of China Tourism Research*, *18*(3), 453–471. https://doi.org/10.1080/19388160.2022.2049943

Li, X. (2019). *Space-time distribution model of visitor flow in tourism culture construction via back propagation neural network model*. https://doi.org/10.1007/s00779-019-01342-w

Li, Y., Yang, S., Zhang, S., & Zhang, W. (2019). Mobile social media use intention in emergencies among Gen Y in China: An integrative framework of gratifications, task-technology fit, and media dependency. *Telematics and Informatics*, *42*, 101244. https://doi.org/10.1016/j.tele.2019.101244

Lin, S.-Y., Juan, P.-J., & Lin, S.-W. (2020). A TAM Framework to Evaluate the Effect of Smartphone Application on Tourism Information Search Behavior of Foreign Independent Travelers. *Sustainability*, *12*(22), 9366. https://doi.org/10.3390/su12229366

Liu, F., Janssens, D., Cui, J., Wets, G., & Cools, M. (2015). Characterizing activity sequences using profile Hidden Markov Models. *Expert Systems with Applications*, *42*(13), 5705–5722. Scopus. https://doi.org/10.1016/j.eswa.2015.02.057

Martins, A. M., & Casais, B. (2019). Determinants for value creation in mobile apps within the tourist experience: An exploratory study in a Northern City in Portugal. In *Handbook of Research on Social Media Applications for the Tourism and Hospitality Sector* (pp. 212–230). Scopus. https://doi.org/10.4018/978-1-7998-1947-9.ch013

Martorell Cunill, O., Socias Salvá, A., Otero Gonzalez, L., & Mulet-Forteza, C. (2019). Thirty-fifth anniversary of the International Journal of Hospitality Management: A bibliometric overview. *International Journal of Hospitality Management*, *78*, 89–101. https://doi.org/10.1016/j.ijhm.2018.10.013

McCain, K. W. (1991). Mapping economics through the journal literature: An experiment in journal cocitation analysis. *Journal of the American Society for Information Science*, *42*(4), 290–296. https://doi.org/10.1002/(SICI)1097-4571(199105)42:4<290::AID-ASI5>3.0.CO;2-9

Mohamad, M. A., Radzi, S. M., & Hanafiah, M. H. (2021). Understanding tourist mobile hotel booking behaviour: Incorporating perceived enjoyment and perceived price value in the modified Technology Acceptance Model. *Tourism & Management Studies*, *17*(1), 19–30. https://doi.org/10.18089/tms.2021.170102

Molina-Collado, A., Gómez-Rico, M., Sigala, M., Molina, M. V., Aranda, E., & Salinero, Y. (2022). Mapping tourism and hospitality research on information and communication technology: A bibliometric and scientific approach. *Information Technology & Tourism*, *24*(2), 299–340. https://doi.org/10.1007/s40558-022-00227-8

Mulet-Forteza, C., Martorell-Cunill, O., Merigó, J. M., Genovart-Balaguer, J., & Mauleon-Mendez, E. (2018). Twenty five years of the *Journal of Travel & Tourism Marketing*: A bibliometric ranking. *Journal of Travel & Tourism Marketing*, *35*(9), 1201–1221. https://doi.org/10.1080/10548408.2018.1487368

Naramski, M. (2020). The Application of ICT and Smart Technologies in Polish Museums—Towards Smart Tourism. *Sustainability*, *12*(21), 9287. https://doi.org/10.3390/su12219287

Navío-Marco, J., Ruiz-Gómez, L. M., & Sevilla-Sevilla, C. (2018). Progress in information technology and tourism management: 30 years on and 20 years after the internet - Revisiting Buhalis & Law's landmark study about eTourism. *Tourism Management*, *69*, 460–470. https://doi.org/10.1016/j.tourman.2018.06.002

Navio-Marco, J., Ruiz-Gómez, L. M., & Sevilla-Sevilla, C. (2019). Progress in wireless technologies in hospitality and tourism. *Journal of Hospitality & Tourism Technology*, *10*(4), 587–599. https://doi.org/10.1108/JHTT-07-2018-0061

Ndou, V., Mele, G., Hysa, E., & Manta, O. (2022). Exploiting Technology to Deal with the COVID-19 Challenges in Travel & Tourism: A Bibliometric Analysis. *Sustainability (2071-1050)*, *14*(10), 5917–5917. https://doi.org/10.3390/su14105917

Neff, M. W., & Corley, E. A. (2009). 35 years and 160,000 articles: A bibliometric exploration of the evolution of ecology. *Scientometrics*, *80*(3), 657–682. https://doi.org/10.1007/s11192-008-2099-3

Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Smart technologies for personalized experiences: A case study in the hospitality domain. *Electronic Markets*, *25*(3), 243–254. https://doi.org/10.1007/s12525-015-0182-1

Ortega-Fraile, F. J., Ríos-Martín, M. Á., & Ceballos-Hernandez, C. (2018). Tourism and mobile devices: Provenance of academic research through a bibliometric study. *Journal of Tourism Analysis: Revista de Análisis Turístico*, *25*(1), 91–112. https://doi.org/10.1108/JTA-02-2018-0008

Palos-Sanchez, P., Saura, J. R., & Correia, M. B. (2021). Do tourism applications' quality and user experience influence its acceptance by tourists? *Review of Managerial Science*, *15*(5), 1205–1241. https://doi.org/10.1007/s11846-020-00396-y

Peters, H. P. F., & Van Raan, A. F. J. (1991). Structuring scientific activities by co-author analysis: An expercise on a university faculty level. *Scientometrics*, *20*(1), 235–255. https://doi.org/10.1007/BF02018157

Porter, M. F. (1980). *An algorithm for suffix stripping*.

Qian, J., Law, R., Wei, J., & Wu, Y. (2019). Trends in Global Tourism Studies: A Content Analysis of the Publications in *Tourism Management*. *Journal of Quality Assurance in Hospitality & Tourism*, *20*(6), 753–768. https://doi.org/10.1080/1528008X.2019.1658149

R Core Team. (2016). *R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing.* https://www.r-project.org/

Rahimizhian, S., Ozturen, A., & Ilkan, M. (2020a). Emerging realm of 360-degree technology to promote tourism destination. *Technology in Society*, *63*, 101411. https://doi.org/10.1016/j.techsoc.2020.101411

Rahimizhian, S., Ozturen, A., & Ilkan, M. (2020b). Emerging realm of 360-degree technology to promote tourism destination. *Technology in Society*, *63*, 101411. https://doi.org/10.1016/j.techsoc.2020.101411

Rahmadhan, M. A. W. P., Sensuse, D. I., Suryono, R. R., & Kautsarina, K. (2023). Trends and Applications of Gamification in E-Commerce: A Systematic Literature Review. *Journal of Information Systems Engineering and Business Intelligence*, *9*(1), Article 1. https://doi.org/10.20473/jisebi.9.1.28-37

Rasli, M. A. M., Zulkefli, N. H., Salleh, N. S. A., Ghani, F. A., Razali, N. A., & Idris, R. S. N. R. (2020). Determinants of Behavioural Intention on Online Food Delivery (OFD) APPS: Extending UTAUT2 with Information Quality. *Global Business & Management Research*, *12*(4), 679–689.

Reddy, A. R., Stinson, H., Alcamo, A. M., Pinto, N. P., & Fitzgerald, J. C. (2023). Pediatric Sepsis Requiring Intensive Care Admission: Potential Structured Follow-Up Protocols to Identify and Manage New or Exacerbated Medical Conditions. *Risk Management and Healthcare Policy*, *Volume 16*, 1881–1891. https://doi.org/10.2147/RMHP.S394458

Rialp, A., Merigó, J. M., Cancino, C. A., & Urbano, D. (2019). Twenty-five years (1992–2016) of the International Business Review: A bibliometric overview. *International Business Review*, *28*(6), 101587. https://doi.org/10.1016/j.ibusrev.2019.101587

Rosário, A. T., Raimundo, R. G., & Cruz, R. (2021). *The Impact of Digital Technologies on Marketing and Communication in the Tourism Industry:* 255–267. https://doi.org/10.4018/978-1-7998-7095-1.ch015

Sadiq, M., & Adil, M. (2021). Ecotourism related search for information over the internet: A technology acceptance model perspective. *Journal of Ecotourism*, *20*(1), 70–88. https://doi.org/10.1080/14724049.2020.1785480

Santamaria-Granados, L., Mendoza-Moreno, J. F., & Ramirez-Gonzalez, G. (2021). Tourist Recommender Systems Based on Emotion Recognition—A Scientometric Review. *Future Internet*, *13*, 2–2. https://doi.org/10.3390/fi13010002

Saprikis, V., & Avlogiaris, G. (2021). Factors That Determine the Adoption Intention of Direct Mobile Purchases through Social Media Apps. *Information (2078-2489)*, *12*(11), 449. https://doi.org/10.3390/info12110449

Saravanan, S., & Sadhu Ramakrishnan, B. (2016). Preserving privacy in the context of location based services through location hider in mobile-tourism. *Information Technology & Tourism*, *16*(2), 229–248. https://doi.org/10.1007/s40558-016-0056-1

Sepehri, Y., & Gholinejad Pirbazari, A. (2021). Designing a Mobile Application for Tourism in the Architectural Heritage of Tehran. *Tourism and Heritage Journal*, *3*, 29–38. https://doi.org/10.1344/THJ.2021.3.3

Singh, N., Sinha, N., & Liébana-Cabanillas, F. J. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, *50*, 191–205. https://doi.org/10.1016/j.ijinfomgt.2019.05.022

Small, H. (2006). Tracking and predicting growth areas in science. *Scientometrics*, *68*(3), 595–610. https://doi.org/10.1007/s11192-006-0132-y

Sun, Q., & Xu, B. (2019). Mobile Social Commerce: Current State and Future Directions. *Journal of Global Marketing*, *32*(5), 306–318. https://doi.org/10.1080/08911762.2019.1620902

Talwar, S., Dhir, A., Kaur, P., & Mäntymäki, M. (2020). Why do people purchase from online travel agencies (OTAs)? A consumption values perspective. *International Journal of Hospitality Management*, *88*, 102534. https://doi.org/10.1016/j.ijhm.2020.102534

Tan, G. W.-H., & Ooi, K.-B. (2018). Gender and age: Do they really moderate mobile tourism shopping behavior? *Telematics & Informatics*, *35*(6), 1617–1642. https://doi.org/10.1016/j.tele.2018.04.009

tom Dieck, M. C., & Jung, T. (2018). A theoretical model of mobile augmented reality acceptance in urban heritage tourism. *Current Issues in Tourism*, *21*(2), 154–174. https://doi.org/10.1080/13683500.2015.1070801

Tze Kiat Lui, Zainuldin, M. H., Kwang-Jing Yii, Lin-Sea Lau, & You-How Go. (2021). Consumer Adoption of Alipay in Malaysia: The Mediation Effect of Perceived Ease of Use and Perceived Usefulness. *Pertanika Journal of Social Sciences & Humanities*, *29*(1), 389–418. https://doi.org/10.47836/pjssh.29.1.22

Upham, S. P., & Small, H. (2010). Emerging research fronts in science and technology: Patterns of new knowledge development. *Scientometrics*, *83*(1), 15–38. https://doi.org/10.1007/s11192-009-0051-9

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Varshney, U. (2003). Issues, requirements and support for location-intensive mobile commerce applications. *International Journal of Mobile Communications*, *1*(3), 247. https://doi.org/10.1504/IJMC.2003.003492

Vasant, P., & M., K. (Eds.). (2017). *Handbook of Research on Holistic Optimization Techniques in the Hospitality, Tourism, and Travel Industry:* IGI Global. https://doi.org/10.4018/978-1-5225-1054-3

Verma, P. (2020). The effect of presentation, product availability and ease upon transaction reliability for online food delivery aggregator applications – moderated mediated model. *Journal of Foodservice Business Research*, *23*(4), 285–304. https://doi.org/10.1080/15378020.2020.1761586

Vinodan, A., & Meera, S. (2020). M-tourism in India: Symbolic versus intended adoption. *IIMB Management Review*, *32*(2), 177–188. Scopus. https://doi.org/10.1016/j.iimb.2019.10.004

Vu, H. Q., Law, R., & Li, G. (2019). Breach of traveller privacy in location-based social media. *Current Issues in Tourism*, *22*(15), 1825–1840. https://doi.org/10.1080/13683500.2018.1553151

Wang, H.-Y., Liao, C., & Yang, L.-H. (2013). What Affects Mobile Application Use? The Roles of Consumption Values. *International Journal of Marketing Studies*, *5*(2), p11. https://doi.org/10.5539/ijms.v5n2p11

White, H. D., & Griffith, B. C. (1981). Author cocitation: A literature measure of intellectual structure. *Journal of the American Society for Information Science*, *32*(3), 163–171. https://doi.org/10.1002/asi.4630320302

Wong, J. W. C. (2020). Sharing memorable tourism experiences on mobile social media and how it influences further travel decisions. *Current Issues in Tourism*, *23*(14), 1773–1787. https://doi.org/10.1080/13683500.2019.1649372

Xiang, Z., Fesenmaier, D. R., & Werthner, H. (2021). Knowledge Creation in Information Technology and Tourism: A Critical Reflection and an Outlook for the Future. *Journal of Travel Research*, *60*(6), 1371–1376. https://doi.org/10.1177/0047287520933669

Ye, B. H., Ye, H., & Law, R. (2020). Systematic Review of Smart Tourism Research. *Sustainability*, *12*(8), 3401. https://doi.org/10.3390/su12083401

Zeng, B., & Gerritsen, R. (2014). What do we know about social media in tourism? A review. *Tourism Management Perspectives*, *10*, 27–36. https://doi.org/10.1016/j.tmp.2014.01.001

Zhou, B., Wen, Z., & Yang, Y. (2021). Agglomerating or dispersing? Spatial effects of high-speed trains on regional tourism economies. *Tourism Management, 87*, 104392. https://doi.org/10.1016/j.tourman.2021.104392

Zhou, T., Song, Y., & Zhou, P. (2022). Continued use intention of travel apps: From the perspective of control and motivation. *Technology Analysis & Strategic Management*, *34*(6), 703–716. https://doi.org/10.1080/09537325.2021.1916457