

How Far Mobile Learning Has Gone Through in Tourism and Hospitality Education: A Bibliometric Analysis

Journal of Tourism, Hospitality & Culinary Arts (JTHCA)
2024, Vol. 16 (1) pp 956-967
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UITM Press
Submit date: 15th August 2023
Accept date: 13th Sept 2023
Publish date: 30th April 2024

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Proposed citation:

Salleh, S., Lee, S. H., & Mikeng, D. (2024). How Far Mobile Learning Has Gone Through in Tourism and Hospitality Education: A Bibliometric Analysis. *Journal of Tourism, Hospitality & Culinary Arts*, 16(1), 956-967.

Abstract

The advent of mobile learning within the educational system has created numerous opportunities in the field, which has led to extensive research publication. However, not much is known about the trend of mobile learning trend in the field of Tourism and Hospitality education. Hence, this research aims to provide a bibliometric overview of the educational publications pertaining to mobile learning in Tourism and Hospitality education indexed by WOS databases from the years 2013 to 2023. A total of 22 publications were retrieved and included in the bibliometric analysis. The results reveal a prevailing trend in mobile learning within the field of Tourism and Hospitality education, demonstrating that the number of publications increased significantly during the outbreak of the Covid-19 pandemic. A significant number of publications were found to be published from China and Taiwan. The present study also identified themes based on the keywords generated from the bibliometric analysis, which emphasised the potential of social media as a mobile learning platform in the context of Tourism and Hospitality education. The present findings set a foundation for future researchers and educationists to explore the use of mobile learning for different educational settings, curriculum designs, and target learners in the present context.

Keywords:

Mobile Learning, Bibliometric Analysis, Tourism and Hospitality Education

1 Introduction

The widespread integration of Information and Communication Technology (ICT) has had a significant impact on various aspects of people's daily lives. This influence ranges from the use of personal devices to the implementation of organisational applications in both study and work. This ICT revolution has brought significant changes that offer numerous benefits and opportunities. One particular area that has encountered notable transformation is the field of education, which has encountered a profound evolution in recent times due to the advancements in technology. These developments have led to a paradigm shift in teaching methods, with a move away from traditional approaches towards the integration of technology, particularly mobile technology, in the classroom (Khan & Gupta, 2022; Goundar & Kumar, 2022). Due to the dynamic teaching and learning process that technology offers, knowledge and skills can now be delivered to the students through online learning platforms, video conferences, and voice calls (Halili, 2019; Sharma, 2019). Based on these phenomena, various teaching and learning approaches have been employed to ensure that meaningful learning experiences occur in the educational setting.

Mobile learning, also known as m-learning, is an instructional approach that leverages mobile technology to facilitate learning flexibility. In other words, mobile learning has revolutionised the educational landscape by providing educators and learners convenient and continuous access to expertise skills through electronic materials and mobile devices. Mobile devices such as smartphones, notebooks, tablets, and other similar devices have emerged as popular choices for mobile learning owing to their portable nature and user-friendly features (Chavoshi & Hamidi, 2019). Moreover, mobile learning provides access to a vast range of educational content on a global scale, which fosters interaction among learners who may be geographically separated, ultimately enhancing educational efficacy (El-Masri & Tarhini, 2017). Previous research findings have highlighted the advantages of mobile learning. One of the advantages is that it provides students with instant feedback (Yilmaz, Suner & Yilmaz, 2020), enhance peers' interaction (Gupta, Khan & Agarwal, 2021), improve learners' learning efficiency (Tsai et al., 2017) and bridges the gap between classroom and authentic learning experiences (Thiagraj & Abdul Karim, 2020). As online learning techniques gain increasing importance, mobile learning has rapidly transitioned from being an optional approach to becoming a necessity in the current educational landscape (Dhawan, 2020). In addition, the Covid-19 pandemic had acted as a catalyst for the acceleration of technology integration within the education sector. The pandemic's unprecedented challenges had prompted educational institutions to swiftly adopt and adapt various technological tools and platforms, including mobile learning, to address the learning of the students. This played a role in expediting the transformation of traditional learning environments into more flexible and digitally interconnected systems that operate at a faster pace.

In the context of tourism and hospitality education, several studies conducted over the past few years have underscored the significance of mobile learning that aligns

with the transformative changes driven by mobile learning technologies in the broader field of education in the 21st century (Tu & Hwang, 2020; Arrasyid et al, 2020). However, previous studies showed that limited research has been conducted on the trends of implementing mobile learning in teaching and learning in tourism and hospitality education (Tu & Hwang, 2020). Therefore, this research seeks to offer a bibliometric perspective on the use of mobile learning within the tourism and hospitality education indexed by Web of Science (WoSCC) in the Social Science Citation Index (SSCI), Science Index Expanded (SCI-Expanded) and Arts and Humanities Citation Index (A&HCI) databases from 2013 to 2023. Hence, this study reports the following research aspects: (1) the features of the document types, (2) the articles with the most citations, (3) the publication performance at the level of journals, countries, and institutions, and (4) the research focus on the field. The research questions were as follows.

RQ1: What are the characteristics of mobile learning publications in tourism and hospitality education indexed in WoSCC from 2013 to 2023 in terms of research domains and number of publications and citations?

RQ2: What is the main research focus that was explored in the literature concerning mobile learning in tourism and hospitality education?

Based on the bibliometric analysis, the results could serve as guidance for future researchers and practitioners who are involved in the mobile learning in tourism and hospitality education. Moreover, this research points out several research issues in mobile learning within the tourism and hospitality education as a reference for future research in this field. This research paper is structured as follows: introduction; materials and methods; results; discussion and conclusions.

2 Literature Review

2.1 Mobile Learning in Education

In Malaysia, leveraging the use of ICT has become one of the main strategies to improve the quality of education and prepare future Malaysians for the 21st-century workforce. The ICT revolution has transformed the learning and teaching environment through the widespread adoption of technological devices such as smartphones, tablets, mobile phones, Personal Digital Assistants (PDA), and other mobile tools as learning aids, which promotes the self-directed approach to learning (Mustaffa et al., 2020).

The unique and easily accessible features of mobile devices such as smartphones and the internet offer advantages when implemented in teaching and learning. This has been acknowledged by scholars who posit that the concept of mobile learning, which allows for self-directed learning opportunities, provides space for students to explore and access information easily and without limitation (Hao et al., 2019; Klimova & Polakova 2020). The use of mobile devices as a new teaching method provides numerous benefits, as it enables students and teachers to access primary learning

materials, communicate, and allow students to share learning experiences with teachers (Eady & Lockyer, 2013). This aligns with the primary objective of mobile learning, which is to provide students with the ability to assimilate learning anywhere and at any time. Mobile learning can also establish relationships between teachers and students, students with other students, and students with learning materials on global online platforms during the teaching and learning process (Saleh & Siraj, 2016). In the context of hospitality and tourism education, the adoption of mobile learning strategies can enhance the quality and accessibility of the educational content to prepare students to meet the demands of the 21st-century workforce in this dynamic industry.

3 Methodology

This study employs bibliometric analysis to explore the characteristics and trends of mobile learning in tourism and hospitality education. Bibliometric analysis refers to the collection, organisation and analysis of bibliographic information derived from scholarly publications (d et al., 2019; Verbeek et al., 2022). In addition to basic descriptive statistics such as publication journals, publication year, and author classification (Wu & Wu, 2017), bibliometric analysis offers more advanced techniques including document co-citation analysis. This study involved two bibliometric analysis approaches. The first bibliometric approach was performance analysis, which focuses on evaluating the activities of scientific entities such as countries, universities, institutions, and their influences (Noyons, Moed & Van Raan, 1999). In this study, performance analysis was conducted by utilising various performance and citation indicators. Meanwhile, for the second bibliometric approach, scientific mapping was used to illustrate the conceptual framework of scientific research (Zupic & Cater, 2015). In this research, scientific mapping was employed for keyword co-occurrence analysis, which identified the connections among concepts that appear together in document titles, abstracts, or keywords. These bibliometric analysis approaches create a network of themes found in diverse publications and shows how they are connected to illustrate a visual representation of the main idea. In this study, co-occurrence analysis was used to analyse the keywords used by the authors and identify common patterns and connections (Zupic & Cater, 2015).

WoSSC has been acknowledged as a comprehensive database for scientific and scholarly publications, therefore, it was utilised in this bibliometric analysis study to identify documents that relate to mobile learning in tourism and hospitality education. Data were extracted from January 2013 to July 2023, from the Social Science Citation Index (SSCI), Science Index Expanded (SCI-Expanded), and Arts and Humanities Citation Index (A&HCI) databases. The study employed a screening sequence to determine the search terms for article retrieval. The study was initiated by querying the WoS database with “mobile learning” OR “m-learning” as the search term in the “All Field” from year 2013 to 2023, thereby generating 1698 results. Afterwards, the query string was revised so that the search terms “mobile learning” OR “m-learning” focused on education. This process yielded 1417 results. Later, the query string was adjusted to

prioritise the search terms “mobile learning” OR “m-learning” that focused on tourism and hospitality education. The process yielded 22 results, which were additionally scrutinised to include only research articles in English. Therefore, this study incorporated all articles from the WoS database that related to mobile learning in tourism and hospitality education from January 2013 to July 2023. Figure 1 illustrates the search process.

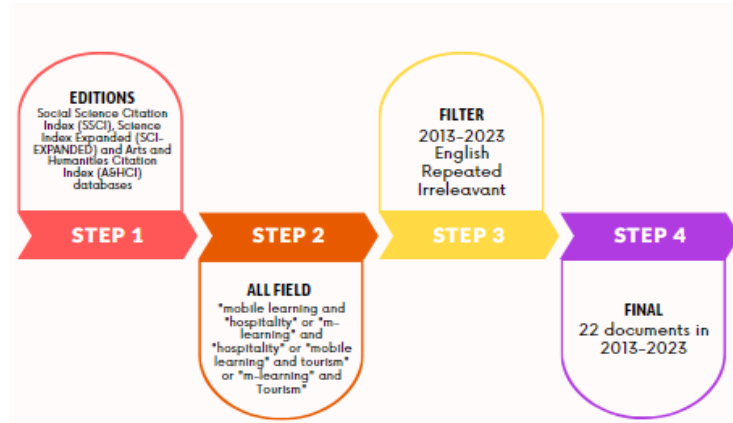


Figure 1: The Search Process for Mobile Learning Publications in Tourism and Hospitality Education

4 Findings

4.1 Research Domains, Countries and Number of Publications and Citations

Data from SSCI, SCI-Expanded and A&HCI were exported to Microsoft Excel, along with the sum citations for each publication. The updated journal citation report (24 July 2023) was used to extract the impact factors for the journals. The distribution of mobile learning research in tourism and hospitality according to citations per year and publication year are presented in Figure 2 and Figure 3 respectively. By looking at the distribution, it shows that the research trend in this field is on steady rise, with each passing year witnessing a consistent increase in citations compared to the previous years. The overall citation trend shows a steady increase from 2015 to 2022. However, there is a noticeable drop in 2023, which may be attributed to the fact that the citations only cover the first six months of that year. It is expected that the trend of increasing citations will continue when the citation report in 2023 is completed. A detailed review of the data shows that research publications focusing on mobile learning in tourism and hospitality covered seven countries, which were mainly China and Taiwan.

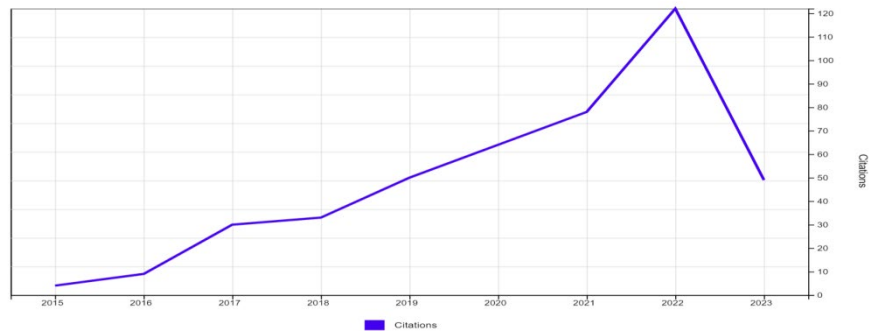


Figure 2: Number of citations per year

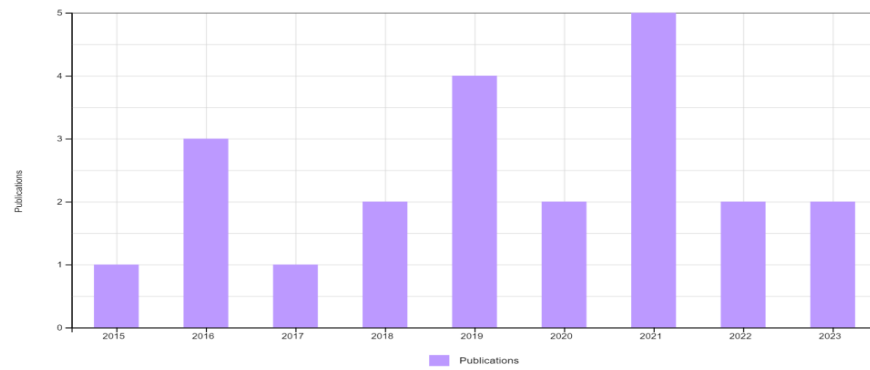


Figure 3: Number of publications per year

Studies on mobile learning in tourism and hospitality education have garnered attention from various specialised areas of investigation within the broader spectrum of knowledge. Figure 4 presents the research domains with more than 10 domains of published articles. Education Educational Research and Hospitality Leisure Sport Tourism were among the most relevant areas in mobile learning in tourism and hospitality education.



Figure 4: Research areas with more than 10 published articles

4.2 Research Focus

The analysis of keywords found in research publications can prove advantageous in identifying prevailing themes under study within a particular field or which is associated with a specific line of research. To reveal the major themes that have been addressed in mobile learning publications in tourism and hospitality education, co-occurrence analysis was conducted on authors' keywords for publication within the dataset. In the data set of 22 publications, a total of 73 keywords were used and only those with at least 2 occurrences were included in the analysis. This paper used the VOS viewer software tool to visualise the relationship between the keywords extracted from the documents selected. In the resulting map (Figure 5), each keyword or term is represented as a node, and the strength of the relationship between them is represented by the thickness of the connecting lines. The strength of a link indicates the number publications in which two terms occur together. Keywords were grouped into clusters and were distinguished by node colour based on co-occurrence frequency. These clusters indicate the main focuses of research pertaining to mobile learning in the field of tourism and hospitality education.

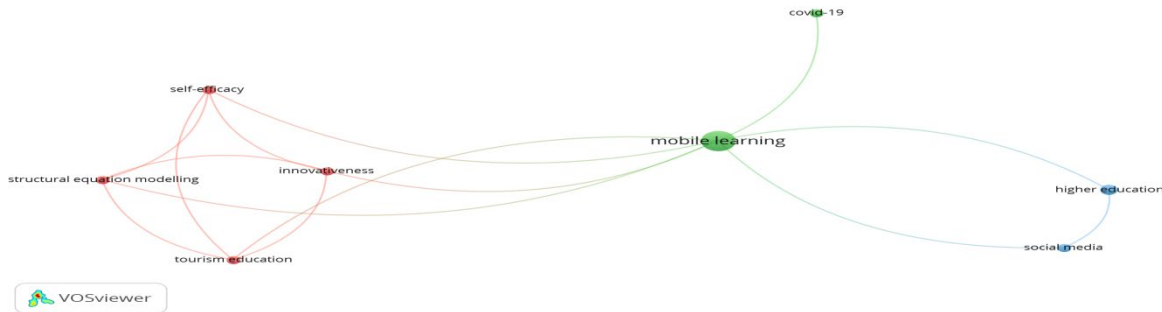


Figure 5: Author keywords co-occurrence of mobile learning related research in the field of tourism and hospitality education

The VOS viewer results offer valuable insights into the co-occurrence of author keywords in mobile learning research within the realm of tourism and hospitality education. Among the identified keywords, “Mobile Learning” emerged as the focal point with a notable occurrence of 12 times and a high total link strength of 14. Moreover, this analysis demonstrates the significance of certain themes in the field, such as “Innovativeness”, “Self-efficacy”, and “Tourism Education”, which despite their relatively lower frequency exhibited robust connections with other keywords, which was evident from the high total link strength value of 8. In contrast, “Higher Education” and “Structural Equation Modelling” exhibited moderate associations, with 3 occurrences and a total link strength of 4 each. Additionally, keywords like “Social Media” and “Covid-19” demonstrated a more moderate level of linkage, with 2 occurrences and total link strengths of 4 and 2, respectively.

Due to the limited number of publications focusing on mobile learning in tourism and hospitality education, the results of this analysis do not reveal any substantial clusters. Within the available publications, most previous studies focused on students in higher education, specifically in tourism programs. Moreover, the analysis shows that social media is the primary platform for mobile learning at this level. The primary research areas are (1) innovative approaches to mobile learning in teaching and (2) assessing user self-efficacy in mobile learning processes. The analysis also indicates that structural equation modelling was employed as the methodology to model the relationships among the variables.

5 Conclusion

The present study maps mobile learning research in tourism and hospitality education based on documents published in 2013 to 2023 and indexed in the WoSCC database (SSCI, A&HCI and SCI-Expanded). The findings show a growing interest of researchers in education for this topic since the Covid-19 pandemic has experienced an increase of 2.5 times in output in 2021, compared to 2020. Among others,

universities in both Taiwan and China had the highest rate of publication for mobile learning research in tourism and hospitality education.

In comparison to other education fields, mobile learning in the field of tourism and hospitality has shown a slow growth pattern in recent years, which diverges from the current trend in teaching and learning. There could be several reasons behind this discrepancy, such as limited research interest among tourism and hospitality educators compared to other education fields (Tu & Hwang, 2020). This may be attributed to the fact that several tourism and hospitality courses prioritise skills training over cognitive learning. In other words, the educational goals of these courses often have less relevance to activities like observation, data collection, and data analysis within the students' learning environments. Consequently, there are fewer chances to incorporate mobile devices into the learning process. Another viewpoint is that mobile learning has leveraged the field of tourism and hospitality within the Asian region (Tu & Hwang, 2020; Chen et al., 2021). Additionally, the integration of mobile learning into tourism and hospitality education can further address educational inequities among underprivileged learners, especially due to the recent Covid-19 pandemic as well as to provide opportunities for improvement in digital upskilling, self-regulated learning, and flexible teaching and learning experience for both students and educationists. The present study is also parallel with the growing trend of blended learning along with the newer generation of learners who are digitally competent. Hence, the relevance of the present study may set a precedent for future references and research, especially in tourism and hospitality education. Although there is a plethora of empirical findings for the education field, there is also a need to provide comprehensive data for tourism and hospitality education, especially in Malaysia.

Based on the bibliometric analysis performed, this present study helps to clarify the trend of educational research from years 2013 and 2023. Therefore, it is imperative to present a comprehensive view on the use of mobile learning in tourism and hospitality education for the reference of researchers, educationists, and policy makers. In view of that, the mapping of the research landscape in tourism and hospitality education in the present study provides a better understanding of the current state of research in this area. In addition, the analysis undertaken can help prepare researchers who are interested in finding possible collaborations for future investigations. Furthermore, this study provides comprehensive data that is practical for policymakers and educators. Even though the present study is based on bibliometric analysis, the data provides a foundation to further explore policies and practices in the integration of mobile learning in tourism and hospitality education. In view of that, it is imperative for policymakers to draw conclusions on how it would benefit the existing education system, students, and teachers in the present context. It offers awareness for educationists to further develop learner-centred curriculum through the dynamic of remote learning strategies, student performance, and better learning experience while also addressing issues concerning digital disparities and broadening collaboration among stakeholders. In conclusion, in the effort to leverage

mobile learning, both policy makers and educationists therefore would have to ensure their best practices are in line with the ever-changing landscape of online learning.

6 Funding

The authors would like to acknowledge the financial support from Universiti Teknologi Malaysia (Q.J130000.3853.21H82). Opinions, findings and conclusions or recommendations expressed the material are those of author and do not necessarily reflect the university.

7 About the author

Salmalina Salleh received a PhD in Management from the Universiti Teknologi Malaysia, Skudai, Johor. She has over 10 years of experience as an academician. Currently, she is a Senior Lecturer in the Department of Technical and Engineering Education, School of Education, Faculty of Social Sciences and Humanities. She is a keen researcher whose interests span several disciplines such as technology in education, social media, hospitality and tourism, inclusive education and TVET. She received several gold awards in innovation in education such as in the International University Carnival on E-Learning (IUCEL 2022) and New Academia Learning Innovation (NALI 2022).

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