Application of UI/UX in Tourism Information Service Problems :A Review

Abstract—Increased accessibility and efficiency in travel information services are in high demand as a result of technological developments. In order to better understand how UI/UX (User Interface/User Experience) design principles might help tourism information services, this study used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist technique to examine the existing literature. The research takes the form of a systematic review that looks at the ways in which UI/UX affects things like user participation, knowledge retention, and happiness. The results prove that putting the user first in UI/UX design increases the efficiency and happiness of travel resources for everyone involved. Improved information retrieval and user engagement can be achieved through the strategic use of visual design components, interactive features, and individualized experiences. The research shows how crucial it is to cater UI/UX to the specific requirements of the intended users. The importance of using the PRISMA checklist approach to perform a thorough and open literature review is also highlighted. Based on the findings of this research, tourism service providers can better apply UI/UX design concepts to their information services, resulting in a more satisfying experience for their customers. To further improve UI/UX, studies could investigate specific design methods and technological developments in the tourism information services industry. As a whole, bringing together UI and UX design principles has the potential to completely change the way people interact with the tourism business.

Additional Keywords and Phrases: Information services, Tourism, Tourism industry, Smart tourism, UI/UX, Tourism developer

1 Introduction

The travel industry is a critical industry that adds to the economy of numerous nations. The demand for online tourism information services has also increased as technology use has increased. Notwithstanding, giving an easy to understand and successful point of interaction for such administrations can challenge. Hence, the investigation of UI/Client Experience (UI/UX) plan and its application to the travel industry data administrations is a significant area of exploration. The rising significance of the travel industry and the developing pattern of involving innovation for movement arranging feature the meaning of this examination. The research could shed light on how UI/UX design principles can be used to improve user experiences and boost customer satisfaction in tourism information services. Digital tourism information services that are both effective and efficient could be developed as a result of the research, which would be beneficial to both tourists and tourism service providers. The application of UI/UX design principles in tourism information services is the subject of this mixed-methods investigation, which includes a literature review, case studies, and surveys. The research focuses on determining how well UI/UX design affects user engagement, information retrieval, and satisfaction. The application of UI/UX design principles can significantly boost the effectiveness and user satisfaction of tourism information services, according to the study's main findings. Enhancing user engagement and improving information retrieval are possible outcomes of making effective use of visual design, interactive elements, and personalized features. Additionally, the results suggest that UI/UX design should be tailored to the particular preferences and requirements of the intended audience. The paper's structure can be summarized as follows: initial, a writing survey of UI/UX plan standards with regards to the travel industry data administrations is introduced. The study's methodology, which includes the conducted case studies and surveys, is then described. The study's main findings are then discussed, and a conclusion and recommendations for future research follow. Statement of Purpose By demonstrating the efficacy of UI/UX design principles in enhancing user satisfaction, engagement, and information retrieval, this paper contributes to the field of tourism information services. The results indicate that effective and efficient tourism information services require a user-centered approach to UI/UX design.

2 LITERATURE REVIEW

In today's digital era, technology has a significant impact on the tourism industry. The use of innovation in creating tourism teaching techniques is increasingly important, considering that the use of technology can increase the effectiveness and efficiency of learning. As a result, the application of virtual tourism education is becoming a significant area of study. The use of technology in developing tourism teaching methods has been the subject of several previous studies. For example, research by Chiou and Chen (2009) regarding the application of augmented reality in tourism education and Wang, Chen, and Liang (2016) regarding the development of tourism information systems using cloud computing technology. Nonetheless, there is still room to develop a more intelligent and userfriendly tourism teaching framework. One of the key concepts related to this topic is the use of innovation in creating tourism teaching techniques. Constructivist learning theory, which emphasizes learning in which students actively create knowledge, is one such theory. Although there has been previous research addressing the use of innovation in tourism education, there are still gaps in the literature regarding the implementation of intelligent and user-accessible virtual tourism teaching frameworks. In this regard, this study aims to create and implement a virtual tourism teaching framework that is intelligent and easily accessible to users. The research hypothesis is that this system can enhance students' learning experience while increasing the effectiveness and efficiency of teaching tourism. [1] The travel industry is an industry that assumes a huge part in a nation's economy, and as innovation propels, shrewd travel applications have turned into a fundamental piece of it. The popular technology known as Location-Based Services (LBS) is used to offer users travel recommendations based on their location. An LBS-based tourist route recommendation system that can enhance users' travel experiences is the goal of

this study. Various examinations have been directed on LBSbased traveler course suggestion frameworks, including the grouping of proposal methods like cooperative sifting, contentbased separating, and mixture sifting. In tourist route recommendation systems, the applications of genetic algorithms and closest search algorithms have also been investigated. The main idea of this study is to use LBS technology to give users location-based travel recommendations. An efficient tourist route recommendation system is created by utilizing the genetic algorithm and the closest search algorithm. This study aims to compare various algorithms and methods in order to develop an effective LBS-based system for recommending tourist routes, whereas previous studies have concentrated on employing a single recommendation method and the closest search algorithm. The recommendation system's effectiveness may be compromised without comparison. As a result, the goal of this study is to create and put to the test an LBS-based system for recommending tourist routes while contrasting various algorithms and methods. This study hypothesizes that users will receive better recommendations for tourist routes from a system that employs multiple algorithms and methods. [2] The utilization of innovation in the travel industry is developing, and expanded reality (AR) is one of the well known advancements used to improve vacationer encounters. This study focuses on how to promote the Wari Willka Museum in Bolivia and get more tourists to interact with it by using AR-based applications. AR-based tourism applications, particularly those aimed at enhancing visitors' experiences at tourist attractions like museums and historical sites, have been the subject of previous research. The development of augmented reality applications to assist tourists in locating and navigating tourist attractions has been the subject of other studies. Modeling and simulation, geographic information systems (GIS), augmented reality technology, mobile computing, and other important concepts and theories are all utilized in the creation of AR-based applications. Even though a lot of research has been done on how augmented reality can be used in the tourism industry, there are still gaps and restrictions in the literature. Developing augmented reality technology has been the focus of some studies without taking into account the preferences and requirements of tourists. Moreover, hardly any examinations have investigated the utilization of AR in exhibition halls, especially in emerging nations."How can AR-based application development promote the Wari Willka Museum and improve the tourist experience at the museum?" is the study's research question. The study hypothesizes that augmented reality (AR)-based applications can increase tourists' interest in museum visits and improve their museum exploration experience. Tourists will have a new way to explore the museum and learn about its history and culture by implementing AR-based applications. [3] The significance of mobile applications in the digital age, particularly in the tourism sector, is the subject of the literature review. In order to enhance travel experiences and increase user satisfaction, mobile tourism applications must design for the user experience (UX). To address shortcomings in previous research, the article focuses on the application of discovery, formative, and evaluative methods in tour guide applications. In the creation of travel mobile applications, the concept of user experience (UX) design is an essential one. It includes user requirements and goals, interaction, aesthetics, and usability. It is necessary to employ discovery, formative, and evaluative methods in the UX design process to guarantee that it meets the requirements of users. The local escort administration application, a versatile application that fills in as a local escort for clients, is connected with this idea. There are a number of gaps and limitations in the previous literature, including the absence of systematic evaluation and testing strategies for the creation of mobile travel applications. What's more, a few examinations have not investigated the capability of advancements like expanded reality in versatile travel applications and stand out to explicit client prerequisites. The article's research question is how user experience design can help tour guide applications better meet the needs of travelers. The examination speculation is that the utilization of revelation, developmental, and evaluative techniques in creating local area expert applications can make applications that better line up with client needs and improve the traveler experience. [4] The utilization of Android applications has emerged as a significant tool in the planning and development of the tourism industry in Bangladesh, which is experiencing rapid expansion. As a result, the advancement of the nation's tourism industry toward greater sophistication necessitates research into Android-based tourism planning applications. However, Bangladesh has received relatively little research, despite numerous studies on the

development of such applications in other nations. As a result, recent research on Bangladeshi tourism planning applications based on Android will be very helpful in determining the particular requirements and obstacles associated with their development. Mobile technology, user experience, geographic information systems, and locationbased recommendations are just some of the concepts and theories involved in the creation of efficient Android-based applications for tourism planning. These are essential for developing effective applications for the travel industry that can enhance the quality of vacation trips and make it simpler for visitors to plan trips. Even though there has been a lot of research done on Android-based tourism planning applications, there are still some problems and limitations in the literature. Bangladesh is one of many nations where cultural, social, and economic differences have not been taken into account in previous research. In addition, there is still a lack of integration of tourism data from a variety of sources, including social media and local users, in order to provide recommendations that are more accurate. As a result, the goal of this study is to investigate a number of important questions, such as how to create a successful Bangladeshi Android-based tourism planning application, how to incorporate cultural, social, and economic factors into application development, and how to combine tourist data from a variety of sources to provide more precise recommendations. In order to enhance visitors' travel experiences, the research hypothesis proposes the creation of an Android-based tourism planning application that is efficient, user-friendly, and incorporates the most recent tourism data. [5] The travel industry has seen critical development, and thus, the travel industry agenda administrations and vacationer travel courses have become progressively famous. The traveler's experience and satisfaction can be greatly enhanced by a well-planned itinerary. As a result, improving tourism services necessitates the development of strategies that make schedule development and evaluation easier for itinerary planners. Designing itinerary has been the focus of recent research. Powerful schedule configuration is affected by client experience, and past exploration has proposed utilizing methods like meetings, perceptions, and studies to comprehend client requirements and inclinations. However, travel-related spontaneous desires, curiosity, and exploration have not been taken into account in previous research. This study expects to foster a client focused strategy for planning schedules that considers unconstrained cravings, interest, and investigation during the excursion. The examination question is "How might the travel industry agenda configuration further develop the client experience?" A hypothesis for client-focused design that places the user first in the product or service design process is presented in the study. The methods of previous studies have been limited, limiting the development of user-specific itineraries. This study tends to these constraints by proposing a client focused approach that thinks about unconstrained longings, interest, and investigation during the excursion. The hypothesis is that a user-centered approach to itinerary design and improved user satisfaction will benefit the tourism industry. [6] The rising number of smartphone users who rely on mobile applications to obtain information about tourist destinations has revolutionized the tourism industry. Applications for travel, including those for halal tourism, are in high demand as a result. Unfortunately, the majority of halal tourism applications' user interfaces are still not user-friendly and do not adequately address user requirements. In this manner, it is important to further develop the UI of halal the travel industry applications to make them more available and agreeable for clients. In previous studies, the significance of user interface design in tourism mobile applications has been emphasized. However, the user interface design of halal tourism applications has been the subject of very few studies. Using a client-focused design approach, the purpose of this study is to further develop the user interface of halal tourism applications. Understanding the requirements and preferences of the application's users is the primary focus of the client-focused design approach. The methodology incorporates a few phases, like revelation, ideation, prototyping, and assessment. Understanding user requirements and conducting competitor analysis are the goals of the discovery phase. Based on the findings from the discovery stage, planned ideas are generated during the ideation stage. A user interface model is created during the prototyping phase, and model enhancement is the focus of the evaluation phase. Although user interface design for tourism applications has been the subject of several studies, there is still a dearth of research on user interface design for halal tourism applications. Using a user-centered design approach, this study aims to

fill this void and enhance the user interface of halal tourism applications. With a more attentive and user-friendly user interface, the study hypothesizes that usage of halal tourism applications will rise and user satisfaction will rise. [7] The tourism industry is expanding rapidly in the digital age, and technology plays a crucial role in promoting tourist destinations. Games are one type of technology that can be used to show tourists new places and give them new experiences. However, there is still a lack of research on the effectiveness of tourism games in predicting visitor behavior. Studies done in the past have shown that games can help promote tourist destinations and increase visitor interest. The theories of consumer behavior and behavioral psychology can be used to further investigate this topic. Additionally, game development may benefit from the theory of user experience (UX). Although there have been a number of studies on how games can be used in tourism, very little has been done on how games can be used to figure out how visitors behave. Accordingly, this study plans to zero in on the adequacy of the travel industry games in perceiving visitor lead. The factors that influence the efficacy of tourism games in identifying visitor behavior, the differences in guest behavior recognized by using tourism games and direct observation techniques, and the effectiveness of tourism games in determining visitor behavior are some of the research questions that arise. The idea is that user experience (UX) factors can affect how well tourism games work at predicting visitor behavior. [8] The development of technology and the Internet has had a significant impact on the expansion of the tourism industry, which is a significant sector in China and around the world. The integration of technology into the sector has resulted from the concept of ”Internet + Tourism,” which has become the subject of research in China. The impact of the Internet and mobile technology on tourism marketing, resource integration, service quality, and tourism management, including management of destinations, attractions, and customer experiences, has been the subject of numerous studies. However, research on the industry’s long-term viability and the impact of technology on tourism is still needed. The impact on customers and the sustainability of the tourism industry have frequently been overlooked in the literature on the use of information and communication technology in the sector. Moreover, research has seldom consolidated showcasing and business the executives ways to deal with work on the business in general. Therefore, the focus of future research ought to be on determining how business management and marketing strategies can be integrated with technological advancements and how technology can enhance customer experience and sustainability in the tourism industry. Future research in this field can be guided by a number of research questions and hypotheses. For example, exploration can investigate how innovation can be utilized to further develop client experience in the travel industry, how showcasing and business the executives methodologies can be coordinated with mechanical headways, and the drawn out impacts of innovation on the business’ manageability. The creation of a mobile application that provides up-to-date traveler information, which could improve customer satisfaction and accelerate the expansion of the tourism industry, is one possible hypothesis for future research. [9] The utilization of information technology has had a significant impact on the tourism industry, resulting in enhanced tourist experiences and improved tourism services. The tourism sector has been the subject of research into how various information technologies, such as mobile applications, online platforms, and geographic information systems, are put to use. Although numerous studies have examined the use of technology in particular contexts, such as mobile applications or online platforms, more in-depth research is required to fully comprehend the tourism industry’s potential for information technology. Furthermore, there are restrictions in the data and exploration techniques used in the writing. As a result, a number of research questions can direct future research in this field. For instance, how can IT be utilized to improve tourism services? What factors influence the tourism sector’s adoption of IT? How does the marketing of tourism benefit from the use of information technology? In general, one possible hypothesis is that the utilization of information technology by the tourism industry may enhance user experience and efficiency. However, additional research is required to fully investigate the impact of information technology on the tourism sector and to devise strategies for maximizing its use. [10] As people increasingly rely on travel recommendations to choose their vacation destinations and activities, the tourism industry has seen an increase in their use. This study will zero in on a clever way to deal with making a vacationer proposal

framework. In the case of tourist recommendation systems, conventional methods like Content-Based Filtering (CBF) and Collaborative Filtering (CF) have been the primary focus of previous research. However, the incorporation of technologies like augmented reality (AR) and artificial intelligence (AI) into these systems has been the subject of numerous studies. A tourist recommendation system is one that gathers user preferences and makes recommendations for activities, tourist attractions, lodging, and restaurants based on those preferences. The hypotheses related with this subject incorporate Cooperative Separating (CF), Happy Based Sifting (CBF), and Mixture Separating (HF). Even though a lot of research has been done on travel recommendation systems, the literature still has some holes and restrictions. For example, there haven't been enough studies on how to use new technologies like machine learning (ML), deep learning (DL), and natural language processing (NLP) to make tourist recommendation systems. The following are the emerging research questions as a result of these gaps: How can a novel strategy for building a tourist recommendation system be put into action? How might new advances, like ML, DL, and NLP, work on the adequacy of suggestion frameworks? And how can the new travel recommendation system's efficiency and user satisfaction be evaluated? It is hypothesized that incorporating new technologies can contribute to the creation of a travel recommendation system that is more accurate and improve user satisfaction. [11] The tourism sector is being significantly impacted by the rapid advancement of innovation. Travel recommendations are one of the applications of artificial intelligence (AI) in this sector. An intelligent travel recommendation algorithm based on text mining and the MP (multivariate transportation modes) neural cell model is the focus of this article. A travel recommendation algorithm based on these methods has not been extensively studied, despite the fact that text mining and neural cell models have been the subject of previous research on their application to tourism recommendations. The creation of an intelligent travel recommendation algorithm that predicts tourist preferences through text mining and the MP neural cell model is the main idea behind this article. Message mining is utilized to extricate data from audits of vacation destinations or depictions of them, and the MP brain cell model is utilized to investigate this information and produce proposals. There is still a gap in the literature regarding the development of a travel recommendation algorithm based on the MP neural cell model and text mining, although some previous studies have examined the use of travel recommendation algorithms to improve the tourist experience and operational efficiency in the tourism industry. This study's primary research question is how accurate the intelligent travel recommendation algorithm based on text mining and the MP neural cell model is at predicting tourist preferences. The hypothesis is that a travel recommendation algorithm created with these methods will produce recommendations that are more accurate and enhance the tourist experience as a whole. The model's testing, on the other hand, may be constrained by the size and variety of the data it can use. [12] The travel industry is developing quickly, both locally and worldwide, and innovation is assuming an undeniably significant part in this turn of events. The mobile-based travel recommendation system is one such technology that has the potential to enhance the quality of tourism services. In this review, the emphasis will be on fostering an Android application for a powerful programming-based city visit proposal framework. The incorporation of technologies like augmented reality into mobile-based travel recommendation systems can enhance the user experience, as previous research has demonstrated. Methods for processing and analyzing data can also lead to recommendations that are more specific. Personalized travel recommendations based on user preferences and interests are provided by mobile application-based travel recommendation systems that make use of technology. The best travel routes are generated using dynamic programming, which takes into account user preferences. Regardless of the broad examination on portable application-based travel suggestion frameworks, the accentuation stays on making the right application to address client issues and give the most ideal client experience. A dynamic programming-based Android application for a city tour recommendation system is the goal of this study. How to construct an efficient recommendation system that delivers the best possible user experience is the research question. This study hypothesizes that dynamic programming-based applications can improve the quality of travel recommendations and the travel planning experience for users. [13] The travel industry vigorously depends on social the travel industry, which

incorporates visiting social spots and occasions. In the age of mobile information, independent tourism information platforms have grown in importance, and this study will concentrate on their design and application. The development and use of mobile-friendly independent tourism information platforms have been the subject of numerous studies. Past exploration has accentuated the significance of using progressed data advancements, for example, large information and distributed computing to improve the client experience. This study examines the cultural and social factors that have an effect on the effectiveness of self-guided tourism information platforms by integrating significant theories like Systems Theory, Technology Acceptance Theory, and User Experience Theory. In spite of the consideration given to independent the travel industry data stages, there is an absence of exploration on the viability of such stages, and their effect on client experience. The following are the study's proposed research questions: How does the user experience change when an independent tourism information platform is designed? How do cultural and social factors affect how well self-guided tourism information platforms work? How could free the travel industry data stages be advanced to expand their adequacy? The hypothesis that has been put forth is that self-guided tourism information platforms that make use of cutting-edge technology and sophisticated algorithms will be more userfriendly and more productive. This study plans to fill the hole in writing in regards to the viability of independent the travel industry data stages and to give bits of knowledge into the social and social factors that impact client experience. [14] The travel industry has been developing quickly, on account of the expanded availability to data and innovation. Subsequently, the improvement of data innovation in the travel industry has been started. Virtual reality is one of the most recent technologies utilized in the tourism industry. Tourists can have a more interactive and immersive tourism experience thanks to virtual reality technology. The use of virtual reality in the promotion of rural cultural tourism in China's Hubei Province is the primary focus of this research. Although virtual reality has been used in tourism in a number of studies, little research has been done on marketing rural cultural tourism using this technology. In addition, research has demonstrated that the utilization of virtual reality technology in tourism marketing has the capacity to enhance the tourist experience and boost interest. The fundamental thought of this study is to advance Hubei Territory's rustic social the travel industry utilizing augmented reality innovation. Tourism marketing theory and virtual reality theory are two related theories. The previous analyzes the promoting systems and methods utilized in the travel industry to draw in sightseers, while the last option centers around the innovation and crucial ideas of augmented reality and its effect on clients. Research on measuring the impact of virtual reality technology on the tourist experience is still lacking, despite debates in the literature regarding the use of virtual reality technology to promote rural cultural tourism in Hubei Province. Therefore, the primary research question is how virtual reality technology can promote rural cultural tourism in Hubei Province and enhance tourist experiences. The study hypothesizes that marketing rural cultural tourism in Hubei Province using virtual reality technology can increase tourist interest and provide a more interactive and immersive experience. [15] The utilization of innovation has become progressively significant in further developing the traveler experience, and expanded reality (AR) innovation is acquiring ubiquity. This writing survey means to examine the utilization of area based AR applications in the travel industry and the current examination on this subject. Numerous studies on a variety of topics, including navigation, education, and virtual tour guides, have demonstrated that the application of augmented reality (AR) technology in tourism enhances user interaction and engagement. However, the literature still has some limitations, such as a lack of sufficient empirical research and a limited focus on particular AR applications. Tourism, location-based applications, and augmented reality are all important concepts in this area, and relevant theories include technology acceptance theory and user experience theory. The existing literature is constrained by the requirement for additional empirical research, a greater emphasis on privacy and security concerns when developing augmented reality (AR) applications for tourism, and a wider range of topics to be covered. Some conceivable exploration inquiries for this subject include: In what ways can location-based and augmented reality applications enhance the tourism industry's visitor experience? How can augmented reality (AR) applications improve destination marketing and promotion? What measures can the travel industry organizations take to

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guarantee the security and protection of client information while creating AR applications? Some possibilities for hypotheses include: The utilization of area based and expanded reality applications can possibly improve the vacationer experience and create interest in client touristed locations. Tourism destination marketing and promotion can benefit from AR applications. Businesses in the tourism industry stand to gain significantly from creating augmented reality (AR) applications that take user data security and privacy into consideration. [16] Despite the fact that the travel industry has been steadily expanding and making significant contributions to the economic development of nations, the issue of accessibility for visitors with disabilities persists. In recent years, technology has emerged as a useful tool to improve the accessibility and experience of a variety of travelers, including those with disabilities, in order to address this issue. The use of mobile apps designed to assist visually impaired travelers is a growing mobile trend. Numerous mobile applications have been developed to assist visually impaired tourists in navigating and enjoying tourist attractions, and previous studies have investigated the application of technology to improve accessibility for tourists with disabilities. A portion of these applications likewise integrate Expanded Reality (AR) innovation to further develop the client experience. However, there are still limitations, such as restrictions on the use of technology and accessibility to information. The application of technology to improve accessibility for disabled tourists is the primary focus of this research. Another related theory that may be relevant to this study is the accessibility theory, which posits that a tourist attraction's success can be increased through good accessibility. Even though mobile applications for tourists with visual impairments are available, their use is still limited by technological obstacles, accessibility issues, and the mystery of information for users. The following are some potential research questions that may arise from this study: What are the advantages of using a mobile app to navigate tourist attractions for visually impaired visitors? How can accessibility for disabled users of mobile apps be improved? How can augmented reality technology improve accessibility for visually impaired tourists? One potential speculation that could be investigated is that the utilization of portable applications and AR innovation can increment openness for vacationers with incapacities, and a more available versatile application will give a superior client experience to all clients. [17] Versatile innovation has essentially affected different parts of life, including the travel industry, and has turned into a fundamental piece of our day to day everyday practice. GISbased mobile applications are one of the significant technological advancements in tourism development. These applications can possibly upgrade the travel industry experience and draw in additional sightseers to Terengganu, a Malaysian state with high the travel industry potential. The application of GIS-based mobile applications to tourism development has been the subject of several studies. These examinations cover different subjects, for example, geospatial information investigation, data the executives, geographic weakness, and portable application advancement, in Malaysia as well as in different nations like Spain, Italy, and China. An information system known as GIS technology makes use of technology to examine data from various regions of the world, including vulnerabilities. GIS-based mobile applications provide precise location data and assist tourists in navigating the region thanks to the use of GPS and GIS technology. These applications give you useful information like transportation routes, tourist destinations, restaurants, hotels, and so on. Although there has been a lot of research done on the role that GIS-based mobile applications play in the growth of the tourism industry, very little research has been done on how the use of technology and applications affects the tourism experience in the Malaysian Terengganu region. As a result, the purpose of this research is to investigate the ways in which Terengganu's tourism experience is impacted by mobile GIS-based applications. How mobile GIS-based applications can improve the tourism experience in Terengganu, what factors influence their use and acceptance, and how their use affects user satisfaction and repeat visits are some of the research questions that can be investigated. The use of a mobile GIS-based application may improve the tourism experience and encourage repeat visits to Terengganu, according to one possible hypothesis. [18] The travel industry has a significant impact on the economy and is expanding rapidly. A tourist recommendation system can be used to improve the travel industry given technology's growing significance. In any case, the current frameworks are as yet confronting difficulties in giving precise suggestions as per traveler inclinations. In order to enhance the tourist

experience, research on the design of the appropriate tourist recommendation system ought to be carried out. The use of tourist recommendation systems and their effect on tourist satisfaction have previously been the subject of research. Systems that are based on technology, like location-based services and augmented reality, have also been studied. However, there is still a dearth of research on how to design tourist recommendation systems that take into account participation in the community and culture. A portion of the basic ideas and speculations connected with this point incorporate the movement suggestion framework, local area cooperation in the improvement of a traveler proposal framework, and social viewpoints in the plan of a vacationer suggestion framework. The study of community support for the development of tourist recommendation systems is limited in the literature. In addition, cultural aspects of these systems' design have not been thoroughly investigated, and technology has remained the primary focus. This study aims to fill this void by providing responses to inquiries like how a travel recommendation system can be constructed with community participation and cultural considerations in mind, as well as what the impact is of using a tourist recommendation system that incorporates social perspectives and community support on tourist satisfaction. One possible hypothesis is that a tourist recommendation system that takes into account cultural and community participation will better reflect the preferences of tourists. Besides, the fulfillment of travelers will increment when a vacationer suggestion framework with social and local area inclusion parts is utilized. [19] The development of information technology has contributed significantly to the significant expansion of the tourism industry. In particular, the importance of tourism websites in providing services to tourists has increased. For users to get the most out of these websites, it's important to make sure they have a good time. Therefore, the primary objective of this research will be to evaluate the Indonesian tourism website user experience using the USE (Usefulness, Satisfaction, and Ease of Use) questionnaire. Various models have been used in previous studies to evaluate user experience on tourism websites. Kim and Yoon (2015) tested the usability and user satisfaction of tourism website using the Technology Acceptance Model (TAM), while Wu et al. 2017) evaluated user experience on Taiwanese tourism websites using the USE questionnaire. The USE model serves as a framework for evaluating the concept of user experience on tourism website. There are three dimensions to the USE model: ease of use, user satisfaction, and usability. The USE questionnaire has been used in a number of previous studies to evaluate user experience on tourism websites. However, the majority of research has been conducted in specific nations, and no study has focused on Indonesian tourism websites. As a result, the purpose of this study is to respond to the following inquiry: How does Indonesian tourism website user experience change as a result of the USE questionnaire approach? The hypothesis of this study is that Indonesian tourism websites are highly usable, user-pleasing, and simple to use. This study can provide insight into how to improve the design and functionality of tourism websites to increase user satisfaction by evaluating the user experience. [20] The integration of technology in the tourism industry has significantly transformed various aspects of tourism services. One of the crucial aspects of technology integration in tourism is the application of User Interface (UI) and User Experience (UX) design in tourism information services. UI/UX design can help enhance the user experience and satisfaction with tourism services, which can increase the competitiveness of tourism destinations. Although several studies have explored the application of UI/UX design in tourism services, including tourism information services, there are still gaps and limitations in the literature, such as the lack of empirical studies on the effectiveness of UI/UX design in solving tourism information service problems. Therefore, this literature review aims to explore the existing literature on the application of UI/UX in tourism information service problems, with the research question of what is the effectiveness of UI/UX design in solving tourism information service problems, and the hypothesis that UI/UX design can effectively solve tourism information service problems and enhance tourists' satisfaction. The selected reference for this review is Khumwichai, Ratnapinda, and Sarachai's (2019) study on implementing information technology and social media for promoting tourism in Pongyeang Subdistrict, Chiang Mai, Thailand. [21] The advent of technology has brought about a remarkable transformation in the tourism industry, equipping tourists with convenient means to gather information pertaining to destinations, tourist sites, hospitality establishments, and transportation options. Nonetheless, the surfeit of information

may engender predicaments for tourists, including superfluous information and challenges in decision-making. The proliferation of user interface (UI) and user experience (UX) design has facilitated the creation of more interactive and personalized tourism information services, thereby elevating the overall quality of the customer experience. The present corpus of literary works concerning the utilization of technology in the tourism sector has experienced a significant expansion. However, there remains an insufficient amount of scholarly inquiry that delves into the implementation of user interface and user experience (UI/UX) in the context of challenges encountered in tourism information services. The research conducted by Zhou and colleagues. The present study puts forth an intelligent algorithm for tourism recommendation that relies on the principles of text mining and the MP nerve cell model of multivariate transportation modes. The present algorithm employs text mining techniques in order to extract user preferences, which are subsequently analyzed through the use of machine learning models with the aim of generating customized recommendations. The research findings indicate that the algorithm exhibits a notable superiority over conventional recommendation algorithms, resulting in a marked enhancement in user satisfaction. There exists a necessity for additional empirical investigation to substantiate the efficacy of UI/UX design in augmenting the customer experience and optimizing decision-making. Subsequent investigations may delve into the ethical ramifications surrounding customized suggestions and the influence of cultural disparities on User Interface/User Experience (UI/UX) design in the field of tourism information provision. The implementation of UI/UX design in the context of tourism information services exhibits considerable potential to enhance the overall customer experience and augment the tourism sector as a whole. [22] In recent years, there has been a growing appreciation for the significance of incorporating user interface (UI) and user experience (UX) design into the tourism industry. The objective of tourism information services is to furnish personalized recommendations and information to travelers through a range of digital platforms. Within this particular scientific domain, the implementation of methods pertaining to machine learning - such as those utilized in recommender systems - have garnered substantial interest due to their capacity for furnishing customized recommendations. The article authored by Charnsak Srisawatsakul and Waransanang Boontarig (2020) postulates the implementation of a tourism recommendation system, incorporating machine learning techniques to analyze user preferences based on their publicly available Instagram photos. Through this approach, the system offers customized travel destination and activity recommendations to users. Moreover, a UI/UX design that promotes ease of use is crucial for optimizing the user experience of tourism informational services. A meticulously crafted user interface (UI) and user experience (UX) can facilitate a smooth and pleasurable encounter, resulting in enhanced user involvement and retention. This can subsequently culminate in higher levels of customer satisfaction and allegiance. According to Liu and Li (2019), a well-designed user interface/user experience (UI/UX) of a tourism information service can augment its trustworthiness and diminish the perceived risk of its usage. Nonetheless, the existing scholarly material reveals gaps and limitations with respect to the implementation of UI/UX in tourism information services. Consequently, additional scientific inquiry is necessary to scrutinize the influence of UI/UX design on both the user experience and the overall efficacy of tourism information services. [23] The utilization of User Interface/User Experience (UI/UX) design in the provision of tourism information services constitutes an increasingly pertinent subject in the context of the contemporary digital era. In their scholarly article titled ”Application of a User-Centered Design Method for Enhancing the UI/UX of a Tourism Village Website,” Hasna Tania Yasmine and Wahyu Tisno Atmojo (2022) investigate the efficacy of utilizing a user-centered design approach to optimize the user interface and user experience of a website dedicated to promoting tourism in a rural locality. In their work, the authors emphasize the crucial role of user interface (UI) and user experience (UX) design in the tourism sector, underscoring its potential influence on enhancing customer contentment and fostering loyalty. The contention put forth by the authors is that a design methodology, which centers the user’s needs, is indispensable in developing UI/UX designs that effectively address the user’s requirements and preferences. The present study provides a comprehensive review of the extant literature pertinent to the design of user interface/user experience (UI/UX), elucidating salient theoretical constructs and principles germane to this domain. The authors also highlight noteworthy absences

and constraints in the current body of literature, namely a dearth of studies concerning the user interface and user experience design in relation to information services catering to the tourism sector. The authors established research inquiries and conjectures from the aforementioned lacunas. Subsequently, a user-centered design approach was employed to assess the effectiveness of the tourism village website. This article presents a valuable addition to the expanding pool of literature pertaining to the utilization of User Interface/User Experience (UI/UX) design in the realm of tourism. [24] The application of UI/UX in tourism information services has become a crucial area of research due to the increasing demand for these services and the issues associated with their provision. The existing literature reveals that UI/UX design significantly influences tourists' perceptions and experiences, including their decision-making processes. However, there are still gaps and limitations in the literature, including limited research on the impact of UI/UX design on sustainable tourism and the role of UI/UX design in promoting sustainable tourism. Therefore, the research questions that need to be addressed include the influence of UI/UX design on tourists' decision-making processes and the role of UI/UX design in promoting sustainable tourism. To answer these research questions, hypotheses can be formulated, including UI/UX design significantly influencing tourists' decision-making processes and playing a significant role in promoting sustainable tourism. The study by Yang et al. (2019) on modeling the perception of walking environmental quality in a traffic-free tourist destination has contributed to the existing literature by developing a model that assesses tourists' perceptions of walking environmental quality, which is significantly influenced by UI/UX design. [25] The utilization of User Interface (UI) and User Experience (UX) design principles in tourism information services has assumed considerable significance in the advancement of digital systems that address tourists' requirements. Liu and colleagues. The year 2018 witnessed a study on the subject of popular route planning accompanied by travel cost estimation utilizing trajectory data. This study put forward a novel method to identify the most frequently used routes by tourists while concurrently estimating the travel costs involved. The investigation underscored the importance of utilizing trajectory data analysis as a means of improving travel suggestions, as well as enhancing the user interface and user experience design of tourism informational services. Nonetheless, the aforementioned research was restricted to commonly used itineraries and the assessment of financial projections, thereby creating an opportunity for additional inquiry into the implementation of user interface/user experience (UI/UX) design within alternate dimensions of the provision of tourism-related information services. Henceforth, it is imperative to investigate the avenues through which the UI/UX design can be ameliorated for the purpose of augmenting the effectiveness and efficiency of tourism information services. The underlying proposition is that a judiciously crafted UI/UX interface would heighten the level of tourists' satisfaction while also improving the usability of tourism information services. [26] The significance of incorporating User Interface (UI) and User Experience (UX) has witnessed a growing trend in augmenting the efficacy of Tourism Information Services (TIS). The scholarly literature underscores the significance of user interface and user experience (UI/UX) in the development of efficacious tourist information systems (TIS). This is accomplished by offering captivating and interactive interfaces that satisfy the tourists' requirements. The notion of User Interface/User Experience (UI/UX) within the domain of Technology and Information Systems (TIS) is predicated on the fundamental principles of Human-Computer Interaction (HCI) and Design Thinking. These principles govern the creation and evolution of interfaces that prioritize user-friendliness, engagement, and accessibility. The significance of user interface (UI) and user experience (UX) in tourism information service (TIS) is widely acknowledged; however, research on its practical implementation in addressing problems within the domain is limited. The employment of Modified Cheapest Insertion Heuristic technique in formulating a tourism route for Medan City with the aim of intensifying Tourist Interest Satisfaction (TIS) has been put forward by Dian Rachmawati and Wilyanto in their recent work (2020). Additional research is required to examine the efficient implementation of user interface (UI) and user experience (UX) in transportation information systems (TIS), particularly in emerging nations. [27] The implementation of User Interface (UI) and User Experience (UX) design in the domain of tourism is of paramount importance as it significantly improves the functionality and availability of tourism information services. The expansion of the

tourism industry has resulted in a significant requirement for efficient Ui/UX designs in tourism information services. This necessity stems from the need to enhance the overall experience of tourists. The available academic discourse has delineated the effects of user interface/user experience (Ui/UX) designs on the overarching tourist experience. However, there is insufficient scholarly investigation regarding the implementation of such designs in tourism orientated information services. The research conducted by Wu and colleagues. The year 2023 marks a significant advancement in the field of tourism analytics, as it aims to enhance its efficacy through the utilization of knowledge graphs and climate data. The adoption of data-driven decision-making in the tourism industry is thus underscored as a crucial aspect in this pursuit. The salient concepts pertaining to this subject matter entail the elements of user interface, user experience, tourism information services, and the design and development of Ui/UX interfaces. Further investigation is required regarding the utilization of Ui/UX designs in the provision of tourism information services. However, it is postulated that the application of efficacious Ui/UX designs has the potential to augment the usability and accessibility of these services, thus fostering an improved overall tourism experience. [28] The burgeoning tourism sector has witnessed exponential growth, underscoring the heightened imperative to deliver top-notch user experience (UX) and user interface (UI) in the realm of tourism information services. Existing literature evidences that UI pertains to the graphical and functional aspect of the user interface, whereas UX constitutes the holistic encounter that a user undergoes while utilizing a particular product or service. Whilst there has been a substantial body of research conducted on user interface/user experience (UI/UX) within different sectors, scant attention has been paid to the implementation of UI/UX strategies in the context of tourism information services, thereby giving rise to a knowledge gap in this field. An article authored by Yanmei Zhang and colleagues. The study by (2020) delineates a novel tourism routeplanning methodology that is grounded on an overarching consideration of extensive appeal. Nonetheless, discrepancies and constraints persist in the existing body of scholarly work concerning the distinct predicaments encountered by tourism information services and the potential for user interface and user experience design to counteract them. Research inquiries and conjectures are postulated to address these deficiencies, including the efficacy of varying UI/UX composition components in tackling difficulties inherent in tourism information provision, and the repercussions of UI/UX on the competitiveness of tourism venues. In light of these findings, it is imperative to identify and rectify these gaps and constraints to elevate the standard of tourist information provision and amplify the competitive edge of tourist destinations. [29] In recent times, the integration of user interface (UI) and user experience (UX) into the provision of tourism information services has elicited substantial scholarly interest. The domain of user interface/user experience (UI/UX) is deemed of utmost significance for creating efficacious and user-oriented digital interfaces that enable an expedient travel experience for tourists. Previous scholarly works have extensively examined different dimensions of the subject matter, encompassing the advantages of incorporating user interface/user experience (UI/UX) principles in augmenting patron experience, the difficulties encountered in implementing UI/UX in the realm of tourism information provision, and relevant theoretical frameworks that include user-centered design principles and the technology acceptance model. Notwithstanding, the existing literature demonstrates certain deficiencies, particularly with regards to the paucity of studies exploring the challenges related to embedding UI/UX in the domain of tourism information services, as well as the imperative to conduct further research in contexts outside of the Western sphere. There exist several potential areas for research inquiry and hypothesis formulation within the domain of UI/UX implementation in tourism information service. These areas may include an examination into the challenges associated with the application of UI/UX, an investigation into the impact of UI/UX on variables such as customer satisfaction and loyalty, and an exploration into how cultural distinctions may affect the design and execution of UI/UX in tourism information service. These suggestions are drawn from the work of Oktadiana and Pearce (2020). [30] The significance of UI/UX design in tourism information services has been emphasized in several research. In Spain and Portugal, tourists' adoption and usage of tourism applications showed a highly significant positive association between the user experience and application quality, according to Correia (2021). Wang (2021) proposed developing a smart information

technology platform to enhance every aspect of the tourist experience in rural regions. The study found that the smart platform provides travelers with a practical and complete tool for learning about local attractions, accommodations, and activities. Hashim (2019) created significant usability assessment measures for mobile applications in the travel and tourism industry, and he utilized them to evaluate a few selected mobile tourism applications. Professionals have given the recommended metrics favorable feedback, and designers or usability experts may use them to create user-friendly mobile applications for site users. [31] The protection of cultural heritage requires excellent UI/UX design. Othman (2021) suggested digitizing the traditional dance moves and rhythm found in the songs of the Minangkabau people of Negeri Sembilan, Malaysia, using virtual reality. A variety of approaches were utilized in the study to thoroughly assess the literature on intangible cultural assets. [32] Ander Garcia (2019) stressed the value of gamification in increasing travel experiences. In the tourism and heritage sectors, Paliokas (2020) examined how a gamified augmented reality application boosted user engagement, happiness, and enjoyment. Increased user engagement, pleasure, and enjoyment were the results of the gamified augmented reality application, which enhanced the user experience for digital heritage and tourism. [33] Design Thinking and Emotional Intelligence were used by Wijayanti and Tanone (2021) in the UI/UX design of websitesbased online foreign service trip expenditures (BPDL) applications. A tourism application was developed and put through testing for the Chiang Rai Province's Baan Muang-Ruang hamlet by Fongmanee and Chaikhamwang (2021). In order to install the tourism application in the Baan Muang-Ruang community, the research aimed to evaluate user satisfaction with the application as well as the results of community-wide tourism promotion. The results showed that user satisfaction was appraised at the greatest level, while professional review of travel applications revealed overall effectiveness.The concept of tourism resilience in crisis management as a kind of tourist policy reform was critically studied by Bangso (2022). In the face of unanticipated circumstances, the report underlined the need of cooperation, ingenuity, and strategic planning in maintaining the sustainability and profitability of the tourism business. [34]

3 METHODOLOGY

The literature review model in this paper is the PRISMA checklist method. PRISMA is the accepted standard for reporting evidence in literature reviews and meta-analyses, which is why we chose the PRISMA method.

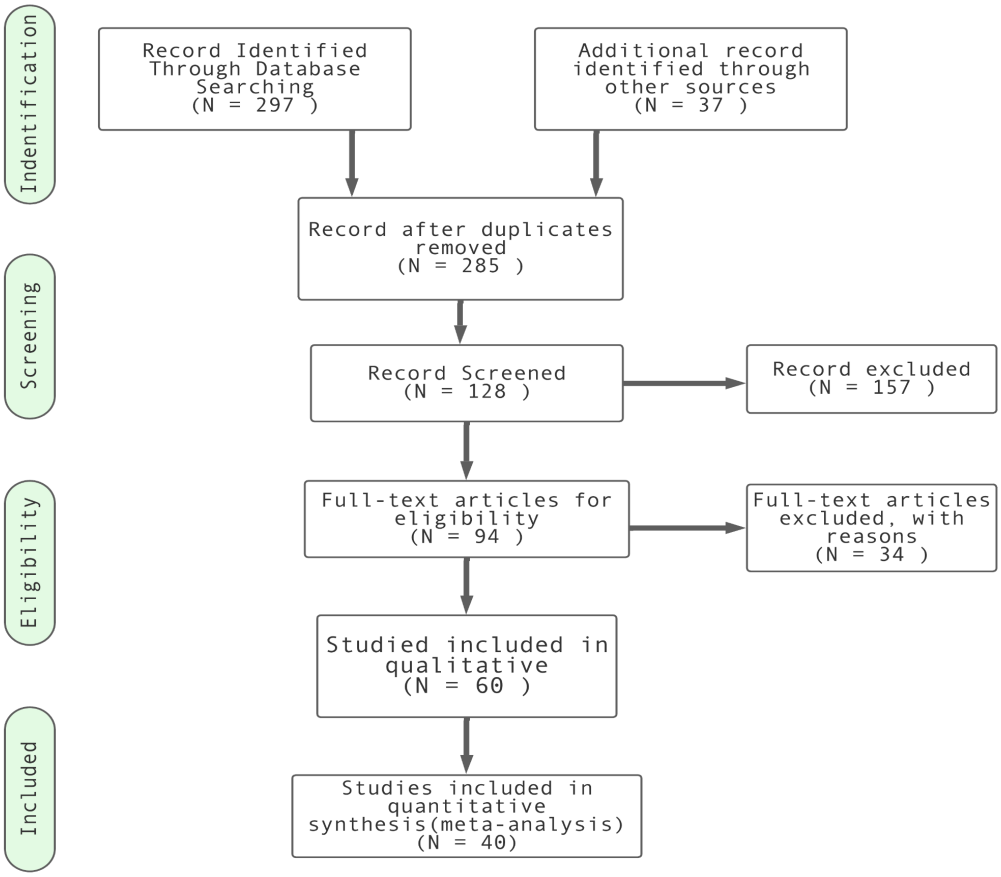

Figure 1: PRISMA checklist methodology.

4 Discussion & Conclusion

The study's conclusions offer insightful information about how to apply UI/UX design principles to tourism information services. The analysis of the literature found a sizeable body of knowledge about UI/UX design and its applicability to the tourism sector. Tourism service providers can improve user engagement, information retrieval, and general satisfaction by adopting a user-centered strategy. The significance of visual design in UI/UX is one of this study's major results. Utilizing visual components like color schemes, typography, and layout effectively can have a big impact on user engagement and make information services more aesthetically pleasing and user-friendly. Tourism service providers can draw consumers in and entice them to learn more about the information offered by designing aesthetically appealing interfaces. The user experience can also be considerably improved by including interactive components in the design. Information services may become more dynamic and immersive by adding features like interactive maps, virtual tours, and user-generated content. Users can actively engage with the content, which not only boosts user engagement but also makes it easier to retrieve more accurate information. When it comes to UI/UX design,

personalization has become even more important in the context of travel information services. Service providers can offer a more individualized and pertinent experience by adjusting the interface and content to the exact preferences and needs of the target audience. Features like suggested itineraries, personalized recommendations, and interfaces that adjust to users' choices and behavior are examples of personalization. The results highlight the value of a user-centered strategy. Service providers can learn about consumers' wants, expectations, and pain areas by doing user research, surveys, and interviews. This knowledge enables the creation of interfaces that satisfy users' needs and deliver a smooth user experience. This paper's conclusion emphasizes the value of UI/UX design in improving tourism information services. Service providers can greatly enhance user engagement, information retrieval, and general satisfaction by adopting a user-centered approach and integrating efficient visual design, interactive aspects, and personalisation. The results of this study imply that careful consideration of UI/UX design concepts is necessary for effective and efficient tourism information services. In order to design intuitive, aesthetically pleasing, and interactive user interfaces, service providers should emphasize the demands and preferences of the consumers. Service providers may increase customer satisfaction and loyalty by offering tailored experiences and designing the interface with the target demographic in mind. Future studies in this area might examine the precise design tactics and aspects that have the biggest effects on user pleasure and engagement. Further insights into improving the user experience may come from researching the integration of cutting-edge technology, such as augmented reality or voice interfaces, with tourism information services. Overall, UI/UX design concepts could change the travel and tourism sector by giving visitors frictionless, pleasurable, and educational experiences. Tourism service providers can satisfy the changing expectations of visitors and set themselves out in a crowded market by utilizing the power of UI/UX design.

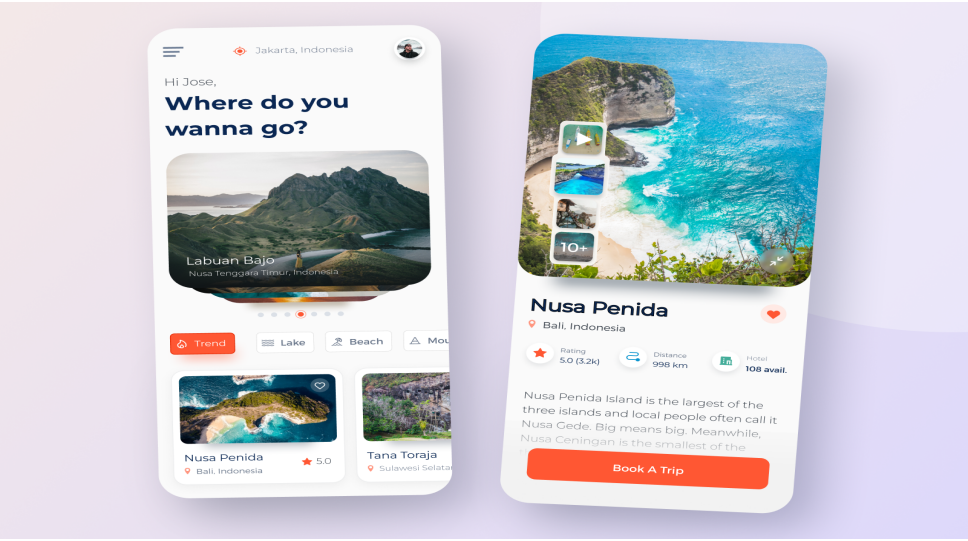

Figure 2: Example Application of UI/UX in Tourism Information Service

The following is an example of the UI/UX of a Tourism Information Application

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