

## State of Art Survey for Designing and Implementing Regional Tourism Web based Systems

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### ABSTRACT

In today's society, technology is rapidly development, especially Internet communications, which significantly facilitates human work in various fields such as the military, offices, factories, medical, and directorates. As an effective field, the tourist information management systems (TIMS) are becoming more popular as the tourism industry grows and becomes one of the most profitable businesses in the world. People have been more reliant on such technologies in recent years. In terms of the systems themselves, they have progressed from being systems in which users can only passively absorb information to systems that attempt to incorporate users as an integral system element. The purpose of this study has been to investigate whether different types of systems implemented by different tourism authorities have had a certain positive impact on their operations in the form of facilitating tasks for their staff. The work is made up of 20 studies that looked at whether their designed web-based technologies, which were applied in their operations have facilitated the employees' tasks.

**KEYWORDS:** Tourism, Tourism Management systems, Web Technology System.

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### 1. Introduction

Travelling for personal business or professional purposes to countries or outside regions of one's normal surroundings is described as tourism by the United Nations World Tourism Organization (UNWTO). In this case, the persons in question are known as guests. If a visitor's travel does not include an overnight stay, they are classified as a (same-)day visitor; if it does include an overnight stay, they are classified as a tourist [1]. Aside from being employed by a resident entity in the country or area visited, the purpose of their travel might be for business, leisure or personal reasons, depending on their situation. Tourism refers to short-term travel for enjoyment, leisure, religious and family business objectives [2]. Tourism is seen as a vital activity for nations due to it has a direct impact on the social, cultural, educational and economic sectors of national societies, as well as on the worldwide links that they have on the other hand, tourism is quickly becoming one of the most useful sectors on the planet. It has a significant

influence on nations by assisting in the creation of jobs, the development of infrastructure and providing a very with a significant amount of money and revenue [3]. Tourism improves a country's ability to build things like roads and bridges. It has things like a good transportation and communication network, cheap and comfortable accommodations, important infrastructures, and tall buildings [4]. People in many countries now include tourism in their national plans to improve their economic and physical environments and make people more socially connected, because it is a good way to do this. Tourism also has a big impact on things like the general appearance of the environment, the construction of hotels, and other businesses [5]. Another benefit is that it makes sure that there is enough infrastructure for people to live there. This includes electricity, roads, water and a sewage system.

Tourism could also help build national unity and understanding through trips inside and outside the

country. People will be more peaceful and united if tourism is properly planned. Many people will be able to visit different states and tribes. This will stop fights and reduce tribalism and religious tensions. Thus, it promotes a sense of oneness and love among people from different countries, builds good relationships, and unites society [6]. It helps us remember where this approach came from, which is very important. It also helps people keep their cultures and traditions alive. The preservation and development of local traditions and native handiwork help to make unique local tourism products and this internship helps spread the word about the country's history[7]. Tourism is a major source of foreign currency revenues and jobs in many nations, both established and developing. The ability of visitors to connect with tourist destinations is one of the most important success elements in the development of integrated tourism [8]. Tourism is described as travel for the purpose of pleasure, recreation, and business. According to the World Tourism Organization [9], tourists are those who travel to and stay in places other than their home country for a period of less than a year for pleasure, business, or other reasons[10]. The private sector's awareness and understanding of tourism show that with well-organized tourism private sector participation and government realization of tourism, tourism activities can generate employment, improve social life in rural areas, and provide reasons for the government to provide much-needed tourist infrastructure for the growth of tourism in our country [11]. Computers' applicability and usage in many aspects of human activity cannot be overstated. The field of office automation has continued to develop since the debut of microcomputers in the 1970s and 1980s, with modernizations made to the current ones [12]. Some may ask why a computerized tourist information system is required. It's because people are doing more and more things on the Internet these days, so it's fair

to use the Internet to make tourism activities easier to find and more attractive [12]. It would be easier and more organized to use an online tourism system than a paper filing system. It can also be used to help with the manual system. It can act as a backup for all the information in the files, making them safer in the cloud[13].

The rest of the paper is organized as follows; Background Theory will be illustrated in section II Literature Review will be described in section III, Results will be discussed in section IV. Finally, the conclusion is presented in section V.

## **2. Background Theory**

Technology has completely changed the way people travel and the latest innovations promise an even more thrilling experience shortly. There can be no dispute about the significance of technology and the role it plays in the tourist industry and this is especially nowadays. Technology has had a significant impact on tourism now and it will continue to have an impact in the future[14]. It is now possible to book your entire trip from the comfort of your own home, including everything from the destination you choose to travel to your lodging requirements. This is made possible by the convenience of the Internet, which allows you to book everything from the comfort of your own home[15].

### **2.1 Tourism**

Tourism is going to be become more and more important to the economic and social development of places around the world over time. It's not just important for a destination's government and tourism industry to know how tourism helps its economy grow. Still, it's also important for academics who study how tourism affects the economy. Today, a lot of tourism websites put online services and information right at the users' fingertips. The success of these websites is based on how easy they are to use[16].

In the tourist industry, there are three primary types

of tourism to consider: domestic tourism, international tourism and outbound tourism [16].

- In the context of tourism, domestic tourism is defined as any activity undertaken by a tourist that takes place both inside and outside of their own nation. There is no such thing as a formalized euphemism (e.g. a Brit visiting other parts of Britain).
- To begin with the actions of a tourist who is not originally from the nation in which they are now residing are referred to as "inbound tourism" (e.g. a Spaniard visiting Britain).
- The behaviors of a resident tourist that take place outside of their own nation are referred to as outbound tourism (e.g. a Brit visiting an overseas country).

## 2.2 Tourism Management System

Tourism Management System is a piece of integrated software designed specifically for the tourism industry. It is a dynamic and responsive system that tackles issues such as record management, missing records due to human error and so on. In order to do this, it is necessary to develop a system that can manage all elements of travel [17], including booking, sightseeing and so on. This system establishes direct communication between customers and travel agencies, provides a platform for tourist feedback, administers and supervises a tourist database and offers a variety of travel services. Using cloud computing services enables us to keep sensitive information in the cloud without danger of it being stolen[17]. As a result, it streamlines the process, saving us time and effort. Furthermore, it allows for simple record updates and management. If a user wishes to alter any of personal information, they may do it quickly, and the change will be reflected in the cloud, as illustrated in Figure 1.

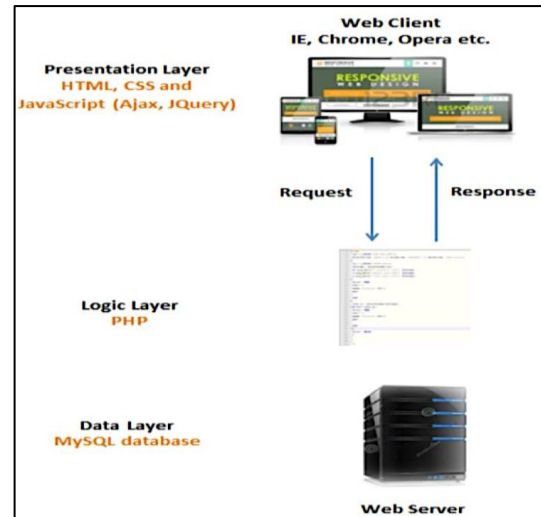


Figure 1: Architecture of web-based system Layers.

The term "tourism management" refers to the management of all areas of the hotel and tourist sector. In addition, it offers thorough training for management positions in the tourism, accommodation and culinary sectors. Working with organizations or entities that are directly involved with the provision of tourist services may also qualify as tourism management [18].

On the other hand, advancements in technology, security and internet speed have allowed web-based solutions to reach a far wider audience than in the past. Web-based firm accounting systems, web-based customer relationship management systems, a web-based Microsoft Office, and other services are now accessible. Web-based applications provide several advantages over native client-based software[19].

## 2.3 Web-Based System

A web-based system is a software that may be accessed via the use of the Hypertext Transfer Protocol (HTTP). The term "web-based" refers to software that is designed to be operated via a web browser. Also, it may be used to describe programs that only have a small fraction of the solution loaded on the client's machine. The host server for a web-based system might be a local server or one that is accessible over the Internet[20]. Online brochures as well as value and services, to provide provided via a web-based tourist information system. Tourists often

seek tourist attractions and facilities based on their geographic location and surroundings, as seen in Figure 2.

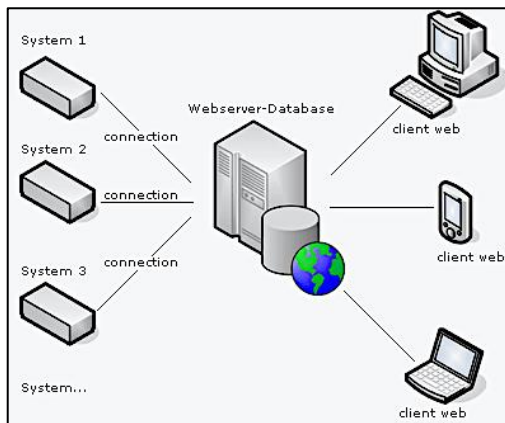


Figure 2: a web-based system.

The system was designed using the Rational Unified Approach as the software development method, while MySQL, HTML and PHP were used as the implementation technologies to create the system. After it was completed, the system was able to offer information to users by pulling content from the web on the subject of interest in order to assist them in their decision-making process, which was beneficial to both parties. It might also be clever to propose tourist sites depending on their tastes, which would be accomplished via the use of a hybrid recommendation system[21].

## 2.4 Methodology

Specifically, information on published papers was obtained from IEEE Xplore and Google Scholar, which are used frequently by many researchers. Among the terms used in the search were website quality, website evaluation, website assessment and website measurement among others. Aside from that, efforts were undertaken to track down references that were referenced in published works. Following a thorough review of the papers, it was discovered that there are published studies that are directly related to the topic of website assessment in the tourist area. A total of 20 peer-reviewed papers were found to be related to this research. The publications were

divided into three categories, as shown in Table 1 in section 3, aims, regions, and results. The table also shows the yearly number of particles produced in each category. The most prevalent category of aims, it seems, is for websites that use a variety of ways. With twenty publications, destination websites were the second most popular category, while travel websites were the third most popular category.

## 3. Literature Review

The wide use of modern information technology has provided new options for tourist enterprises to develop within a dynamic and competitive market, as well as to find potential clients. E-commerce is one of the most fundamental technological features that enable reselling items over the Internet[22]. Networks help enterprises to optimize their performance, such as e-marketing, e-commerce, refinancing, e-counting, and e-HRM processes, as part of the modernization of all tourism activities and value[23].

Hughes et al. [24] Analysis of current tourism management approaches was conducted using future and design thinking to discover crucial touchpoints that relate visitor preferences to management plans. Popular among the attendees was the potential impact of current and future improvements in information and communication technology (ICT) on how tourism businesses and organizations interact with and manage visitors and tourists. Five touchpoints were utilized to uncover and analyze how technology may affect the tourism industry: choice, connection, co-creation, customization and compliance. In order to predict the future of technology in tourism, design thinking and storytelling were used. When it comes to visitors and their experiences, it was said that technology has the capacity to fundamentally transform how we approach them.

Kazandzhieva et al. [25] studied how and why e-tourism came to be, and developed a conceptual framework for it based on what they found and

learned. The process of e-tourism has been discovered, and its nature has been examined. The scientific methodologies and procedures that employed were related to: analysis and synthesis; content analysis; methodical and chronological technique; systematic screening of academic articles. The scientific study has resulted in creating a conceptual (theoretical) framework for the e-tourism system, which includes the introduction of fundamental groupings (subsystems) and integrated components and the identification of unique relationships between them.

Wu et al. [26] made a lot of contributions. First, it makes a Web-based TSA information system that the government, industry can use, and other groups to make better use of TSAs. Second, this platform has a lot of features that cover the whole process of putting together a TSA: data collecting, data administration, TSA compilation, statistical analysis, and more. TSA data are generated and used in the same way, which allows for thorough and accurate analyses of tourist development over time and place. To sum things up: Third, the recommended unique technique increases not only the efficiency of TSA compilation, but it also provides academics with a whole fresh perspective on the subject. This is the fourth time in a row that the system has made it simple to schedule a TSA checkpoint. There were no major issues with the implementation of the system, which allowed for the regular compilation of the TSAs for use by the government, industry and academic parties.

Al Fararni et al. [27] presented an overview of the numerous tourism-related recommendation methodologies. The architecture and conceptual framework for a tourist recommender system are given based on a hybrid recommendation technique. The suggested method goes beyond just recommending a list of tourist destinations based on the tastes of the visitors. It may be compared to a trip planner that creates a precise itinerary for a certain

visit length that includes a variety of tourist resources. By proposing the most relevant things and assisting him in personalizing his tour, the hybrid architecture strives to enhance the visitor experience. We want to build a recommendation system using big data, AI, and operational research in order to increase tourism in Morocco, notably the Daraa-Tifel region.

Almaimoni et al. [28] suggested building and using Tourists would benefit from an intelligent platform that will assist them in receiving accurate and relevant information about the locations they visit, such as their location, where to eat, and what is happening. The UML, MS-access 2010, and the V-Studio programming languages are all examples of modeling languages were used to design and build the project. It will be possible for the proposed tourism system to give tourists the correct and relevant information they need about places to visit in the Kingdom of Saudi Arabia. It will also be able to give the tourists suggestions for places to go based on their preferences.

Pierdicca et al. [29] Presented a cutting-edge ICT infrastructure that is tailored to the tourist industry. "La Valle del Pensare lungoil Corso del Potenza," was the instance presented. Created an essential communication system that allows tourism routes to mining sites as well as specialized theme routes around the country, promoting historical centres, cultural treasures, green spaces, and fascinating locations. The information system for "La Valle del Pensare" is expandable and multi-purpose, with material that can be controlled and delivered through the website, mobile app, totem touch screen, and regular tourist signs. Finally, La Valle del Pensarelungoil Corso del Potenza was determined to be an essential communication system, i.e. an innovative ICT infrastructure that allows tourism routes to mining sites and notable theme routes throughout the country.

Li et al. [30] Introduced a tourist route suggestion

program that is based on the user's previous preferences and selections. The tourist data was gathered via online searches using LBS. The program can propose tourist routes based on both web-based location information and the user's preferences, which determined the weighting of tourism addresses. To assist users in finding the most appealing tourist route, a revised weighted route computation technique is suggested. To compute the recommended route and display it on the map, the program used the map API. To provide a better user experience, the whole system is developed and built on the Android platform. The system uses the Leancloud database as a cloud storage database. Experiments reveal that users may choose their optimum path based on the software's recommendations.

Ruizet al. [31] Given that existing diagnostic models of sun and beach destinations do not accurately represent the true dynamics of a growing tourist destination, this paper presented a new diagnostic model of sun and beach destinations, as well as an analysis of a set of explanatory theories about the tourism system. They created a new predictive model that could be used to look at the tourism system and figure out what was going on with it. Ancón district is a Peruvian coastal town. The technique and its design are theoretical and phenomenological in nature. The study spans the months of May 2018 to March 2019, during which time it was able to observe the high visitor demand as well as the natural flora and wildlife of the Lomas de Ancón in its two seasons: winter (2018) and summer of 2019. (dry season). Also, it stated that the new analytical model enables the identification and comprehension of the dynamic and potential of sun and beach tourist destinations in the growing phase. The Ancón area has the resources and attractions to create new tourism goods and broaden the local tourist offer.

Hassannia et al. [32] an answer An agent-based and

web-based hybrid proposal filtering system was suggested for the smart tourism business, which they should implement. A hybrid recommendation system based on agent technology should take into account online communication with other tourism business sectors, such as the supplier chain, travel agencies, and other comparable organizations. However, contract net protocol is used to develop and create online communication across sectors with the employment of agents. A web application built on top of the Java Agent Development Framework is used to implement the design system in this case. Customers' willingness to recommend the recommended web application increased due to the results of two scenarios involving 100 customers. The rate of acceptable recommendation increased by 20% in the first scenario without interruptions, whereas the rate of acceptable suggestion increased by 30% in the second scenario with disruptions. Furthermore, based on the second scenario, real-time data communication occurred in the system, and as a result, the recommended system permitted real-time data transmission.

Vysotsky et al. [33] Created an online tourist system to generate ideas for users based on data integration from several sources, revealing the greatest prospects for every user to expand their region, improve associated photos, boost the popularity of their services, and attract new consumers. Employed data integration rather than relational databases to ensure that data remained relevant in perpetuity. The technology facilitated the selection of points of interest and the creation of personalized tours not available via travel companies, ensuring that each user feels unique. The program will be simple to use, relevant, and, most significantly, cost-effective. The tremendous growth in the popularity of smartphones has increased consumer interest in mobile tourist apps.

Antonyuk et al. [34] Presented the field of tourist

information systems necessitates gathering and processing data from a range of sources and in a variety of forms. The work described results in a consolidated information Web resource for online tourism that supports geolocation and provides the user with valuable tourist information compiled from several sources. Your tour is the name of the system that was established. The offer information on the system development process, including functionality clarification and comparisons to comparable systems. The user interface is also detailed and an example of system use. The information system for tourism is the product of the effort mentioned. After reviewing the sources, it was determined that none of the already available information systems integrates all of the services required for visitors' convenience. As a result, it was vital to develop a tourism application that was both easy and instructive.

Etaati et al. [35] Presented a deep neural networks for autonomously identifying historical data on a web-based cross-platform mobile framework sites in Iran that has been developed and is provided. It is the decentralized servers that analyze the photographs captured by the tourist's mobile phone and it is these decentralized servers that decide and distribute the information about the landmark to his or her mobile device. A web-based cross-platform framework based on a deep CNN is described for the autonomous identification of historical sites in Iran for the purpose of smart tourism. The system is based on a deep CNN. The suggested framework assessed the tourist sites in Iran, and the experimental findings demonstrate that the proposed system is capable of recognizing historical landmarks with an accuracy of 95%.

Xiang et al. [36] Design Science in Tourist and Analytics in Smart Tourist Design, two edited works that shifted the conceptual and methodological foundations for building tourism destinations to the forefront of tourism literature, have been built on in

this book and other publications. Vacationscape, a seminal piece by Clare Gunn. There has been an explosion of new ideas and approaches in the fields of psychology, behavioral economy (marketing), management (management consulting), and the data sciences as a consequence of this motivation. On to the following segment, which provided an overview of the tourist design system as a whole before delving more into the nature and role that smart tourism may play in helping this framework go further. For her part, she curated a collection of papers in the journal Travel Research that focus on a broad range of important topics in the travel and tourism sectors.

Hassannia, et al. [37] Design and development of an agent-based suggestion filtering system for the smart tourism sector was suggested. Internet contacts with different tourism-related sectors, such as the TSC, agency, and so on, are used to construct a hybrid recommendation system based on agent technology. Agents are utilized to construct and develop online communication across sectors using the contract net protocol, despite this. A web application based on the Java Agent Development Framework is used to implement the design system. Two scenarios, each with 100 customers, indicated a 20 percent and a 30 percent increase in the percentage of customer referral in the proposed web application's first scenario without interruptions, respectively, according to the data. According to the second scenario, this system allows real-time data communication since data transmission is real-time.

Wang et al. [38] Introduced the design and built a recommended system for the smart tourism industry that user agents and web technologies. It made use of a hybridized recommendation filtering system designed specifically for the industry. It is possible to create a hybrid recommendation system based on agent technology by including online contact with other areas of the tourist industry, such as the TSC, into the system. The design system is created using

the Java Agent Development Framework and is then converted into a web application for use on the Internet. Using two real-world situations and 100 consumers, the suggested web application was able to demonstrate that it enhances the pace at which customers get suggestions. This rate increased by 20 percent in the first scenario without disturbances, and by 30 percent in the second scenario with disturbances, respectively. The real-time data transmission enabled by the proposed technology was as a result.

Mango et al. [39] Presented developed a spatially based strategy for managing and promoting tourist resources in Sub-Saharan African nations. The suggested geodatabase serves as a repository for tourism data that can be used to create dynamic and interactive web maps. This geodatabase serves as a hub for gathering and analyzing all tourism data, which is subsequently supplied to visitors in the form of maps through cloud computing. After six inquiries, the successfully created WebGIS was accessible, and the online maps included within were interactive, demonstrating its practical applicability. Our findings show that the WebGIS model we developed can effectively manage, promote, and maintain the tourist business. Future research should focus on adopting the suggested model in various tourism-related nations. They should also concentrate on improving cloud web-map servers so that they can self-contain raster and video data properties for automated pop-up displays, ensuring the independent system's high security and dependability.

Alrasheed et al. [40] Suggested a multi-level tourism recommender system architecture to assist users in determining the best location for them. Each user's request for a location suggestion goes through two stages. The user will first be presented with a list of locations depending on her choices. This collection includes places that are popular with people that are similar to you. Second, the system uses data scraped

from many Web sites to rank the chosen locations based on sets of user preferences and constraint criteria, taking into account the dynamic context of each journey. The present approach evaluates a destination's appropriateness based on the number of similar attractions and hotels. To improve the accuracy of the suggestion process, future directions include adding the ratings of attractions and lodgings in the choice of picking a location. A suggested recommender system may be evaluated using a variety of approaches. These approaches may be divided into two categories: objective forecast accuracy and subjective user opinions. The outcomes of the two types of procedures listed above are not always correlated.

Hossain et al. [41], built travel and tour management systems in order to provide a found stage where tourists may select their trip destinations based on their own preferences. The system also contributed to the promotion of safe and enjoyable tourism, allowing people to spend their holiday time in their favorite locations. Their goal in developing this system was to establish and enhance types of tourism that allow for greater collaboration chances between visitors and locals while also raising awareness of diverse cultures, habits, lifestyles, traditional knowledge, and beliefs among the general public. The Map and exploration system, as well as other tourist evaluations, are also available to tourists on the website. Tourists may also book tours using our tours with packages and travel management system, which is available to all customers. The results help manage tourism villages so that traditional media and social media can be used to promote and market tourist destinations with better coverage and quality than before.

Choi et al. [42] suggested a travel recommender system to automate word-of-mouth (WOM) impacts and provide travelers with individualized vacation planning services. WOM communication is the



fundamental idea of collaborative filtering (CF)-based recommender systems, which have been widely used for customizing services in a variety of fields. They create a prototype and a benchmark system to assess the proposed trip recommender system's efficacy, usability, and uniqueness. The findings show that a technique for individualized tourist trip planning and automated WOM communication beats the benchmark system. System of recommendations. The experimental findings suggest that a technique for conducting individualized tourist trip planning and automated word-of-mouth communication beats the benchmark system in terms of efficiency and effectiveness.

Wang et al. [[43]] described a combination of both content analysis and qualitative analysis of a combination of both sexual themes and how to analyze tourism personnel to visit wildlife tourism to understand the problem of how to understand tourism wild animals after a visit to the experience are studied using the current common network text analysis method. The tourism experience of wildlife visitors is meticulously and correctly documented and assessed. The findings indicate that travelers, places, and animals are the three most important topics in the wildlife tourism experience. It is more probable that visitors will snap photographs of wild animals and get into close contact with them when they go to see them. They are closer to wild creatures and engage in more interaction with them, resulting in greater satisfaction with the overall tourism experience for visitors. According to the researchers, this web-based text analysis tool is 20 percent more effective than conventional methods such as surveys.

**Table 1. Summary of literature review related to Design and Implementation Tourism Web-Based Systems**

Author	Region	Author's objectives	Results
Hughes et al. [24] 2019	World wide	On how current and upcoming changes in the ICT would alter the way tourist firms and organizations connect with their manage,	As a consequence of design, more complex content, the significance of suitable linkages, and the important role of their coordination and

		customers, speculated.	we collaboration in future tourist systems are all highlighted.
Kazandzhieva et al. [25] 2019	Europe (UE)	To build and implement a conceptual framework for an e-tourism system, based on an examination of the variables and circumstances that influenced the creation and growth of e-tourism throughout time.	The successful operation of the e-tourism system is due to a proactive, innovative management style that is always looking for new ways to integrate and improve the system. E-tourism is a way to fully exploit its potential and scope, which is a strategic goal for businesses and destinations in a digital economy.
Wu et al. [24] 2019	Guangdong Province, China	Web-based information systems that incorporate data entry and storage, as well as statistical analysis and various other applications in addition to data input have been developed and implemented.	TSA and expands the usage of TSAs for assessing the economic impact of tourism to regions while also expanding the capacity for tourist data management and TSA compilation.
Al Farani et al. [25] 2021	Al Morocco	It was shown that a hybrid recommendation technique-based architecture and conceptual framework for a tourist recommender system could be created.	The outcome of hybrid architecture designed to enhance the visitor's experience by proposing the most relevant objects and assisting him in customizing his or her itinerary.
Almaimoni et al. [28] 2018	Kingdom of Saudi Arabia	Design and install an intelligent platform that will assist travellers and obtain accurate and relevant information on Saudi tourist destinations such as location, restaurants, and activities, as well as about the events themselves.	In addition to providing accurate relevant information to travelers about tourist destinations in the Kingdom of Saudi Arabia, the system was also able to provide suggestions for locations to visit depending on the preferences of the tourists.
Pierdicca et al. [29] 2019	Marche (Italy)	In this presentation, we will discuss an innovative ICT infrastructure that has been particularly created and optimized for the tourist industry.	It represented an essential communication system, as well as an innovative ICT infrastructure, which facilitated the tourism routes of mining attractions as well as particular theme routes over the whole region.
Li et al. [30] 2021	Wuhan, China	An automated tourist route suggestion system based on the user's previous selections and preferences has been implemented.	In experiments, it has been shown that users can discover their optimal path based on the software's recommendations.

Ruiz et al. [29] 2021	Metropolitan Lima, Peru	A novel diagnostic model for sun and beach vacation areas was presented. We developed a novel prediction model, which we utilized to develop a diagnostic approach for the tourist industry, which was further refined.	The outcome of an examination of the tourist dynamics of a selected location, in which the components of the tourism system interact with one another within a certain geographical area is called a tourist dynamic.
Hassanni a et al. [30] 2019	World wide	Make recommendations for the smart tourist business using agent and web technologies, and filter them using a hybrid recommendation system that you design and create yourself.	The findings of two case studies involving 100 consumers showed that the suggested web application increases customer referral rates. The disruptions rate increased from twenty percent to 30 percentage. In addition, the suggested system provided real-time data transfer based on the second scenario.
Vysotsky et al. [31] 2019	World wide	Create an online tourist system that uses data integration rather than relational databases to ensure that data is always up to date and relevant.	In general, the application interface is simple to use and fairly comfortable, owing to the fact that its content comprises all of the most important components that travelers need for their journey.
Antonyuk et al. [34] 2019	Lviv, Ukraine	This document contains information on the system development process as well as the clarifications on the functionality of the systems, as well as a comparison with other comparable systems.	It was determined that the implemented system is operationally sound and performs all of the duties that were anticipated. However, although the application's functionality is proper, it may be enhanced to add the new features.
Etaati et al. [33] 2019	Iran	Iranian historical places may now be identified using a new web-based cross platform mobile framework powered by deep neural networks. The framework is cross-platform and web-based.	Iranian tourist attractions were examined, and testing findings revealed that the suggested system is capable of recognizing historical sites with an accuracy of 95%.
Xiang et al. [34] 2021	World wide	Following an introduction to the tourist system as a whole, attendees debated the nature of smart tourism and how it contributes to the improvement of this system.	Established the Curated Series on Tourism Design by choosing a set of papers published in the Journal of Travel Research that cover a wide range of important problems affecting the future of the tourism industry.
Hassanni a, et al. [35] 2019	Turkey	A system based on web and agent technologies is highly recommended and makes use of a hybrid recommendation filtering for the smart tourist sector, being designed and developed by a team of designers and developers.	The findings of the case study with two actual situations and 100 customers showed that the suggested web application boosts the percentage of customer referral without disruptions and 30% with interruptions. Also, depending on the second scenario, the suggested system supports real-time data transmission.
Wang et al. [36] 2020	Sichuan province, China	The tourism destination image (TDI) reflects tourists' spatial and psychological participation. The TDI is separated into two groups: on-site and after-trip groups, and the two groups are contrasted in the context of three-dimensional continuums.	The data demonstrate that, from the stage on-site to the stage following the trip, tourists' experience of TDI varies from being psychologically focused to being functionally oriented, and from being common to being unique. In addition, it has been proposed that from a postmodernist standpoint, yet it has varied image impressions and feedback for different visitors.
Mango et al. [37] 2020	sub-Saharan Africa	Developed a Geographic Information System that is accessible over the Internet (GIS).	Online maps were created using the results of tourist data flow and database models that were incorporated into a web-based GIS that had more abstractions than the original.
Alrasheed et al. [38] 202	Riyadh, Saudi Arabia	To aid prospective tourists in finding the place that best suits their interests and needs, a basic recommender system architecture has been developed and proposed.	This kind of study assesses the understandability and usability of the system by showing the users' interaction on pathways and determining the amount of users who opt to exit their commander system.
Hossain et al. [39] 2021	World wide	Customers and travel agents will benefit from the greatest possible travel support, as revealed.	Information about tours is provided by this system, such as which buses can take you to certain locations and which towns, provinces, and tourist sites are located nearby.

Choi et al. [40] 2021	Korea	We proposed a trip recommender system that assists tourists in creating their own tailored vacation plans using constraint satisfaction filtering and constraint satisfaction analysis.	According to the findings, a new strategy for customizing tourist trip planning and automating word-of-mouth communication outperforms the benchmark system.
Wang et al. [41] 2020	World wide	With the help of appropriate software, we can conduct a content and qualitative analyses to evaluate sexual themes in a thorough manner, and we can learn about the problems that tourists encounter while visiting wildlife tourism destinations.	The findings demonstrate that travelers, places, and animals are the fundamental topics of wildlife tourism. Tourists that visit wild animals are more inclined to snap photographs and approach near.

**4. Discussion and Recommendations**

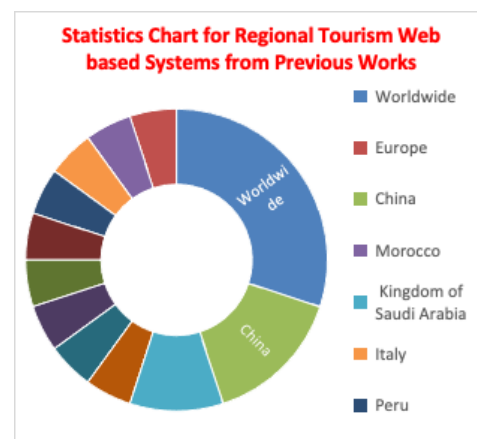
**4.1 Discussion and Comparison of the Previous works**

When conducting Qualitative approaches were often used in the early stages of this study to explore the viewpoints of certain groups, such as (Customers, suppliers) academic researchers, on specific features or functions of tourism-related websites, such as those that provide travel information. Because just a small number of participants took part in the research, one of the significant limitations of these early investigations is that the conclusions are not generalizable. Moreover, while enlisting academic academics in the process may help assure high degree of confidence in the instruments used by the researcher’s little expertise in online shopping. However, the use of quantitative methodologies in website assessment research has developed through time, with input from customers and practitioners becoming more prevalent. The findings of quantitative research seem to be more relevant to wider market segments than the findings of qualitative research, even though the generalizability of the results is still a source of worry in the field. In order to better understand websites, several

academics are combining quantitative and qualitative methodologies into their study.

The purpose of this research is to review past studies that had used a variety of methodological techniques to evaluate tourist websites. Researchers and practitioners are likely to gain from the discoveries, which will aid in their understanding of what has been accomplished so far in the field of genetics. Those who work in the industry may use the data a reference point for assessing the strengths and shortcomings of their websites, as well as determining their market position as this study's findings reveal research gaps, academics can expect this study to spur more investigation into tourist website evaluation approaches and other related topics.

The 20 studies utilized in this analysis examined whether their designed web-based techniques, which were implemented in their operations, aided workers in their duties. In summary, all of it have used a common web-based system. However, four of the references in this review article used the same system called Information Commination Technology (ICT). Figure 3 shows the statistics chart for regional tourism Web- based systems from previous works.



**Figure 3: Statistics Chart for Regional Tourism Web based Systems from previous works.**

### A. Recommendations

It is recommended to use Hypertext Preprocessor PHP of it is a great benefit for Web-based systems and it provides a massive help for making any ordinary system into the electronic one. The web-based system was designed with the assist of other programming languages to facilitate work processes. Undoubtedly, the system can reduce the risk of tourism. However, evaluating any system is always better to use the System Usability Scale (SUS) System Usability Scale. The system allows you to access information about tourism wherever and whenever any internet browser on.

### V. Conclusion

Currently, tourism is considered as a worldwide sector that is expanding at a rapid pace, similar to that of any other industry. This web-based application is used to assist in the maintenance of the database. It features a welcoming atmosphere that encourages consumers to interact with one another. As a result, it streamlines the process by allowing us to save time and effort. It will support the management in controlling and managing the operations of the system in an effective and efficient manner. Another alteration that could be conceivable is the integration of the system with larger organizations, such as tourist information centers, in order to better serve them. After studying different types of studies, it has been possible to draw a common conclusion which has been that the web-based systems that have been used, have been beneficial to their business. However, there were also some differences between the studies as each study utilized the system in different ways. For each research, several systems showed to be more or less beneficial in terms of efficiency, time efficiency, performance and job task facilitation.

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