The Role of Tourism Information Systems in Developing Tourism Activities: The Case of the Wilaya of Bordj Bou Arreridj – Algeria

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Abstract: Through this research paper, we've tried to highlight the importance of the availability of information and data in tourism activities for the various related actors, including consumers, producers and public authorities, and then we've seen the most important uses of information and communication tools in tourism activities, especially those related to the Internet, which can be an effective tool for creativity, innovation, and creating new ways in designing tourism services and ways of presenting them to customers and consumers, and also in helping in managing and following up the tourism service . In the same context, we discussed tourism information systems and their various components, which are considered as an effective tool that allows collecting, storing, organizing, analyzing and displaying various information and data related to tourism activities at the level of a tourist destination or at the level of a specific tourist activity. Finally, we tried to design a digital website that can be a basic basis for building a tourist information system for the Algerian wilaya of Bordj Bou Arreridj, which could be a distinguished tourist destination compared to the tourism resources it possesses.

Keywords: E-Tourism; Tourism Development; Tourism Information Systems

1. Introduction

The development that tourism activity has witnessed in recent decades, whether in terms of the increase in the number of tourists or in terms of the tourism revenues generated, has made this sector a real industry characterized by intense competition between various actors, and whose scope extends internationally, nationally and locally to attract a larger number of consumers, which it makes the availability of tourism information a pivotal element in building various development and marketing policies.

In this context, tourism information systems are considered as strategic tool that helps to collect, store, process and distribute tourism information effectively and systematically, which represents an important bridge linking tourists, tourism service providers, government agencies and private institutions, by relying on a set of advanced technology and software to collect and analyze tourism data. And then provide information in a simple and effective way to travelers and those interested in tourism. Which can contribute significantly to enhancing the tourism experience and increasing interaction between tourists and their destinations.

Based on the above, we will try, through this research paper, to give a theoretical

vision to build a practical basis for the implementation of a tourist information system for the Algerian wilaya of Bordj Bou Arreridj, in order to present different types of data and information about the various existing tourism resources, within interactive framework that allows the various actors to deal with this information in a simple and effective manner.

1.1. Research Problematic

This research paper attempts to answer the following main problematic:
What are the steps that must be followed to establish a tourist information system for the Algerian state of Bordj Bou Arreridj?
In this context, we will try to answer the following questions:
- What is the importance of the availability of tourism information for tourism market players?
- How can modern media and communication be used in tourism activities?
- What do we mean by the tourist information system and what are its components?

1.2. Research Aims

This research aims to achieve a set of objectives, including:
- Explaining the importance of the availability of information related to various aspects of tourism activity for all stakeholders.
- Explaining ways to exploit modern media and communication tools, especially those based on the Internet, in promoting tourism activities, whether in the field of creativity and innovation, or managing and organizing tourism services.
- Shedding light on tourism information systems that represent an effective means of collecting, organizing and displaying tourism information at the level of destinations or activities in a specific area.
- Trying to design a digital website that can be a basic basis for building a tourist information system for the Algerian wilaya of Bordj Bou Arreridj, which could be a distinguished tourist destination compared to the tourism resources it possesses.

2. The importance of tourism information for actors in the tourism market

The special character of tourism activity makes the availability of tourism information a pivotal matter for the various actors in the tourism market, including public authorities, producers and consumers, which we can explain through the following elements:

2.1 For the consumer

The tourism product is not a standard product, but rather it is a basket of integrated and interconnected goods and services that tourists consume and need during their stay, it is a complex and multi-form product (accommodation, transportation, food, souvenirs, entertainment and amusement centers) and it is related to other elements such as infrastructure, security and political stability, accompanying services and transportation, and even a set of administrative procedures related to the entry and exit of the tourist.

Therefore, the availability of various tourist information related to the various aspects of the tourism offer in the region, in terms of quantity and quality, has become a pivotal matter in determining the travel decision, especially since that the tourist trip is limited in time due to the tourist's availability and limited in place due tothe limitaion of the region that owns the tourism components. Therefore, maximizing the satisfaction of the tourist's need for pleasure and entertainment is related to the extent of the availability of information that determines the extent to which the tourist trip matches his desires and what he wants to obtain from this trip (Abdulla Alharmoodi, et al., 2024).

2.2. For the producer

The intangible and personal nature of the tourism product makes it difficult to set fixed standards and specific characteristics of this product in order to respond to the all

requirements and aspirations of different segments of customers, especially since the tourism services package is characterized by heterogeneity and differs in its nature, characteristics and objectives and cannot be dealt with uniformly aspect.

Therefore tourism information has become a necessary matter for tourism producers, as building a database of customers, especially those related to their geographical distribution, or their social and demographic characteristics and their consumer behavior, which will help to determine their needs and aspirations, and contributes to provide and offer innovative and more diverse tourism services that are compatible and touch various consumer preferences, and this to attract a largest number of consumers.

2.3. For public authorities

Tourism information represents a basis for building an estimated picture of the volume of tourism activity in the region for national and local public authorities. They are obligated to collect data and information related to tourism activity, such as those related to the various elements of tourist attractions present in the tourist destination, or data related to the flow of tourist arrivals in time and place, in order to draw development policies and tourism plans that seek to raise the capabilities of the tourism supply in the region, which can be done by equipping the region with all structures of infrastructure and public facilities that allow receiving tourists, as well as identifying points and locations for establishing various tourism projects such as accommodation and facilities for recreation and entertainment. This is through optimal use of tourism resources, allowing for the preservation and valorization of those resources on the one hand, and responding to the aspirations of the local population by making them the direct beneficiaries of the returns from tourism activity (incomes, job creation, public services).

FBER
111

3. Using digital media and communication in tourism activities

The spread use of mobile phones among the general public, coupled with the continuous technological their development and the diversification of the services it provides, has made it possible to benefit from them in various areas of tourism activities, as to provide tourist information, such as maps and charts, the tourist can view his e-mail, news updates, read books and research, and other things available on the Internet, also he can communicate with his family and friends via phone calls and social networks, even these tools can help him in his decisions related to the acquisition of various products, and even to designing and following up on the management of the tourism service (Yousfi, 2014).

In this regard the portable media and communication allow tourists to respond immediately and permanently to their requirements during their travel, as well as these devices represent a reliable source of information, and they provide various explanations and comments regarding visited areas and existing tourist attractions interactively and visually (pictures, video films, visual advertisements...), and they give also information related to the tourist services available there, such as accommodation, feeding, transportation, and various services (exchange offices, stores...), and they can obtain also information about other services such as cultural events, local trips and various activities that would serve the tourist in the field of recreation and amusement, furthermore they can have an idea about the quality of the services by exploring testimonies of previous real tourist experiences and information related to the customs and values spread among the local population, which relieves the user from using various paper maps and charts, which may not contain all the information that the tourist needs, either because the document is old and the information in it is not updated, or because it is impossible to put all the information on it.

In this context, a report on e-commerce in the European Union shows that more than 70% of Internet users made at least one purchase of a good or service online during the year of the study period for private use, and among these, more than half (54%) purchased a trip. Or holiday accommodation, noting that this category comes in second place after the category of users who purchase clothing and sporting goods, who represent about two-thirds (65%) of Internet users, with it being confirmed that online shoppers in the age group of 25-54 years

are the most Prone to purchasing travel and vacation trips (57%) (OECD, Tendances et politiques du tourisme de l'OCDE 2020, 2020).

3.1. Innovation in designing, organizing and presenting tourism services

The importance of using modern information and communication technologies (photos and videos on the Internet, digital signboard...) in presenting the services provided and examining their characteristics and quality to consumers regardless of their location before purchasing them, and which allows the tourist to get a prior taste of the tourist trip, and can be able to plan comfortably and develop a specific program for his tourist trip by reconciling the various types of tourist services in accordance with his aspirations and what the tourist wants to obtain from his trip, when this process previously required a longer period using traditional paper presentation media (brochures, guides, paper signs, etc.), which can only contain a very limited amount of information about the tourist service, and do not adequately reflect the quality of the services offered, and they cannot be updated except after a period of time.

In this context, the Booking.com platform is considered one of the leading actors in the field of providing tourism services via Internet. It is a free and integrated platform that displays the various services that tourists need during their trip. It employs about 21,400 workers across the world with a payroll estimated at more than 2.46 billion dollars, and the turnover that was traded through the platform in 2022 was equivalent to 121.25 billion dollars, an increase of 25% over the number achieved in 2019 before the outbreak of the Corona pandemic, we note also that the company alone achieved a turnover estimated at 17.09 billion dollars in the year 2022, with a net result estimated at 3.05 billion dollars. During this year, 896 million tourist nights were booked, 62 million daily car rentals were sold, and 23 million airline tickets were booked in 2017, equivalent to $12.7 billion, by obtaining commissions from hotel owners for each reservation, ranging between 15 and 17% (Yung, 2024).

3.2. Innovation in provided services to customers

The innovation process in this field aims to provide facilities and assistance to customers, using information and technological products such as software, search engines, smart programs, and autonomous machines (automation), in the sense that information programs accompany the customer while browsing the organization's website, which displays all the information related to the tourism service and what the tourist needs during his trip, it also allows providing various advice and directions in order to customize and diagnose the tourism product according to his desires, and then offer the most appropriate product (service) and his aspirations, starting from inspecting the product requested by the customer, to booking hotel accommodation, purchasing transportation tickets, renting transportation vehicles, and even working to provide various types and types of tourism services that are consistent with the nature and objectives of his trip.

The Booking.com platform provides its services based on a set of tools and programs integrated into the platform that use artificial intelligence to respond to the different requirements of users (Booking Assistant) especially issues related to payment processes, transportation, arrival and departure times, date changes, and cancellation requests... It also guides and assists users in covering all aspects of the tourist trip from transportation, accommodation, feeding, and even the activities that can be practiced during the tourist stay (Passion Search), and in addition to this, to improve their revenue management, the best daily rates for each type of accommodation are determined using advanced algorithms based on data related to requests, seasonality, events, competitor prices, etc. They have the option to choose a subscription with "Rate Manager" (Partners, 2024).

3.3. Managing and following up the tourism service

Modern technologies of information and communication, have allowed for a powerful leap in the management and organization of services in tourism institutions, (Larbi , Oruezabala, & Bidan, 2021), among these services we mention the following:

FBER

112

– Electronic booking and payment, locally and internationally, which allows for automated and immediate accounting processing.

– Displaying products and information about tourism activities in a digital form (destination, date, time, service contents), with the ability to inform customers of any urgent change in the service provided in real time.

– Sending a huge volume of information in real time between dealers, suppliers and customers (e-mail, audio and video transmission).

– The ability to fill out customer forms via the Internet and process them automatically in order to upgrade or customize services.

– Obtaining in real time an inventory of all sales and the status of the utilized structures, thus reducing idle capacities.

A report on e-commerce in the EU shows that over 70% of internet users have made at least one purchase of a good or service online in the past 12 months for private use. Of these, over half (54%) purchased a trip or holiday accommodation, with this category only trailing clothing and sports goods, which were purchased by around two-thirds (65%) of these internet users. Online shoppers in the 25-54 age group were the most likely to purchase trips and holidays (57%) (OECD, Tendances et politiques du tourisme de l'OCDE 2020, 2020).

Fig. 1. Percentage of tourism companies practicing online commerce in 2023 or the latest available year

FBER

113
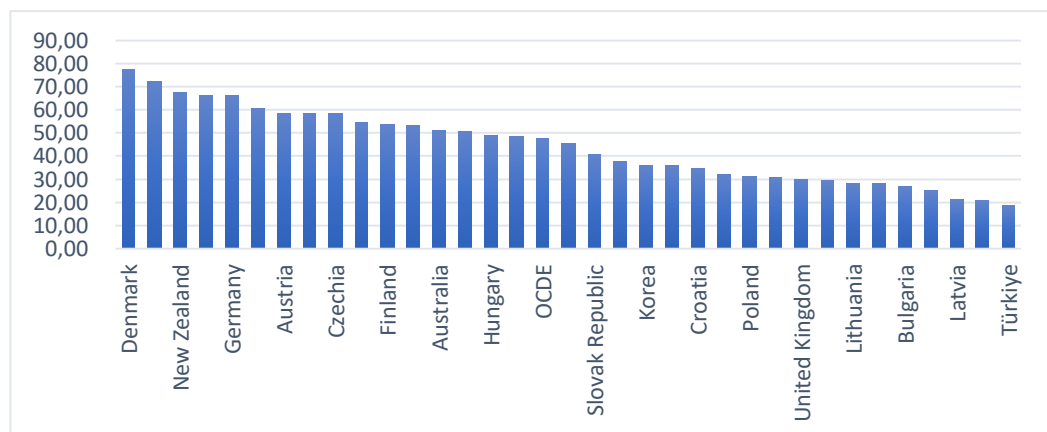
Source: from (OECD, 2024)

4. The nature of tourist information systems

Tourism activity is considered a spatial service activity, as it is closely linked to the place, geographical location, or tourist area, as the product cannot be transferred to consumers, but rather they must move to the tourist site to acquire the tourist service, because of that the tourism resources present in the region, which in some cases cannot be imitated or created, represent the main nucleus around which various tourism activities revolve, and are the main factor that push people to travel and motivates them to go to a specific tourist destination. Some of these resources are natural and acquired, such as landforms and climate, and others of them are artificial, such as an amusement and entertainment center, and others are intangible, such as the cultural and historical heritage that has been passed down to various generations in the region.

Here comes the tourism information system, which derives its foundations from geographic information systems, which is considered an effective tool that allows the collection, storage, organization, analysis, and display of various information and data related to distributed tourism activities. Spatially, in a comprehensive and detailed manner, at the level of a tourist destination (site, region, country) or at the level of a specific tourist

activity (accommodation services, catering, entertainment activities...), relying on automated information software and devices. (Yeddou & Boukhari, 2015)

Based on this definition, the tourist information system consists of four main components:

4.1. Databases

It is a data set that includes all information related to tourism activity distributed geographically in the region, this data must be structured, organized and classified in a way that allows and facilitates access, management and updating. It includes all the elements that will serve the tourist or visitor during his stay, whether this relates to those that are concerned with providing services and goods directed exclusively to tourists (such as accommodation services centers or entertainment services) or those that provide public services such as health services and public security centers, and we distinguish here between two main types of data:

4.1.1. Spatial data

It means data that can be linked and projected onto geographical locations on the surface of the Earth through specific geographic coordinates, where geographical units are represented in three forms to distinguish between them.

4.1.2. Descriptive data

This is data which aims to describe geographical units and to give particular characteristics of tourist activity points, it can be quantitative data such as surface area and population or qualitative data such as address and telephone number, they also offer the possibility of attaching a descriptive image to this unit, only it must be emphasized that the spatial data and the descriptive data of the geographical unit are linked to an identification key.

In this context, we divide tourist units into three main groups:

A.   *Hospitality centers and accompanying services*

This group includes the institutions which provide services specifically aimed at tourists during their stay, it includes those which provide accommodation services, and units that provide catering services like restaurants and cafes. It also includes the units of transport service center (bus station, airport, ports…) and units that provide various services related to booking and organizing trips, and we can summarize as following:

- Accommodation services: Hotels, Holiday villages and tourist stays, Chalets and camping stations, Furnished tourist houses and guest houses…
- Food and beverage services: Restaurants and prepared food stores, Cafés, Rapid feeding and pizzeria, Ice cream and sweets shops…
- Transportation services: Bus and taxi station, Airport, port and marine station, Car rental agencies …
- Travel and tourism agencies: Reservation and accompanying services, tourism guide, Tourism directorates and offices…

B.   *Tourist attractions*

The elements of tourist attraction are among the most important factors that push people to travel and motivate them to go to a specific tourist destination. Although they represent a small part of tourism spending, they are considered the main nucleus within which all other components of tourism activity revolve (accommodation, feeding, transportation, etc.), and the most important of these elements can be mentioned as following (Goeldner & Brent, 2009):

- Natural attractions: Beaches, lakes and rivers, Mountains and forests, Parks and nature reserves, Thermal stations and recovery centers…
- Cultural activities: Historical and archaeological, architectural monuments, Museums and cultural centers, Cooking and folk arts…

- Leisure and entertainment activities: Zoos and amusement parcs, Shops and commercial centers, Cinema, theaters and art galleries, sports equipment stores…
- Celebration and holidays: International, national and local festivals, Trade fairs, National and religious celebrations, Local parties and weddings…
- Hiking, rest and wandering: Winter sports, Mountain sports…

C.   Public services

Although these services are mainly aimed at the local population, the tourist area must have an extensive network of public services, such as shops, banks and postal services, as well as public health services. It also depends on the ability of different countries to encourage tourism with the facilities they offer, the ability to advertise on various media in order to attract tourists, security, stability, price levels, good treatment and the ability to highlight the aspects that are important for tourists of all categories and groups (Moulay Lakhdar & Bourahli, 2016).

4.2. Automated media devices and computers

The geographically distribution of the large volume of spatial and descriptive data and information related to tourism activity units located in the tourist destination, requires automated information devices with high-performance specifications, which can be linked to various internal and external information networks, to collect and compile data, and they must also have a great ability to absorb and store this large-sized data which is constantly updated, and then process it and produce more information that is later output and displayed in a simplified and easy-to-use manner upon request.

Four main groups of these devices can be distinguished:

- **Input modules:** These are the media that allow the entry of information, commands, and instructions to interact with the computer, in this group, in addition to regular input units such as the keyboard and mouse, we need scanners and high-resolution digital cameras.
- **Backup and processing units:** These are the media that allow you to store, preserve and extract data files permanently or temporarily from hard drives and CD-ROMs, and we emphasize that it is necessary to adopt high-capacity storage media and processing media with fast response and large memory.
- **Display and output units:** they are the units through which data and information are extracted and displayed from the computer to users, such as screens, printers, and plotters, in this regard these units must also have high specifications, such as high-resolution display screens, and high-performance printers in terms of accuracy and speed and the ability to print on multi-dimensional media.
- **Drivers and Processing Software:** The volume of data in its various forms and types that a tourism information system processes requires many information programs and applications that allow this information to be entered, stored, processed, and output, so in addition to hardware operating systems, we need programs to manage and control databases, such as adding, modifying, deleting, and updating data, and performing various logical and arithmetic operations, as well as linking and analyzing various data, especially of a spatial nature, and then outputting and displaying it on various media in the form of maps, paths, tables and graphs that can be used in a simplified form in different usage environments.

4.3. Users

The effective functioning, use and exploitation of tourist information systems requires an integrated group of human cadres with various specializations, who are responsible for collecting various data and information related to the tourism activity, classifying and organizing them in this regard, this category of users must be fully informed about tourist planning techniques, which allow an accurate diagnosis of the resources and tourist potentials present in the region and the ways to exploit, develop and enhance them in the short, medium and long term

5. Tourist information system for Bordj Bou Arreridj state

We are going to try to design a digital website that can be a basic basis for building a tourist information system for the wilaya of Bordj Bou Arreridj, which could be a distinguished tourist destination compared to the tourism resources it possesses.

5.1. Presenting of the wilaya of Bordj Bou Arreridj

The wilaya of Bordj Bou Arreridj belongs to what is called the region of the Eastern High Plateaus where it occupies a strategic position because it represents the crossroads connecting the north and the south. It is located 230 km from Algiers and 200 km from the capital of eastern Algeria, Constantine. It is bordered to the north by the wilaya of Béjaia, to the east by the wilayade Sétif, to the west is the wilaya of Bouira and to the south, the wilaya of M'sila, it brings together 34 municipalities divided into ten (10) districts. It covers an area of 3,920.42 km2 and has an estimated population of approximately 702,934 inhabitants.

The wilaya is typified by a semi-arid continental climate characterized by very cold winters in which rain and snow fall in significant quantities, with the highest percentage of precipitation recorded (from 700 to 1000 mm) in the mountainous areas and highlands, while the other areas range between (300 and 600 mm), while the summer of Bordj Bou Arreridj is characterized by heat with temperatures exceeding 40 degrees.

On the other hand, the wilaya is distinguished in terms of topography, it is characterized by three types of surface and landforms, where we find the region of high plateaus bordered by the Biban Mountains to the west and the Maadid Mountains to the south, as well as the Thaniyat al-Nasr highlands and the Bordj Zemmoura to the west and north, we also find the mountainous areas of the Biban mountain range and the highlands of Borjd Zemmoura, al-Jaafra, and al-Main in the north, and finally, we find the steppe areas located in the southwestern part of the state, which is a pastoral area.

In terms of infrastructure, the wilaya has a diverse road structure, as the East-West Expressway passes through it over a distance of 90.0 km, and it includes a network estimated at 304.2 km of national roads, 297.5 km of departmental roads and 1,895 km of municipal roads. On the other hand, the railway line linking Algiers and Constantine, which is 103 km long, passes through it, as does the line linking the governorate chief town and M'Sila, which is 55 km long, although it does not have an airport, its distinguished location makes it close to the international airports of Algiers, Constantine and Setif.

5.2. The most important tourist resources in Bordj Bou Arreridj

The natural richness due to the change in landform in the region, provides wide spaces for visitors and tourists for the purpose of recreation and entertainment, as we find in the state of Bordj Bou Arreridj the Boumergued forest, which occupies an area of 400 hectares and is only four kilometers far from the wilaya chief town, the northern regions of the state are also full of mountainous areas with dense forests, containing Aleppo pine, green oak, and juniper trees, as well as olive and fig trees.

The wilaya of Bordj Bou Arreridj includes the "Ain Zada Dam" along National Road No. 5 between the regional borders of the states of Setif and Bordj Bou Arreridj, which occupies an area estimated at about 50 hectares, it contains a significant fish wealth and types of birds such as ducks, quail, and partridges, where many fishing enthusiasts flock to it, and families also resort to it to spend times of rest and relaxation.

We also note that the state of Bordj Bou Arreridj contains two thermal stations, we find the Hammam Al-Biban located along the East-West Highway, as well as National Road No. 5, which is distinguished by its hot water (63°C), whose water is used to treat skin diseases and joint diseases, and we find in the north (65 km north in the municipality of Al-Maine) Hammam Ibiban, which occupies a strategic location because it is close to the state borders with both the wilya of Setif and Bejaia.

The wilaya contains many historical monuments dating back to ancient times, such as those found in the city of Bordj El Ghadir, where the "Borj Chemissa" stands out, which is a Roman mausoleum dating back to the third century AD, or the stone pieces and engravings drawn with a chisel on the stones and the remains of mosaics, statues and stone columns in the city of Hamadia, in the same context we find the caves and murals of the village of

Samma in the municipality of Ben Daoud, southwest of the state (about 65 km from the wilaya chief town), which contains on its rocks a mural similar to the murals of Tassili, and its engravings indicate the Amazigh people who built it in ancient times.

We find olso in the chief town of the wilaya the historical landmark "Al-Maqrani Tower", which is considered as the most important tourist and historical landmark in the city, as it was founded in 1552 AD by the Ottoman commander Hassan Pasha bin Khair Al-Din for his military garrison, it was rebuilt during the French occupation and then restored in 2008 to become a historical museum and a cultural center to organize many art exhibitions.

In the municipality of Tassamert, 35 km northeast of the chief town of the wilaya, we find the village of Al-Qalaa, which was built in the fifth century AH in the shape of a star (if viewed from above), and which is characterized by an architectural style similar to that of ancient Arab cities, where the village houses are characterized by balconies resting on wooden columns, and are built with blue stones and traditional red tiles held together by wooden columns; it also contains a well-known Zaouya for memorising the Qur'an and teaching Sharia sciences.

5.3. System conception

For the good functioning of our information system, and to facilitate its use in terms of entry, exploitation and updating data, we have considered designing our platform in three interfaces for each type of user; and this as follows:
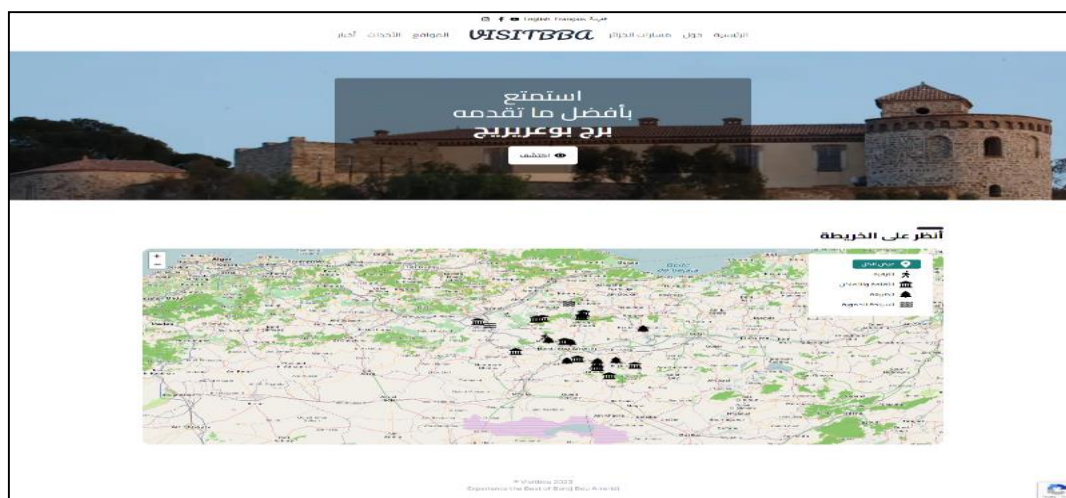
5.3.1. User interface

In order to display various information about tourist sites, a website has been prepared for this purpose www.visitbba.online which contains the following elements as it shows this figure:

FBER

117

Fig. 2. Designed system interface page
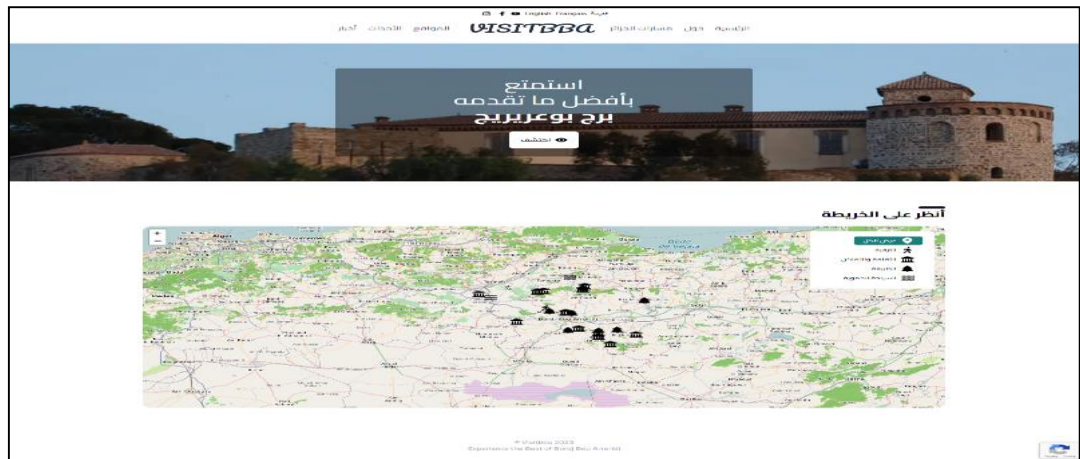

Source : www.visitbba.online

- The taskbar clearly displays the name of the site, as well as the various links related to the pages that display information about tourist sites such cultural and entertainment events, it also includes a bar to change the language of the site (Arabic, French and English) and links to access the site page on social media platforms such as Facebook, Instagram and YouTube, there are also a link to access the page of the wilaya in the web site "ALGERIA TOURS", and the "About" link linked to contacts and general information about the site, and this bar remains pinned when viewing any page of the system.
- A rectangular image of the monument "Bordj Al-Maqrani", which contains a welcome phrase for visitors to the site, as well as a "Discover" link, which provides access to a page containing all the tourist sites listed on the site and classified according to their

nature, where each site was presented with its own photo, the name of the site, as well as a simplified description of it and the municipality in which it is located, where its page can be accessed by clicking on the image.

• Google.map was used to include an interactive map of the state, which contains links in the form of icons to all tourist sites divided according to their nature, where the user can block and show sites on the map according to the nature and type of the desired tourist sites. In this context, the user can place the mouse cursor on any element on the map to show it as small photo which represent a link to the page identifying that site.

Fig. 3. Designed system interface page

Source: www.visitbba.online

5.3.2. The tourist site page

This can be accessed, as we mentioned previously, through the interactive map or through the "Discover" page. Here, the focus was on showing the distinctive elements of the tourist site through:

• The site name is large and bold.
• Quality of tourism resource.
• The municipality in which the site is located.

• A descriptive paragraph of the tourist site, through which we try to highlight its most important aesthetic features, which can give the user a first look at what can be benefited from in the field of entertainment and recreation.

• A photo gallery for the site, where any image that is clicked is enlarged, with the ability to switch from one image to another in the image bar based on the arrows.

• An interactive map showing the location of the site.

Fig. 4. Information display page for a tourist site
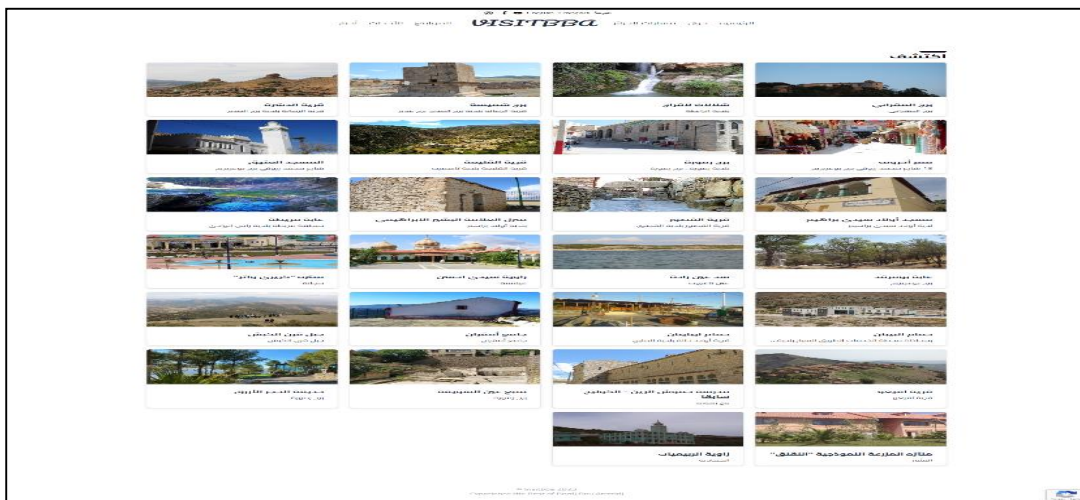
Source: www.visitbba.online/show/41

5.3.3. Index of tourist sites

A page entitled "Discover" has been allocated that includes all the tourist sites and related centers listed in the system through a picture of the tourist facility bearing its name and a general description, which can be clicked to access the facility's page in the system, noting in this regard that a method can be chosen. It is presented according to its nature (natural, cultural, historical...), or according to the type of tourism activity associated with it (sites, demonstrations, shopping...) or according to its location and geographical distribution across the municipalities of the state.

Fig. 5. The page for the index of tourist sites and centers of tourist interest

Source: www.visitbba.online/show

5.3.4. System management interface

When preparing the system, care was taken to separate the design and construction process, which is considered a purely technical process that requires control over programming techniques in automated media and image and data processing on the one hand, and the process of including information about tourist sites and related places on the other hand, so a platform was prepared. It is accessed using special accounts (user name and password) that are created for the benefit of those charged with including this information in the three languages supported by the site, including the satellite coordinates of the tourist site, not to mention the site's collection of images, including the image intended for display on its page destination. With the option to publish this information directly or the ability to save the information in the system's memory for later publication, with the possibility of deleting, blocking, or updating every item that was included in the system.

Fig. 6. System administration interface page
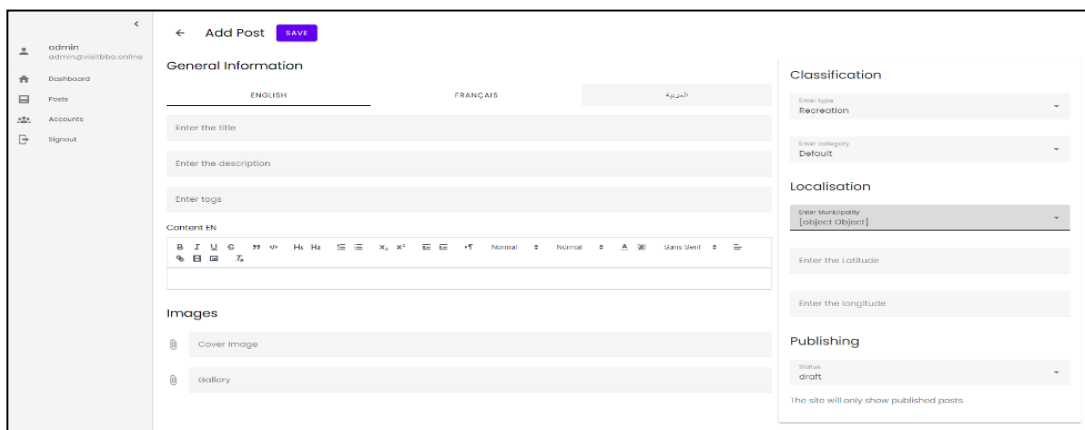
Source: https://user.visitbba.online

When the option of publishing the information included within the system is approved, the following operations are carried out automatically, as follows:

• Automatically process inserted images by applying an image filter improves the quality of the image and increases its accuracy by changing its dimensions to suit the place designated for display (the interface image and the group of other images).

• Add a link to the tourist site in the interactive map on the home page to display the system in the form of an icon that has been prepared and whose shape has been chosen according to the quality and nature of the tourist site.

• Add a link to the tourism facility's page on the "Discover" page.

• Create the page for the tourist facility and automatically include it in the system so that it is viewable and usable.

5.4. Uses and prospects for using the system

This digital space represents an effective tool for the managing tourism activity in the wilaya, as it will allow achieving the following goals:

• Displaying the various tourism resources present in the wilaya and providing all the information that the tourist needs during his stay, wherever it allows to have a prior taste of the services available through the multimedia that can be used (high-resolution images, panoramic images, videos, Digital signage...).

• The way this system was designed, especially the process of separating between the designer and the user tasks, which would create flexibility in using this system by enriching and updating the content of this information in a simple and effective way, with the possibility of expanding its uses outside the activity.

• The system can be developed and transformed into an e-commerce platform for tourism and related activities, as it can be linked to institutions active in this field and allow them to display their products and allow various electronic ordering and payment operations to be carried out with complete safety and reliability, which will allow building a database of customers and clients and giving them the opportunity to benefit from special offers, discounts and rewards for loyal ones to expand their sales force and increase their share.

• This system can become a real database for local authorities. In addition to being a dynamic map for the distribution of tourism resources and various economic activities that allow the exploitation of these resources, it represents a basis for preparing programs to increase tourism supply capabilities, including preparing and infrastructure (constructing roads, bridges and crossings, connecting to energy networks...) in the areas concerned with tourism expansion, in coordination with the elected councils and local community institutions which will improve the economic and social conditions of local people.

6. Conclusion

• The special nature of tourism activity makes the availability of tourism information a pivotal matter for the various stakeholders in the tourism market, including public authorities, producers and consumers;

 • The spread of the use of digital media and communication, especially those connected to the Internet, has made it possible to benefit from them in various areas of tourism activities, from presenting and organizing tourism services and an opportunity for creativity and innovation;

• Tourism information systems represent an effective tool that allows the collection, storage, organization, analysis and presentation of various information and data related to tourism activities in tourist destination or at the level of a specific tourism activity;

• Through this research, we tried to prepare a website that represents a basic basis for building a tourism information system in the wilaya of Bordj Bou Arreridj, as it can be an effective tool in the field of activating and managing tourism activity in the state, due to the information it can provide about tourism activity in the region;

• Developing this website to become an information system requires a real will from the local authorities that can mobilize material and human resources interests to provide the website with various data related to tourism activity and related activities and pour them into a single mold.

7. Références

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