

Digital platform to enhance sports tourism in Songkhla province of Thailand

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Abstract: Digital platforms are innovative tools that effectively enhance sports tourism. The objectives are: 1) to design a digital platform for sports tourism, 2) to develop a web application using Songkhla Province as a case study, and 3) to evaluate the system's efficiency based on expert and tourist feedback. The development process was guided by the conceptual framework of the Agile SDLC Model, incorporating the Laravel Framework, Bootstrap CSS Framework, Google Maps API, and a CMS-based back-end system. The MySQL database was managed via phpMyAdmin, with chatbot integration through Facebook Messenger. Data from Songkhla's sports tourism agencies formed three categories: Sports Database, Tourism Database, and Facility Database, supported by a back-end system for updating 15 database menus. System efficiency was evaluated by 13 professionals, including digital system experts and tourism professionals, resulting in an average satisfaction score of 4.18 (SD = 0.58), indicating very satisfactory performance. Additionally, 396 sports tourists assessed the system, with an average satisfaction score of 3.92 (SD = 0.40), also indicating high satisfaction. The study demonstrates that developing a digital platform enhances Songkhla Province's ability to communicate with domestic and international tourists. It supports the promotion of border tourism and adds significant value to the tourism industry. In conclusion, the digital platform provides a modern communication channel for tourists, contributing to Songkhla's development as a sports city and highlighting the potential of digital solutions to boost the tourism sector.

Keywords: Digital Platform, Sports City, Sports Tourism, Tourism, Web Application.

1. Introduction

Sports tourism involves the development of a tourism industry that can generate income for tourist destinations by incorporating engaging sports activities. Additionally, sports contribute to the development of individuals' potential and have a broad societal impact. Therefore, sports tourism serves as an effective channel for communication and cultural development. According to global travel trends tracked by ThaiPR.net [1] sports tourism had the highest growth rate. Many countries are promoting tourism by integrating sports with tourism, transforming it into a creative tourism activity or product that caters to tourists who either watch or participate in sporting events. Panpayak and Singkram [2] discovered that the sports tourism behavior of tourists in sports cities contributes to the development of integrated sports tourism. This can also create added value and boost the national economy in the realm of sports tourism. As a result, many provinces aspire to become integrated sports tourism cities. Sports tourism behavior encompasses deciding on sports tourism, assessing travel demand for sports tourism, planning for sports, preparing to travel for sports tourism, setting goals for sports tourism, gauging feelings about the situation in the country of the sports tourism destination, and selecting activities in sports tourism.

Tourists in the new era, along with modern tourism service providers [3] have emphasized the application of digital technology to serve tourists. There is a need to adapt to keep pace with technological changes. Digital platforms are used to facilitate data-driven decision-making, data searching, tourist travel, and various related transactions. They also aid in creating digital content such as Augmented Reality (AR) and Virtual Reality (VR) to provide a good and exciting experience, introducing new forms of tourism. Applications through web applications and digital platforms are designed to support the needs of tourists of all ages across all technology platforms. In addition to using online media for information gathering, travelers are increasingly likely to book accommodations or make purchases using their mobile devices, such as smartphones and tablets, more than ever before. This is because smartphones and internet signals have become cheaper, and Wi-Fi networks now cover almost every location. This allows tourists to engage in various activities through their smartphones or tablets.

Sports tourism presents a significant opportunity for tourism in the Southern border provinces [4] which boast beautiful tourist attractions in terms of nature, traditions, religion, culture, and border trade. The integration of sports tourism into the promotion of tourism in the area adds value and creates a positive image for the southern border region. It stimulates the economy and income in the area, benefiting society, individuals, and youth, and fostering unity and reconciliation. This aligns with the plan to address issues and develop the southern border provinces. Songkhla Province, the tourism hub of the lower southern region, has a rich history. It offers a variety of tourist attractions, including natural sites, historical landmarks, ancient sites, antiques, and local products that greatly appeal to tourists.

Moreover, Songkhla Province, which borders Malaysia, has convenient transportation routes [5]. As a result, many Malaysian and Singaporean tourists visit Songkhla Province. In addition, Songkhla Province is also a city known for sports tourism, with provincial administrators actively supporting sports tourism in various forms. Numerous sports are organized for tourism purposes [6]. Furthermore, Songkhla Province was selected by the Southeast Asian Sports Federation (SEAGF) on January 13, 2023, to co-host the 2025 SEA Games or the 33rd SEA Games, named Bangkok-Chonburi-Songkhla 2025. This event, which will be held from December 9 to 20, 2025, will feature various international sports competitions [7]. Due to the growth in sports tourism, Songkhla Province has a development plan in various areas to support the management of sports tourism in the province. This includes promoting channels to access information on tourist attractions both domestically and abroad. However, interviews with sports and recreation promotion officials and organizers of special sports activities revealed that there is still a lack of preparation in terms of a digital database that integrates sports tourism and a data management platform for Songkhla Province.

A digital platform is a medium that allows many people, including content and service owners as well as data receivers or customers, to communicate and exchange various information. This is facilitated by a digital infrastructure that enables contact and interaction among many parties. A digital platform, similar to an online platform, aggregates a large amount of information, products, and services. It allows information providers, information recipients, buyers, and sellers to connect through various applications. The platform owner is responsible for facilitating these interactions and ensuring safety as much as possible [8]. An application is a program that facilitates the dissemination of information or receives various information. It is designed for use through smartphones, tablets, desktop computers, or notebooks, which are referred to as mobile applications [9] or web applications. The program can be installed on a mobile device or stored on a web server to provide services when there is a request for service from a client or user. It will display the results of the request in the form of HTML documents via a web browser [10]. Nowadays, web applications are very popular because they operate in the form of a client/server. The program is installed on the host computer, and users can run the application through a web browser. Currently, web applications that respond to various screen sizes, or responsive designs, are being developed to support display on various screen sizes, including

smartphones, tablets, and desktop computers or notebooks. The display will automatically adjust to the size of the screen appropriately to display the complete results, making it convenient for users.

For the reasons mentioned above, the research team planned to “develop a digital platform to enhance sports tourism: a case study of Songkhla Province”. The aim was to create a digital platform that serves as a channel for transmitting various types of information from providers to recipients. This would be achieved through a web application displayed via a web browser installed on a communication device. The platform would be responsive, and capable of adapting to various screen sizes, to elevate the standard of sports tourism in Songkhla Province. This province is well-prepared and distinguished as a city for sports tourism. The scope of the research study covered 1) Sports databases, encompassing sports activities, facilities, health, sports personnel, and summaries of competition results for sports organizations, 2) Tourism databases, including tourist attractions, hotels, restaurants, souvenir shops, and public transportation stations, and 3) Facility databases, such as emergency contact channels, discussion boards, and chat boards. The platform would feature a modern website content management system (CMS) using the Laravel Framework for both the front end and back end. The objectives of the research were: 1) To study the process of developing a digital platform to enhance sports tourism, and 2) To design and develop a digital platform to enhance sports tourism.

2. Related Theories and Research

2.1. Concepts of Sports Tourism

Sports tourism refers to a type of tourism that is motivated by the desire to participate in sports competitions, with an emphasis on exercise, health promotion, attending favorite sporting events, or visiting the birthplace of sports [11]. Sports tourism encompasses three types of activities:

2.1.1. Sports Participation Travel

This involves a tourist trip to exercise by participating in sports and/or recreational activities for health, such as running a marathon, playing golf, bicycling, canoeing, etc.

2.1.2. Sports Spectatorial Travel

This involves traveling to watch and cheer on a favorite sporting event, which could be either a professional or amateur sports competition such as boxing, football, car racing, tennis, volleyball, Olympic sports, etc.

2.1.3. Birthplace Sports Travel

This involves traveling to the place where a sport originated or joining a sports training camp with famous athletes, such as Muay Thai, which is world-famous and unique to each locality.

Sports tourism emphasizes the quality of management, defining the elements that are key to success in the sports tourism market to meet the needs of today’s travelers. Sports tourism also highlights health, recreation, exercise, beauty, and the utilization of free time [12]. The quality of Sports Tourism, which influences the satisfaction level of tourists, includes 1) Access to destinations such as sports venues, hotels, restaurants, tourist attractions, souvenir shops, and assistance contacts. 2) Quality of related locations, including the environment, communication for assistance, and pricing. Moreover, a sports tourism quality model will facilitate research about the dynamics of sports tourism, aiming to provide the best experience to sports tourists [13]. This ensures reuse and a new integrated model for sports tourism will be created using a paradigm model and data collection techniques [14]. The following conclusions can be drawn: 1) Sports serve as an investment in the tourism industry. 2) This sector stimulates economic growth through hotels, restaurants, establishments, and shops. 3) It enhances a positive image for the community. 4) It has the potential to create tourism products and new tourism destinations. 5) It increases opportunities for places in the community to be used to their full potential. 6) It fosters relationships in the community and promotes the creation of a network of supporting organizations. 7) It creates opportunities and entertainment for youth groups. 8) It attracts

high-potential tourists, especially repeat tourists. 9) It fosters a positive image, making it an attractive destination. 10) It provides an opportunity to develop community infrastructure. 11) It contributes to a higher growth rate in tourism. 12) It improves the capacity of organizations or communities that organize activities in terms of marketing. 13) It generates revenues from tourism that can be used to provide more sports activity facilities. 14) It increases the power of support from communities in sports activities.

Sports tourism has grown significantly and has become a highlight of the concept of organizing sports activities together with tourism activities in various areas. The definition of sports tourism depends on the dimensions of the activities taking place. It has a social perspective focusing on presenting features of existing sports and tourist attractions [15].

2.2. Concepts of Digital Platforms

A digital platform is a new form of online media that uses the communication technology of the Internet to participate in changing the presentation format. The goal is to increase interest in information, products, or services. The platform is interactive as it enables interaction between the information provider and the news recipient or customers. The information can be presented through a variety of devices, such as smartphones, tablets, desktop computers, notebooks, etc. The architectural model of a digital platform consists of 5 elements: (1) Application platforms, (2) Process platforms, (3) Analytic & cognitive platforms, (4) Integration & development platforms, and (5) Internet of Things platforms [16]. The digital platform supports online transactions and facilitates interactions between customers and business owners. According to data from the Kasikorn Research Center, the E-Commerce market value in 2023 might expand to approximately 600 billion baht [17].

2.2.1. A Web Application

Web application is a software or computer program developed according to the principles of information system development and operates on web browsers. The program is installed on a server to provide services upon request from the client. It operates online both locally (within the agency) and globally (over the Internet), making it suitable for tasks that require real-time information. By using a web application through an Internet browser, the program can interact with users in real time, making it impressive and easy to use. There is no need to install or upgrade a client program [18]. The tools used in web application development consist of 1) Programming languages such as PHP, HTML, ASP, and JavaScript, etc., 2) Ready-made content management frameworks and CSS (Cascading Style Sheets), such as the Bootstrap CSS Framework, 3) Ready-made development tools, such as the Laravel Framework, which are tools for developing and storing data in the form of a database relationship, and Visual Studio Code, which is a tool used to develop, customize, and edit programs, which are compact and open-source tools, and 4) Relational database management systems such as MySQL, which use the SQL language [19].

2.2.2. The Software Development Process

The Software Development Process is a guideline for developing applications with clear steps that cover all dimensions and change the concept of developing modern applications [20]. This process places importance on the success of the work system, such as using the Agile Model, which is considered more useful than traditional systems as it meets the need for flexibility in the work system, the requirements of system developers, and customer needs. Agile methodology provides the ability to accelerate the pace of work and adapt to wants and needs, as shown in Table 1, which compares the Agile methodology and traditional methodology [21].

Table 1.
Comparison between Agile and traditional methodologies.

Criteria	Agile methodology	Traditional methodology
Approach	<ul style="list-style-type: none"> • Involves long-term project planning and progress monitoring. • Includes all of the system's functions, each team member's responsibilities, the project's cost, and timeline. • Serves as the framework for building the system. • Predicts the project based on previous, successful projects. 	<ul style="list-style-type: none"> • Is primarily used for computer system development. • Involves developing every step of the process. • Operates on the belief that changing requirements is the best way to create a product. • The ultimate goal is to create a product that will satisfy customers.
Documentation and planning	<ul style="list-style-type: none"> • Key to development: Documentation • Appropriate documentation • Contains: Data for coding • Includes: Customer requirements • Covers: System requirements • Comprehensive information source 	<ul style="list-style-type: none"> • Emphasis on planning • Planning: Not all at once • Strategy: Prepared data • Benefit: Quick decision changes during development
Orientation	<ul style="list-style-type: none"> • Specific procedures for tasks and defined responsibilities • Roles: Managers, developers, analysts, testers • Process: Describes responsibilities 	<ul style="list-style-type: none"> • Workforce is most important: Talented and highly skilled • Roles: Supervisors, developers, designers, testers • Belief: Individual success leads to successful implementation

2.2.3. Agile Development Method

The agile method represents a team management approach and a framework that facilitates continuous and incremental progress on work priorities [22]. Originating from the agile processes in software development, particularly Scrum, this methodology centers around adaptability to change as a means to enhance project success [23]. In most agile approaches, project risks are mitigated through iterative cycles lasting one to four weeks. Each iteration functions as a mini-project within the larger scope, encompassing essential tasks such as planning, requirements analysis, design, coding, testing, and documentation. The primary goal of the agile method is to release new software at the end of each iteration, with the team reevaluating priorities between cycles. Over recent years, the agile method has gained prominence in the software development domain [24] and has expanded into other fields. Development teams now apply agile principles—such as adaptability, personal and group autonomy, modularity, and self-organized collaboration—continuously and incrementally to enhance programming processes [25]. The agile method emerged as a response to the strengths and weaknesses of popular software production methodologies, including the waterfall method, which lacked responsiveness to change [26]. As a management framework, agile emphasizes teamwork, social software development, and effective connections among programmers and other participants within self-organized, cross-functional teams [27, 28].

The agile development method is a working concept. It is not limited to being used for software development only. Agile places importance on communication with all involved parties, product development, and improvements to respond to users. The principles of Scrum can be incorporated to enhance the clarity and comprehensiveness of Agile steps. The agile development method is scalable, sustainable, and user-centered with a six-step process as introduced in Figure 1. [29].

Six steps Agile Development Method



Figure 1.
Six-step agile development method.

Steps 1-3 establish the conceptual business case requirements, while steps 4-6 pertain to process design and the iterative implementation of increasing detail [30]. The **Agile Manifesto** emphasizes the following principles: 1) individuals and interactions over processes and tools; 2) working software over comprehensive documentation; 3) customer collaboration over contract negotiation; and 4) responding to change over following a plan. Additionally, the Agile development method follows a six-step system development process, which includes: 1) identify case analysis, 2) identify key user, 3) target group analysis, 4) modelling process, 5) pilot platform, and 6) implement and optimization.

2.2.4. Web Application Development Concepts Using MVC Framework Principles

The Model-View-Controller (MVC) pattern is a widely used software development model across various programming languages and platforms. It provides a structured approach to building applications. MVC has three components: Model (M): This segment handles data collection and storage. Data resides in various formats within the database, often represented as an Object Class (commonly known as a Value Object or VO). When data is loaded from diverse sources, the model organizes it into an appropriate format and awaits data requests from the Controller. View (V): The view is responsible for the user interface—the part that interacts directly with users. When the View receives commands from either the user or the Controller, it displays the desired results on various pages, such as the Home page. Controller (C): Acting as an intermediary between the Model and View, the Controller efficiently coordinates their interactions. It responds to user commands received via the View, processes them, and communicates with the Model. The Controller then presents the processing results back to the View, aligning with the user's requests.

3. Research Method

A digital platform to enhance sports tourism, a case study of Songkhla Province, was developed using the Agile SDLC Model (System Development Life Cycle). The development process involved the following steps: 1. Collect and analyze user requirements; 2. Design the program; 3. Code the program; 4. Deploy and test the system; and 5. Operate and Maintain the System. This process is illustrated in Figure 2.

3.1. Collect and Analyze User Requirements

To develop a digital platform aimed at enhancing sports tourism in Songkhla Province, we initiated a process of gathering users' needs. We convened a meeting involving various related agencies: 1. Songkhla Provincial Tourism and Sports Office, 2. Songkhla Provincial Sports Authority Office, 3. Songkhla Provincial Sports Association, and 4. Songkhla Provincial Administrative Organization. During this brainstorming session, we collected valuable data regarding system requirements. Subsequently, we analyzed and categorized this information into three main groups: 1. Sports Database: This category encompasses sports activities, sports and health facilities, sports personnel, summaries of competition results, the sports industry, athletes' hall of fame, and sports organizations. 2. Tourism Database: Here, we include details about tourist attractions, hotels, restaurants, souvenir shops, and public transportation stations. 3. Facility Database: This section covers emergency contact channels, discussion boards, and chat functionality.

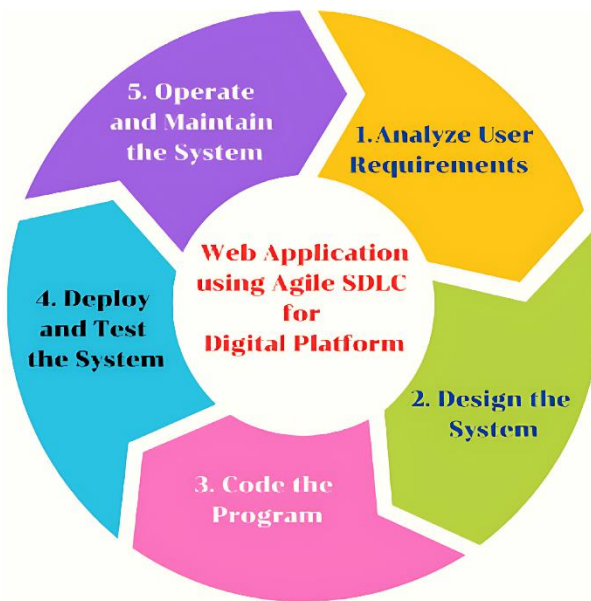


Figure 2. Agile SDLC Model system development cycle.

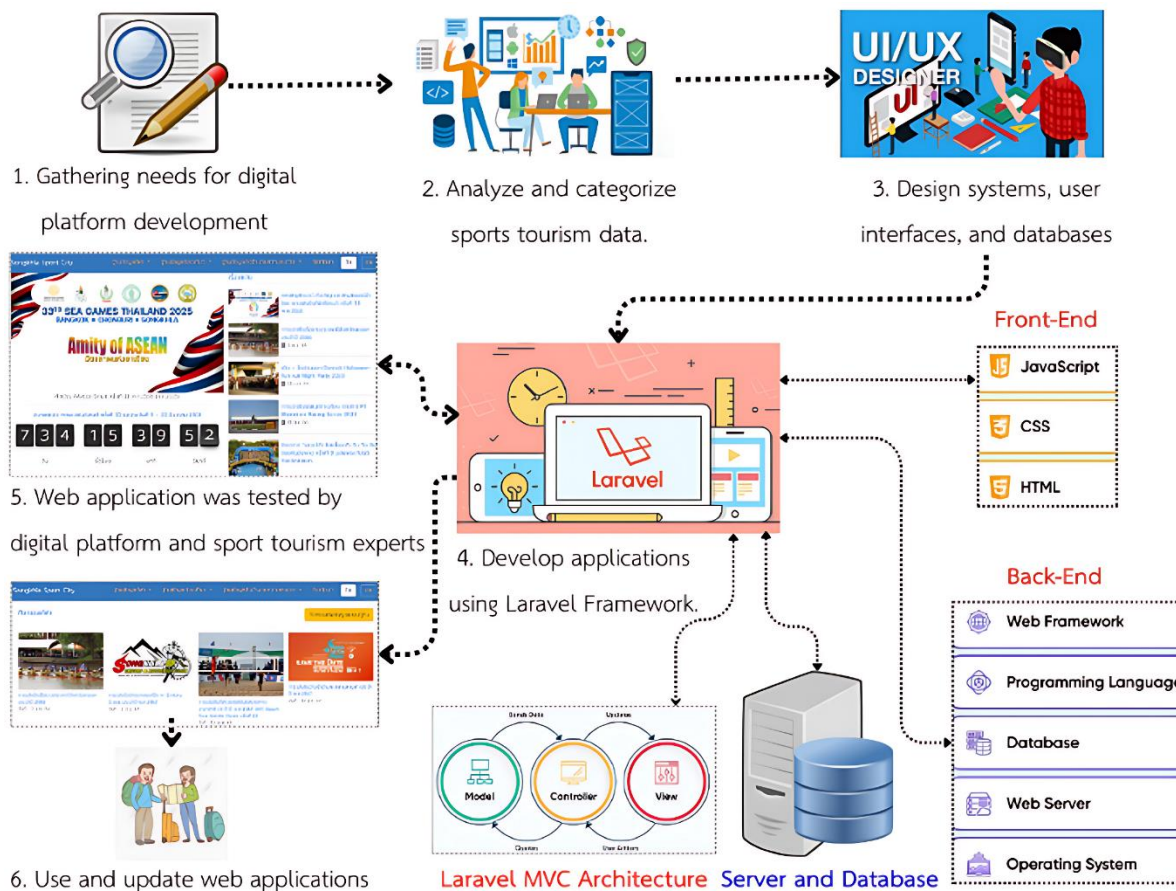


Figure 3. The conceptual framework for developing a digital platform to enhance sports tourism.

3.2. Design the Program

Building upon the concept of developing a digital platform to enhance sports tourism (as depicted in Figure 3), we meticulously designed a web application system. This system comprises 13 back-end functions and 4 front-end functions. 1. Sports Database: 1.1 Sports Activities, 1.2 Sports and Health Facilities, 1.3 Sports Personnel, 1.4 Summaries of Competition Results, 1.5 Sports Industry, 1.6 Sports Press Releases, 1.7 Sports Hall of Fame, and 1.8 Sports Organizations. 2. Tourism Database: 2.1 Tourist Attractions, 2.2 Hotels, 2.3 Restaurants, 2.4 Souvenir Shops, and 2.5 Public Transport Stations. 3. Facility Database: 3.1 Emergency Contact Channels, 3.2 Discussion Board, 3.3 Chat with Us, and 3.4 Contact Us.

3.3. Code the Program

We created an application with a responsive web design, ensuring it adapts seamlessly to various devices and screen sizes. The web application was developed using the following tools:

3.3.1. Laravel Framework

This widely-used PHP Framework offers the advantages of the MVC (Model-View-Controller) architecture. It simplifies programming and program editing while maintaining robust cybersecurity measures for system stability. We also used CSS (Cascading Style Sheets), a language used to craft visually appealing display formats, and we utilized the power of the Bootstrap CSS Framework to create beautiful and consistent user interfaces.

3.3.2. Google Map API (Application Programming Interface)

Google's API set is designed for developing web and mobile applications that can be utilized on both Android and iOS operating systems. The Google Map API retrieves latitude and longitude information from the database and displays the results on the map through a set of services and various features.

3.3.3. CMS (Content Management System)

A back-end system for managing website content, CMS facilitates tasks such as adding, deleting, and editing information. Developed using PHP and SQL, it allows real-time data updates through a template called Admin LTE.

3.3.4. Identity Verification System (Authentication)

This method verifies users accessing or managing the back-end system in the web application. The system checks usernames and passwords, utilizing the Eloquent ORM of the Laravel Framework, which connects to the MySQL database.

3.3.5. Calendar Display

Utilizing the Full Calendar tool, this feature showcases various activities in a calendar format. It interfaces with the database to retrieve activity data, presenting it by day, month, and year.

3.3.6. Banner Slideshow for Important News Images

The Carousel Bootstrap tool contacts the database and displays several images in a slideshow format. The timing for image changes can be configured.

3.3.7. MySQL Database

This database stores diverse data, including videos, still images, text, numbers, latitude, and longitude. It is managed through a tool called phpMyAdmin.

3.3.8. Chatbot

A computer program or artificial intelligence designed for real-time text-based conversations between users and administrators. Similar to interactions with a human, this chatbot is embedded in the server application.

In Figure 4: DFD L0, the Level 0 Data Flow Diagram (DFD) illustrates a digital platform system designed to enhance sports tourism. Users include tourists, athletes, sports enthusiasts, and interested individuals who access the system by visiting the website <https://songkhlaspportcity.com/>. The system offers three main functions: 1) Language Selection: Users can choose between two languages: 1.1 Thai language and 1.2 English language. 2) Required Information: The system provides the following databases: 2.1 Sports Database, 2.2 Tourism Database, 2.3 Facility Database, 2.4 Contact Us, and 3) Communication via chatbot.

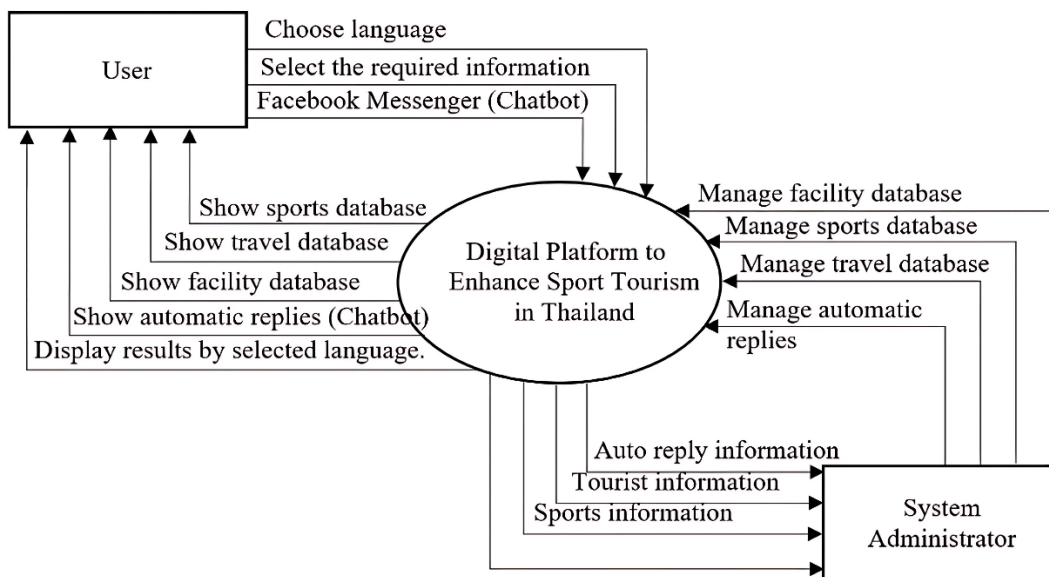


Figure 4. Context diagram / Data flow diagram level 0.

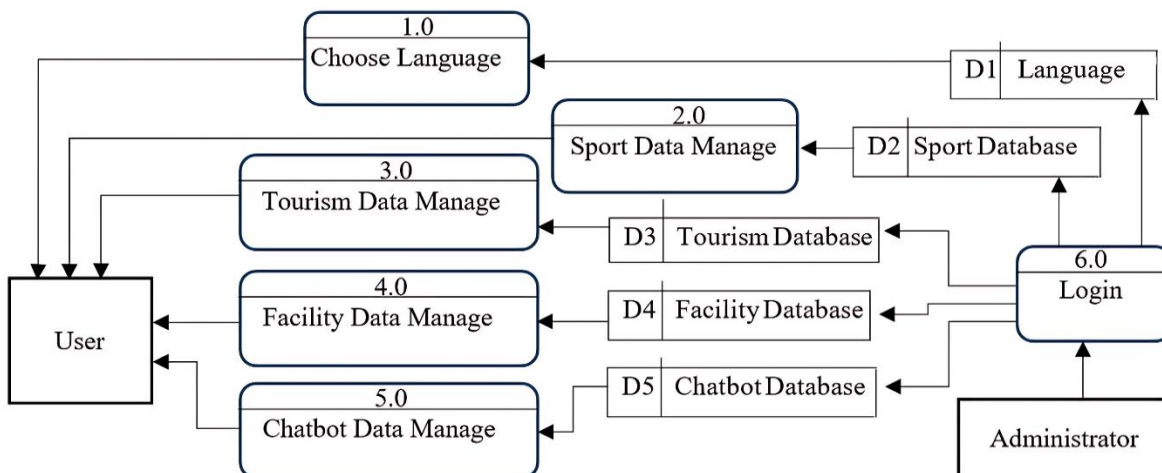


Figure 5. Data flow diagram level 1.

Figure 5 comprises 2 Entities: User and Administrator with 5 processes as follows: 1. Choose Language 2. Sports Data Management, 3. Tourism Data Management, 4. Facility Data Management, and 5. Chatbot Data Management. There are 5 database tables: 1. Language Database 2. Sports Database 3. Tourism Database 4. Facility Database, and 5. Chatbot Database.

3.4. Deploy and Test the System

After developing the web application based on the database design and creating the user interface, we tested its functionality. The system underwent evaluation by various stakeholders, divided into three groups:

3.4.1. Digital Platform Experts

Responsible for testing various aspects, including Connection system functionality, Interaction with the Sports database, Travel database, and Facility database, Activity calendar management, Image management, Detailed data handling, Coordinate management (latitude and longitude), Discussion board integration with Facebook, Chat management linked with Messenger, User-friendliness of both Front End and Back End systems, Support for multiple screen sizes (Responsive).

3.4.2. Three Tourism Experts

Focused on assessing the suitability, accuracy, completeness, up-to-dateness, and reliability of content for its intended use. Evaluated content ordering and sorting. Ensured appropriateness of language consistent with the target audience.

3.4.3. Seven System Administrators

Admins from Sports Tourism Relevant Agencies in Songkhla Province: Tested the appropriateness of information dissemination based on the needs of sports tourists; assessed the system's user-friendliness (both Front End and Back End); and verified suitability for multiple screen sizes (Responsive).

The system evaluation results from all three expert groups are summarized in Table 1.

3.5. Operate and Maintain the System

We have improved and modified both the web application system and the Digital platform system to enhance sports tourism. This case study focuses on Songkhla Province and follows the recommendations of three groups of experts:

- Adding Comprehensive Information: We have included complete details for both the main menu and submenus, and introduced color to enhance the web application.
- Ensuring Compatibility: We checked the functionality of the website to ensure compatibility across different browsers and support for a variety of devices.
- Menu Name Consistency: We adjusted the menu names to align with the content, and incorporated images that correspond to the actual locations.
- Real-Time Communication Channels: We implemented open communication channels, including chatbots, to address user queries in real-time.

Bilingual Website Display: We made the website available in two languages: Thai and English

4. Results and Discussion

The results from web application development in a digital platform system to enhance sports tourism, as a case study of Songkhla Province, <https://www.songkhlasportcity.com> are as follows: Logging in and User Interface: When general users log into the system, they will encounter a screen displaying the main menu, sub-menu, and top news on the home page. Both Thai and English versions

include main menus, sub-menus, and top news. Main Menu: The main menu cover various aspects: 1. Sports Database: This section showcases 1.1 sports activities, presented in the form of a calendar and news photos (as depicted in Figure 4). 1.2 Sports and Health Facilities encompass 11 types, including stadiums, gyms/fitness centers, golf courses, public parks, racetracks, shooting ranges, petanque courts, Takraw courts, basketball courts, tennis courts, and futsal courts. 1.3 Sports Personnel comprising two categories—coaches and judges. 1.4 Competition Result Summaries: These summaries span four types: National Sports, National Youth Sports, National Sports for the Disabled, and National Senior Sports. 1.5 Sports Industry focusing on Mueang District and Hat Yai District. 1.6 Sports Press Releases on sports activities held in Songkhla Province. 1.7 Sports Hall of Fame honoring notable athletes. 1.8 Sports Organizations including the Department of Physical Education (via the Songkhla Provincial Tourism and Sports Office), the Sports Authority of Thailand (via the Sports Authority of Thailand Office), Songkhla Province, Songkhla Provincial Sports Association, and local government organizations. 2. Tourism Database (Mueang District and Hat Yai District): This section encompasses 2.1 Tourist Attractions. 2.2 Hotels. 2.3 Restaurants. 2.4 Souvenir Shops. 2.5 Public Transportation Stations. 3. Facility Database (Mueang District and Hat Yai District): includes the following: 3.1 Emergency Contact Channels. 3.2 Discussion Board. 3.3 Chat with Us. 4. **Contact Us**. All these components are accessible via the browser interface, as illustrated in Figure 6. Once users enter the web application, they can explore various submenus, as depicted in Figure 7.

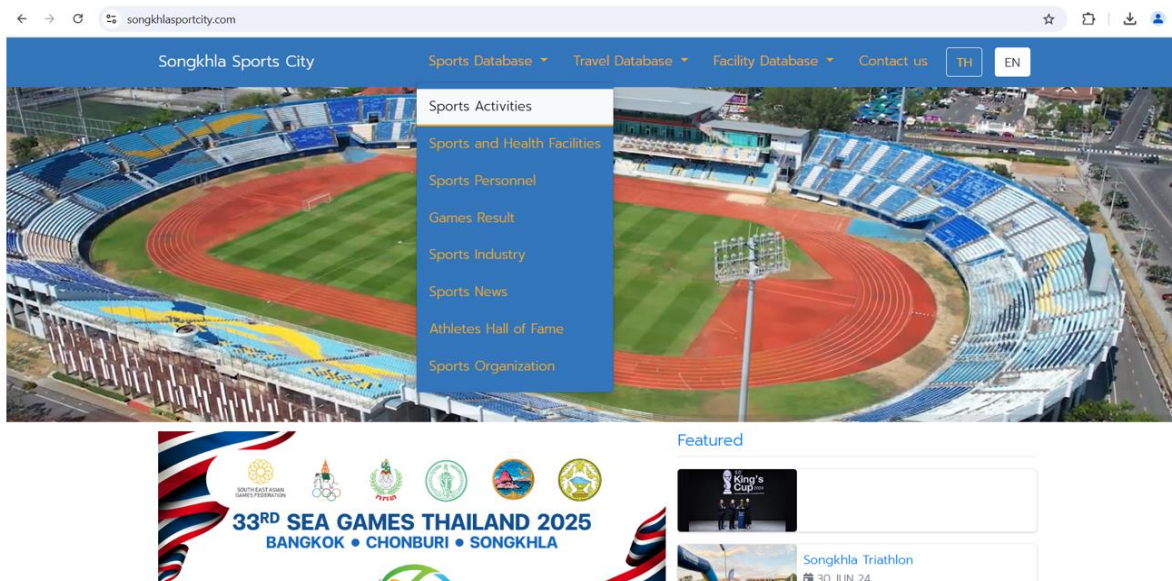


Figure 6.
The home page, main menus, submenus, and top news.

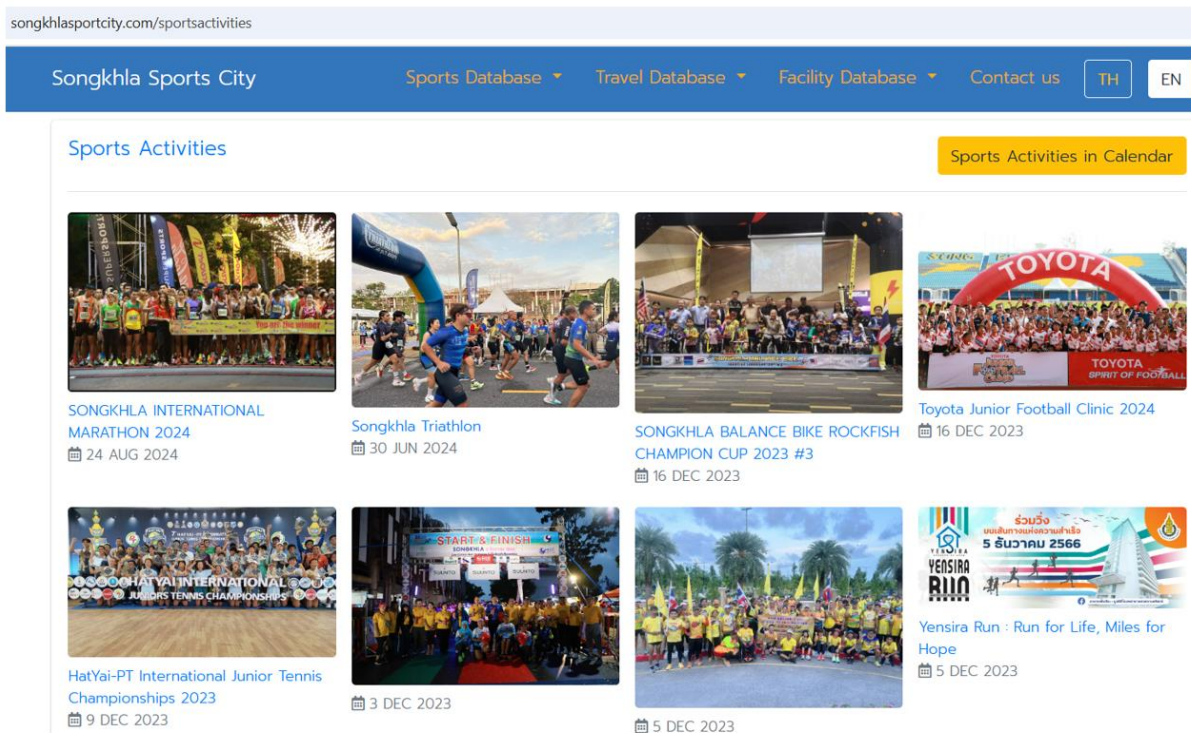


Figure 7.
Sports activities in Songkhla Province.

The web application development within a digital platform system, aimed at enhancing sports tourism—a case study of Songkhla Province—has been designed to be compatible with a wide range of platforms. It seamlessly operates on all computer web browsers and functions across every smartphone operating system, as illustrated in Figures 8 to 10.



Figure 8.
Home page.

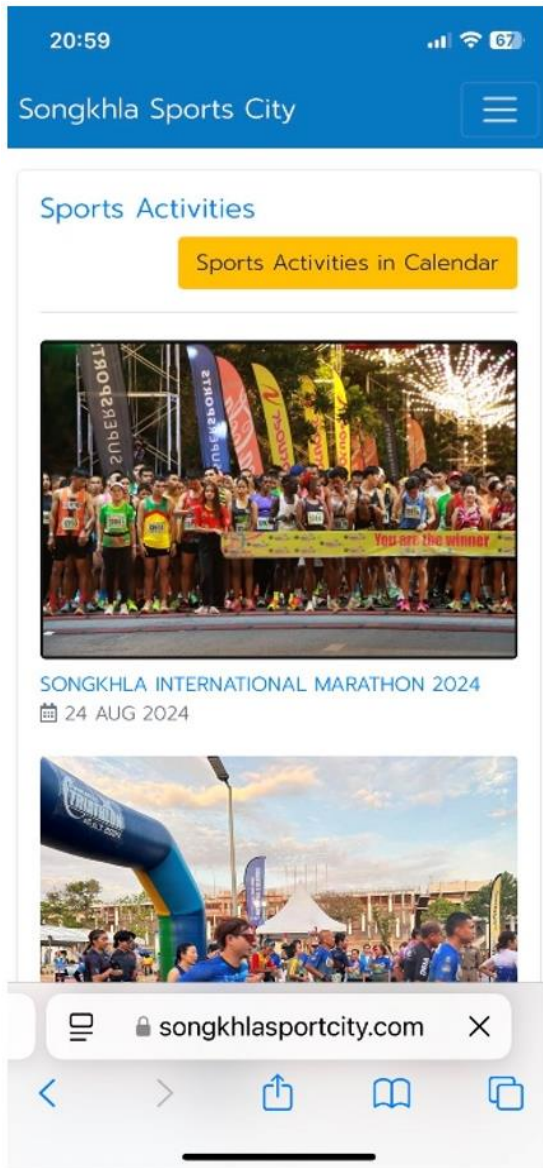


Figure 9.
Submenus.

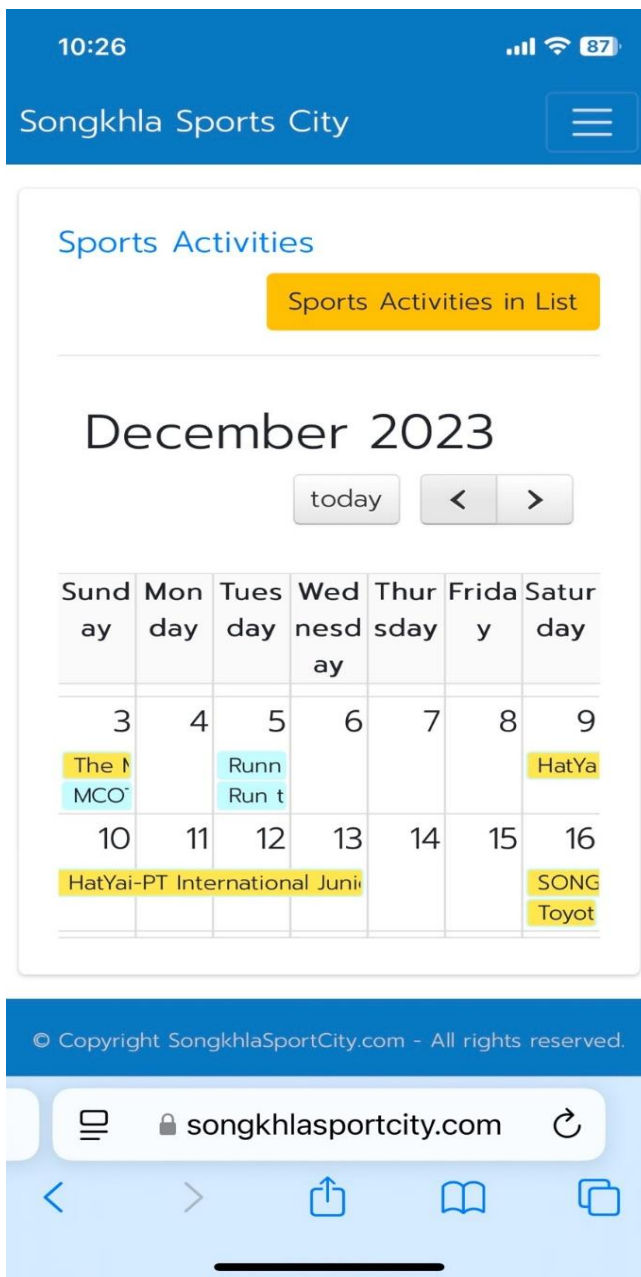


Figure 10. Activities calendar.

In addition, the digital platform system designed to enhance sports tourism—a case study of Songkhla Province—includes back-end systems that empower administrators to update various databases by adding, deleting, and editing information. These administrators were from four sports tourism agencies in Songkhla Province: 1. Songkhla Provincial Tourism and Sports Office, 2. Songkhla Provincial Sports Authority Office, 3. Songkhla Provincial Sports Association, and 4. Songkhla Provincial Administrative Organization. The back-end system comprises 15 menus as follows: 1. Home page 2. Public relations news management. 3. Tourist attractions management. 4. Sports activities management. 5. Restaurant management. 6. Hotels management. 7. Public transport station management. 8. Exercise venue management.

9. Souvenir shop management. 10. Emergency channels management. 11. Medal statistics management. 12. Sports personnel management. 13. Sports industry management. 14. Athletes Hall of Fame management. 15. Log out.

The digital platform system designed to enhance sports tourism, a case study of Songkhla Province, was evaluated and pilot-tested with four groups of stakeholders: Group 1 consisted of three digital platform experts, Group 2 consisted of three travel experts, Group 3 consisted of seven administrators from sports tourism agencies in Songkhla Province (the evaluation results from these groups are shown in Table 1), and Group 4 consisted of 396 tourists (their evaluation results are shown in Table 2).

Table 1.

Results of evaluation of efficiency and satisfaction from experts.

Contents	Group 1		Group 2		Group 3		Mean		Level
	\bar{x}	SD.	\bar{x}	SD.	\bar{x}	SD.	\bar{x}	SD.	
1. Information and content	3.93	0.52	4.40	0.62	3.87	0.77	4.07	0.64	High
1.1 The content is suitable for the intended use.	4.33	0.58	4.33	0.58	4.29	0.49	4.32	0.55	High
1.2 The content is correct and complete according to the specified points.	3.67	0.58	4.67	0.58	3.57	0.53	3.97	0.56	High
1.3 Appropriateness in arranging content	4.33	0.58	4.67	0.58	3.71	1.11	4.24	0.76	High
1.4 The content is up-to-date.	3.67	0.58	4.67	0.58	3.43	0.53	3.92	0.56	High
1.5 Categorization of the content	4.00	0.00	4.33	0.58	4.43	0.53	4.25	0.37	High
1.6 Appropriateness of the amount of content	3.67	0.58	4.00	1.00	3.57	1.27	3.75	0.95	High
1.7 Citing sources correctly, completely and convincingly	3.67	0.58	4.33	0.58	4.29	0.76	4.10	0.64	High
1.8 Appropriateness of the language used in the content	4.00	0.00	4.33	0.58	3.86	0.90	4.06	0.49	High
1.9 The content is suitable for the target group.	4.33	0.58	4.33	0.58	4.14	1.07	4.27	0.74	High
1.10 Graphics communicate meaning that matches the content.	3.67	1.53	4.33	0.58	3.43	0.53	3.81	0.88	High
2. System and Technological Media Quality	4.57	0.50	4.60	0.46	3.71	0.61	4.29	0.52	High
2.1 The system is simple and uncomplicated to use.	5.00	0.00	4.33	0.58	4.00	0.00	4.44	0.19	High
2.2 The selected menus are clear and user-friendly.	4.67	0.58	4.33	0.58	3.86	0.38	4.29	0.51	Highest
2.3 Information about tourist attractions can be easily searched.	4.67	0.58	5.00	0.00	3.00	1.00	4.22	0.53	High
2.4 Maps can be easily found while traveling.	4.67	0.58	5.00	0.00	3.71	1.60	4.46	0.73	High
2.5 The color tones used are appropriate.	4.67	0.58	4.67	0.58	4.43	0.53	4.59	0.56	High
2.6 The font size is appropriate.	4.67	0.58	4.67	0.58	3.57	0.53	4.30	0.56	High
2.7 The screen's graphic design is aesthetically pleasing.	4.33	0.58	4.33	0.58	3.43	0.53	4.03	0.56	High
2.8 The interconnection of various components is convenient.	4.33	0.58	4.67	0.58	3.43	0.53	4.14	0.56	High
2.9 The title is appealing.	4.33	0.58	4.33	0.58	3.29	0.49	3.98	0.55	High
2.10 This website is suitable for distribution.	4.33	0.58	4.67	0.58	4.44	0.53	4.48	0.56	High
Average Total	4.25	0.51	4.50	0.54	3.80	0.69	4.18	0.58	

From Table 1, it can be concluded that the digital platform system to enhance sports tourism: a case study of Songkhla Province is efficient and has met the satisfaction of the assessors 1) digital platform experts, 2) tourism experts, and 3) administrators from sports tourism agencies in Songkhla province. The overall average satisfaction score is 4.18, with a standard deviation of 0.58, indicating a very high level of satisfaction. When considering each item, it was found that 1) The information and content receive an average satisfaction score of 4.29; with a standard deviation of 0.52, which is considered a very satisfactory level. The aspects that received the highest satisfaction scores were the suitability of the content for its intended use and its appropriateness for the target group. 2) The system and quality of technological media received an average satisfaction score of 4.07, with a standard deviation of 0.64, which is also considered very satisfactory. The aspect that received the highest satisfaction score was the appropriateness of the color tones used.

Table 2.
Results of efficiency evaluation and tourist satisfaction.

Topics	Satisfaction levels		Levels
	\bar{x}	S.D.	
1. Screen format and usage	3.66	0.43	High
1.1 The home page (Main page) is beautiful, appropriate, and interesting.	3.93	0.26	High
1.2 Font size	3.60	0.49	High
1.3 User-friendly formatting	3.84	0.36	High
1.4 The search function is straightforward and uncomplicated.	3.48	0.50	Moderate
1.5 Speed of data retrieval	3.39	0.49	Moderate
1.6 Overall, you are satisfied with the screen format and its usability.	3.71	0.45	High
2. Information and Content	4.14	0.38	High
2.1 The information is accurate, clear, and reliable.	3.96	0.28	High
2.2 Accuracy in webpage linking	3.87	0.34	High
2.3 The public relations news is relevant and interesting.	4.45	0.50	High
2.4 Press releases, information, and content are up-to-date.	4.37	0.48	High
2.5 Press releases and content are clear and easy to understand.	4.22	0.41	High
2.6 The content is useful and serves as a good source of knowledge.	3.95	0.26	High
2.7 Overall, are you satisfied with the information and content?	4.19	0.42	High
Average Total	3.92	0.40	High

From Table 2, it can be concluded that the digital platform system, designed to enhance sports tourism in Songkhla Province, is efficient and has met the satisfaction of tourists. The average satisfaction level is 3.92, with a standard deviation of 0.40, indicating a very high level of satisfaction. When considering each topic, we find that 1) For the Screen Format and Usage, the average satisfaction level is 3.66, with a standard deviation of 0.43, which is at a very satisfactory level. The aspects with the highest level of satisfaction are that the home page (main page) is beautiful, appropriate, and interesting, and user-friendly formatting. 2) For Information and Content, the average satisfaction level is 4.14, with a standard deviation of 0.38, indicating a very high level of satisfaction. The aspects that received the highest level of satisfaction are the public relations news is relevant and interesting, and the press releases, information, and content are up-to-date.

5. Conclusion

The data used in the development of a digital platform to enhance sports tourism, a case study of Songkhla Province, were collected from four related agencies: 1) Songkhla Provincial Tourism and Sports Office, 2) Sports Authority of Thailand Songkhla Province, 3) Songkhla Provincial Sports Association, and 4) Songkhla Provincial Administrative Organization. The data were then analyzed and categorized, linking to content consisting of four main menus, submenus, and important news for easy

understanding: 1) Sports Database, 2) Tourism Database, 3) Facility Database, and 4) Contact Us. We utilized the Laravel Framework in MVC format with Responsive Web Design features for displaying on screens of all sizes. A CMS system is used to manage back-end content on the website. A MySQL database is used with JSON data transmission standards, with XAMPP as a database manager. An automatic conversation program in the form of a chatbot through Facebook Messenger was used to develop a web application for enhancing sports tourism that can be accessed at any time and any place without limitations. It is a channel for accessing sports tourism information conveniently and quickly by all groups of tourists who are interested and want to participate in activities, which truly meet the needs of tourists. Experts gave an average satisfaction level of 4.18, with a standard deviation of 0.58, and tourists gave an average satisfaction level of 3.92, with a standard deviation of 0.40, both at a very satisfactory level. Future research, therefore, should focus on developing a digital platform to enhance sports tourism using Augmented Reality (AR) technology.

Funding:

This research was supported by the National Science, Research, and Innovation Fund (NSRF) and Prince of Songkla University (Grant No. LIA6505030S). Special thanks also go to the Faculty of Science and Digital Innovation at Thaksin University, Phatthalung Campus.

Conflict of Interest:

The authors declare that there is no conflict of interest.

Ethics:

The research was carried out upon the prior consent of the Ethical Committee of the Center for Social and Behavioral Sciences Institutional Review Board, Prince of Songkla University (No. PSU IRB 2021 - LL - Librats 003 (Internal)). The subjects were informed of the objectives of the study and that they had the right to withdraw from the research study at any time without any penalty or consequences. In addition, they were informed that the information they provided would be kept strictly confidential and reported as overall results.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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