Transforming Cultural Tourism in Dali, Yunnan: Harnessing Digitalization for Smart Sustainable Heritage Experiences

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Abstract: This research article aims to identify and develop a strategy for the emergence of smart, sustainable tourism in Dali. Smart tourism refers to the use of ICT mechanisms to facilitate tourist access to tourism amenities as a major component of tourism. Arguably, the article uses literature such as published articles and books to show tourism as a global industry that accounts for about 9% of the global GDP and a major employment service industry. Furthermore, the study provides a descriptive analysis methodology to shed light on the different data collection methods employed in the study, as well as graphs and later analyses of the research data. COVID-19 has recently affected the tourism sector more than any other industry. According to the findings of this study, smart tourism creates an environment that is conducive to the growth of visitors, enabling them to have positive experiences. A UN report states that 1.9 billion people will travel worldwide by 2030. This highlights the importance of facilitating peace and promoting major tourist destinations as potential destinations. Thus, tourism as an industry has, over the years, undergone various transformations concerning shifting its focus on advances in technology, such as ICT. This has helped to improve its capacity and thus ensure improved service.
Keywords: Sustainability, Dali, Smart tourism, COVID-19, China, Innovative Strategies.

1.   Introduction:

Tourism is undoubtedly one of the largest industries worldwide [1,2]. According to statistics, tourism is a global industry that accounts for about 9% of the global GDP and is a significant employment service industry. Around 1.9 billion people are expected to travel the world by 2030, highlighting the importance of enabling peace and putting major tourist destinations on the map for potential visitors [3]. This implies that the tourism industry has, over the years, undergone various transformations in terms of shifting its focus on modern advancements such as ICT to augment its capacity and improve service delivery [4]. Research studies on tourism in general, as well as attention to smart tourism, have identified Dali as one of China's key tourist destinations. The results of this study indicate that more research should be conducted on the City of Dali to formulate innovative strategies. Which can contribute to the improvement of Dali's smart tourism industry [5]. To enhance or improve smart tourism worldwide, the preferred and best idea is to embrace information and communication technology as a core element or component of the tourism industry. This can be achieved by ensuring that each aspect, from booking tourist destinations to access to hospitality accommodation and spaces, is made a click away from your gadget [6]. In other words, smart tourism can best thrive in an interconnected virtual tourism space that brings about all elements of tourism to a one-stop online space [7]. Arguably, it is more appealing for tourists and visitors if the systems are concerned with reducing physical human traffic in tourist destinations. Therefore, if Dali fully transforms its tourism system into an ICT-driven sector in which technology controls every aspect, it can reap many benefits and advantages [8]. Dali is well-positioned to achieve this, given China's technological advancements in information and communications technology. China, a global leader in ICT and technology advancement, places Dali as a hub for intelligent tourism, accounting for millions of foreign visitors annually [9]. Thus, innovative city efforts are developed for residents and tourists to increase the quality of travel experiences in these destinations. In the present moment, global tourism and, more so, the aspect of intelligent tourism, therefore, have brought about sustainable and innovative smart tourism projects that are

necessary terms the means to enhance the international competitiveness of China and especially the tourism destination hub of Dali [10]. This article hence tries to investigate and subsequently come up with some of the practical, innovative strategies that can be put in place to improve smart tourism in Dali, China.

2. Dali Demography

This article explores the Chinese innovative tourism dynamics in the city of Dali. Dali is situated mainly in the western region of Yunnan province, in the southwest region of China. The city is 398 km from the capital of the province Kunming. It covers an area of 1,457 square km and an average altitude of 1980 m that is made up of various geothermal features like Karst, mountains, lakes, canyons, and rivers. Dali has a temperate, tropical plateau monsoon climate, like spring all year round [4].

**Figure 1:** Yunnan Province, China Map

2.1 Tourism attractions of Dali

Dali's annual average temperature is about 15℃ since it has a uniform Plain land or a plateau lake

Erhai Lake forms a unique suitable geographical climate environment for local people's living and development. (Dali Yearbook, 2019) Dali has impressive natural scenery, a brilliant long history, and a unique national culture. For instance, the Cangshan Mountain, as well as the Erhai Lake, fused with the Dali Ancient City, odd mountains, and clearwater combined with the Bai romantic feelings, has become a popular tourist destination at home and abroad. One of the most critical features of the city's appeal to visitors is the one-of-a-kind culture. With its culture spanning hundreds of years, Dali can reap huge benefits from its cultural diversification, a hallmark of most Chinese tourist destinations [5]. However, such an advantage comes with enormous challenges and threats that must be addressed to ensure that tourism thrives in Dali. One of the critical threats affecting the city of Dali is environmental pollution, which must be addressed to provide a lasting solution, hence promoting smart tourism [11]. This implies that the government of China and the local authorities in the city of Dali should formulate and adopt and successfully implement well thought and designed strategies that address the key issues facing smart tourism. For instance, technological innovation should be the primary idea for improving and maintaining a steady flow of tourists and visitors to the city of Dali [4].
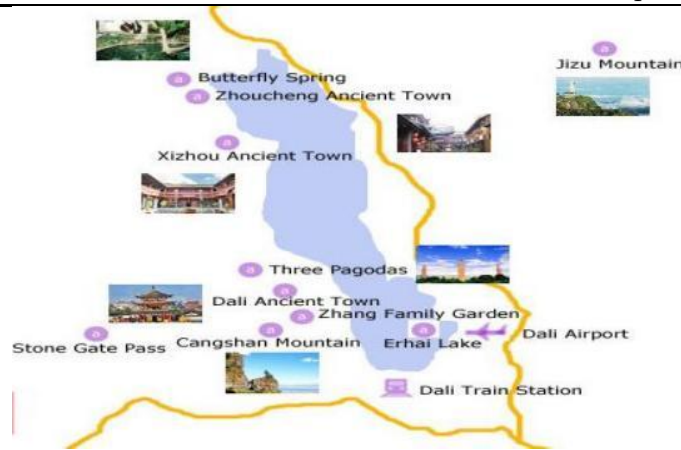
Figure 2: Tourism attractions of Dali

2.2 Revenue from Dali Tourism

For the past years, from 2016 to 2020, as shown in the graphs below, Dali has recorded an increase in the number of tourists visiting the area, hence increasing the amount collected from the area as a result of tourism. The consecutive increment has been brought about by the rich ancient customs, beautiful natural scenery, and the many cultural as well as historical monuments in the area which is in Yunnan province [12].
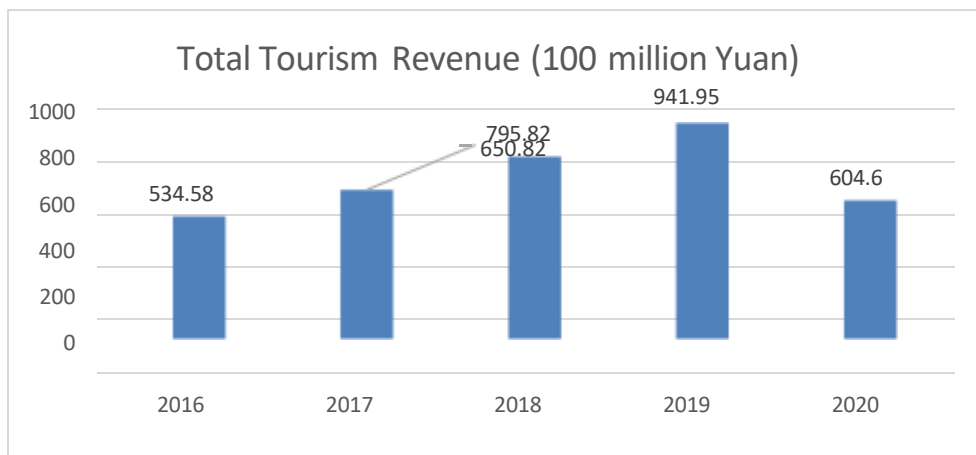
Figure 3: Total Tourism Revenue from 2016 to 2020

Source: Dali City Statistical Yearbook (DCBS20016-2020)

In figure 1, total tourism revenue increased steadily from 2016 to 2019 and sharply decreased in the following year, 2020. The steady increase indicates a 43.3% increase between 2016 and 2019 and a 35.8% decrease in 2020.
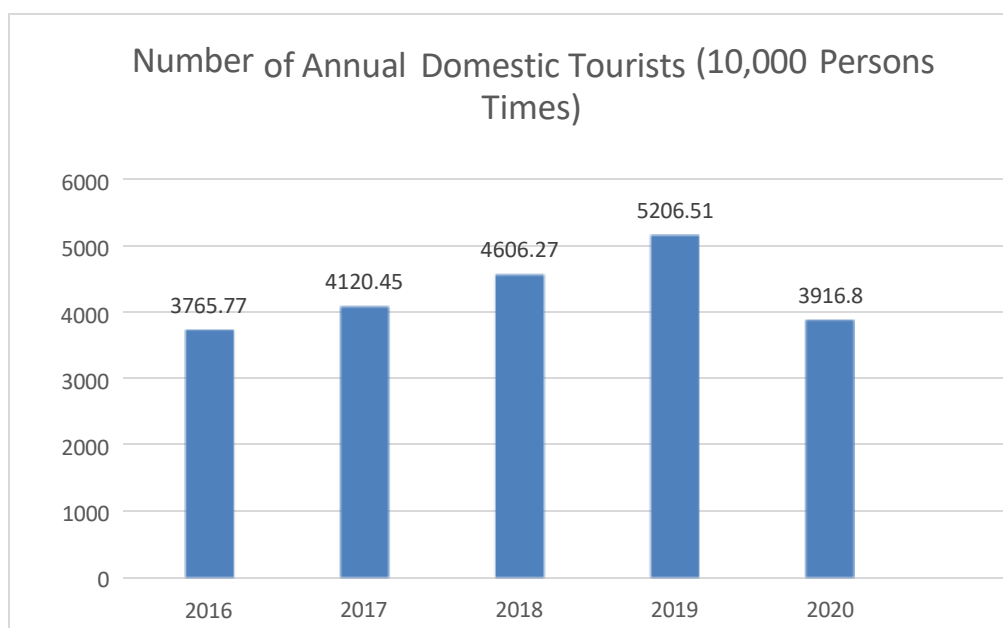
Figure 4: Annual domestic tourism from 2016 to 2020

Source: Dali City Statistical Yearbook (DCBS20016-2020)

Figure 2 indicates an annual increase in the number of tourists by 27.7% between 2016 and 2019 and a 24.8% decrease in 2020 [13].

3. Literature Review

3.1 Smart Tourism

Smart tourism is synonymous with technology because there is no intelligent tourism without technology. Ideally, technology makes smart tourism easy and equally able to thrive in an area since access to information is made fast and easy. In addition, smart tourism is the ability of tourists to easily access hospitality facilities or any other feature of tourism using Technology [14]. In the modern era, technology is readily available to almost every person from simple gadgets such as smartphones, laptops, and computers. For smart tourism to occur, it implies that a person who intends to visit a tourist destination can quickly get or access information about that place through technology without necessarily having prior knowledge of it [15]. That is what smart tourism is all about. Still, there is a need to create or formulate a correlative relationship between technology and smart tourism through evidence-based research and findings from different cities. In the case of Dali, the Chinese tourism space is known for its unique characteristics, making it a popular tourist destination in the world partly due to its creation of major intelligent cities, which bring about a scenic landscape in it as a tourist attraction bait. Furthermore, Dali is one of those intelligent cities in China that has adopted technology to promote its intangible culture through the construction of scenic buildings that attract both local and international tourists. Indeed, smart tourism is a game-changer in the entire tourism sector since it creates globally interconnected tourism facilitation, which enables tourists from different parts of the world to access hospitality spaces. One of the most valuable practices for smart cities is smart tourism which entails capitalizing on technology to harness increased tourism activities. In light of that, the tourism business is experiencing dynamic changes in how the modern tourism ecosystem is designed and structured. The term "smart tourism" refers to the use of numerous information technology applications in tourism, industrial growth, and organizational management, which permits a very organized utilization integration, and thorough development. Since 2013, numerous new viewpoints, models, and ideas have quickly developed that help us better comprehend the definition of intelligent towns and their effects [10]. These fields include hospitality, marketing, computer science, and management for towns, people who live there, the environment, technology, organizations, and visitors despite the knowledge of how smart tourism has been used in various tourism subdomains. In scholarly literature, the last ten years are still uncertain. In addition, the focus has been given to reviewing the entirety of intelligent tourism research as well as the most researched topics, the proportional importance of its fields, and streams of research. Therefore, taking a step back and considering the big picture is beneficial to clarify the current focus, features, and possible areas of interest in studies regarding intelligent tourism. To our knowledge, they are

fundamentally distinct. The focus of intelligence is on technical skills. They deliver more valuable and effective services, including concrete, to the customers.

The idea of smart tourism is not a new terminology since it has been there since the 1990s, and it is commonly used to describe or define a scenario where tourism is hugely driven by Technology   [16]. This means that for smart tourism to take place, develop, and subsequently thrive in a place, technology should be the foundation block that holds all other aspects together. Ideally, smart tourism is focused on addressing the challenges of the entire global tourism ecosystem by bringing on board or creating innovative mechanisms and strategies focused on making technology the primary tourism driver [3]. It is common knowledge that the modern world is gradually shifting from traditional models to modern models that incorporate technology at the heart or the core of every operation in almost every aspect or sphere of life and society. This is one of the reasons why smart tourism has gained popularity over the past decades since it is seen as the perfect launch pad that will propel the global tourism ecosystem into the future.

3.2 Smart Tourism in China

Smart tourism in China has been critical in both industries and learning institutions. China has not the different strategies that could lead to smart tourism in developing its tourism policies. This would place the country at the top of those that attract many tourists globally. Different scholars from China have given different concepts on the meaning of smart tourism. Yao and Ma (2011) define smart tourism as applying technology in the tourism sector. Other scholars like Liu, Lu, and Li have brought concepts like cloud computing, networking, communication, and new information dissemination and acceptance (Ma & Liu, 2011). The latter has boosted the intelligence within the country, China, and the extent of it has been felt by the tourists who for a long time have been visiting China. As a result of China's adoption of smart tourism, tourists no longer need to travel to China without knowing the tourist sites they should visit. Instead, they can use their devices to see the country's most stunning sights, the most affordable hotels, and the wide range of tourism-related services (Yao & Lu, 2013). This has enhanced convenience among the tourists and the management of the tourism industry as information exchange between the two parties is very quick, and tourists receive this information while in their comfortable homes.

China has been seen to record millions of tourists every year. This has been brought about by the fascinating folk customs, beautiful natural scenery, and the cultural and historical sites in Beijing, Xi'an, Luoyang, and Nanjing, to mention a few[17]. Since China has been quintessential to technology since time memorial, it has recorded an increasing number of tourists from 2016 to 2019, with 2019 recording the highest number of tourists who visited the country (145.3 million tourists) [18]. The increment in their numbers has been argued based on China adopting smart tourism and new innovative strategies for smart tourism. In the subsequent year, 2020, China recorded 27.5 million tourists; during this year, the country experienced a lapse due to Covid- 19 [19]. The disease outbreak brought some strict measures, which saw many countries initiating lockdowns, with China being the most hit nation. Countries denied their people travel and hence the decrease in the numbers. Also, the local tourists feared the virus and could not visit their national tourist sites.

Specifically, smart tourism has benefited China's government, the scenic, and their tourists. On the side of the government, it has helped it perform public opinion analysis, does macro forecasting, note the chances of disaster, manage information, manage the tourism industry, and release different travel policies [20]. On the scenic side, smart tourism has helped monitor traffic, predict tourist flow, analyze the tourists 'behavior, market their scenic beauties, and release product information [21]. These benefits have not left China's esteemed tourists behind; they have benefitted from knowing the most critical information that they make as queries, assured them of smart tour guiding, provided them with smart online dashboards to make their travel reviews and recommendation, and looking for products and accessing scenic services [22].

Figure 6: Regional Distributions of China's Pilot Cities of Smart Tourism

3.3 Smart Tourism System and Technology

An intelligent tourism system can be augmented through technology by ensuring sufficient data and information are efficiently accessed online through technological equipment and gadgets [23]. For example, there should be plenty of information on the online domain or platform about a particular tourist attraction site, making it easier for strangers to know that place before visiting it. Ideally, technology is handy for smart tourism since it is only through technology that cities or other places attract tourists, and visitors can advertise their features and what they offer [10]. example, there should be plenty of information on the online domain or platform about a particular tourist attraction site, making it easier for strangers to know that place before visiting it. Ideally, technology is handy for smart tourism since it is only through technology that cities or other places attract tourists, and visitors can advertise their features and what they offer [10]. Tourism activities can easily be facilitated through technological advancements, which make the experience of tourists and visitors exciting and worth remembering. There must be a technology-driven network of information in an intelligent tourism scenario that enables tourists to access information as fast as possible and have a prior understanding and knowledge of topography, climate, hospitality facilities, and other essential details of a particular tourist destination. A technology and information network in tourism is an integral component of intelligent tourism, considering the diverse variety of data and information bits that can be stored and accessed online [10]. With a highly developed as well as advanced application of technology in the tourism industry in Dali, there is a high chance of creating a sustainable smart tourism ecosystem since there is already an existing framework for sharing and accessing data and information. Smart tourism enables or instead creates an environment or space of digital development and advancements in the sense that it creates a vast, sharable database. For example, smart tourism leads to more data and information accessible online for other potential tourists to use in the future (Coca [3]. Ideally, in an existing smart tourism ecosystem, a new visitor or tourist can easily be able to plan or arrange for travel, accommodation, and other facilities in a tourist destination. In simple terms, smart tourism, which is deeply connected through technology, brings in the aspect of digital resources, which is an added advantage to tourism as a whole. In smart tourism, tourists share their experiences regarding a specific destination, enabling other tourists to make informed decisions when planning their tours. Furthermore, travel reviews are also easily sharable and accessible in smart tourism, creating a scenario where there is feedback regarding tourists' experiences. This makes it easier for stakeholders in that specific tourism system to understand their weaknesses and subsequently recognize their strengths to develop strategies to improve their weaknesses [23]. For instance, the local authorities in a particular tourist destination can know the problems their tourists face and use the feedback in the reviews to address the problems. This shows that intelligent tourism is vital to tourists and the owners of tourist attraction destinations since it creates a scenario where information is easily sharable and accessible for both parties [16]. This can also lead to development in terms of digital resources available for use by both locals and potential visitors in the future since plenty of information resources are available.
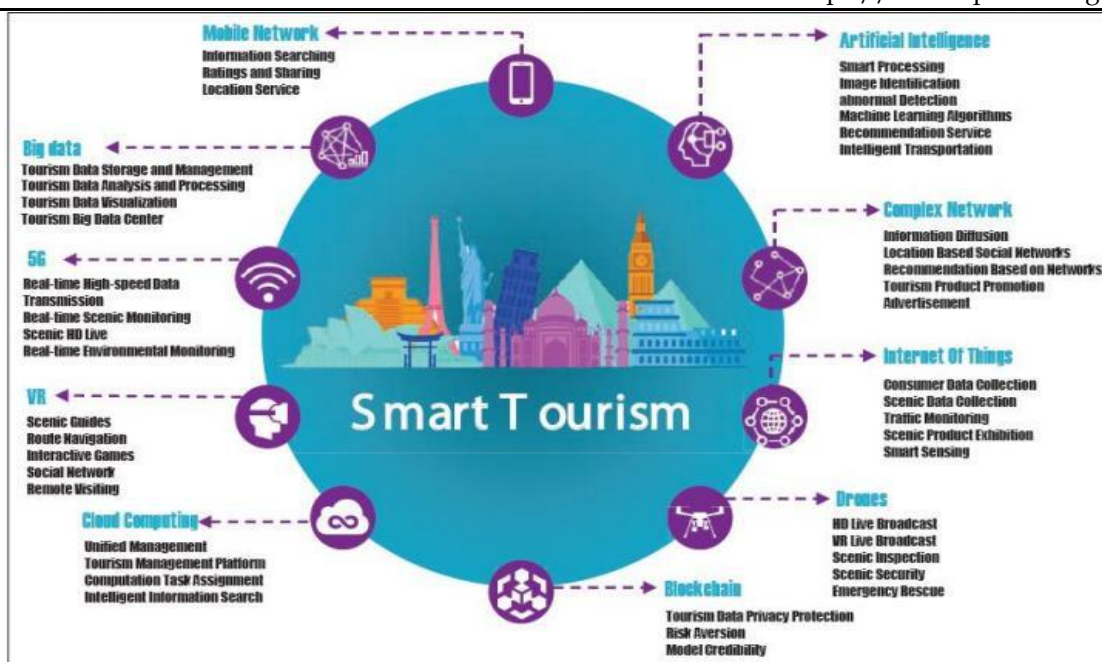
Figure 7: Key Technologies of Smart Tourism.

4. Methodology

The methods or models of collecting, evaluating, and analyzing data and information in any research setting determine whether the findings and results are credible and viable. Various methods of data collection are applicable in research projects. For instance, this research article will focus on previous research studies as the source of data regarding smart tourism in Dali. Using the findings of prior studies, we may draw a clear picture of how Dali's smart tourism has performed, improved, or developed over the past few years [24]. The scope of the research will be on the last five years, which will give an indication of the graphical representation of tourism data in the city of Dali hence making it easier to predict the future of intelligent tourism in Dali. According to past research studies carried out in the Chinese smart tourism ecosystem, especially in the smart cities of China, Dali included, showing a sharp increase in the number of tourists visiting Dali over the past decade [25]. This is basically due to the increased development in terms of technology as well as the formulation, adoption, and implementation of innovative strategies geared towards steering the smart tourism economy in Dali. In addition, previous research on smart tourism in China shows there has been an upward trend of tourist tours in Dali, and this can be attributed to the dependence on technology to boost tourism by making it easier to access tourism and hospitality facilities and information [25]. The data is analyzed using the bibliometric technique, which gives credible results after analysis.

From previous research studies and data analysis on smart tourism in Dali, a descriptive analysis framework is used to give or show a correlation in previous data as well as any predictions for the future regarding how innovative tourism patterns and trends are likely to be in the coming years. Ideally, through a proper evaluation and analysis of previous data, one can make forecasts of the future in terms of whether there is likely to be an increase or a decrease in the number of tourists and, subsequently, the overall behavior of smart tourism [3]. According to previous studies on this topic, Dali has recorded a subsequent increase in the performance of intelligent tourism and the number of new visitors and tourists visiting the city. This is clearly shown by about a 30% increase from 2017 to 2021 in the number of new arrivals by local and international tourists. Cangshan Mountain, the Ancient Dali city, and Erhai Lake accounted for almost 95% of the tourist visits to Dali [15]. Critical evaluation and analysis of the data given by previous studies show a high possibility of an increase in these numbers, given the local government's adoption of innovative strategies to boost smart tourism in the city. These strategies include improved geographical accessibility through technology and virtual reality, focusing on making the city of Dali a tourism hub in the coming years [4].

Also, case studies will be conducted to explain the relationship in the smart tourism model. The link between the three given concepts, technology, tourist experience, and sustainability, will be researched, and the underlying literature given on the findings. For smart tourism to work effectively and for tourists to have the

best and most memorable experiences, the three concepts should be implemented in research and activity. These concepts must be thoroughly investigated, and their contributions to smart tourism should be the primary objective while covering gaps left by previous studies and literature (González [26]. Another critical imperative that needs to be investigated is the recovery of intelligent tourism in Dali post-COVID-19 period since, during that period, tourism in almost every country seemed to stagnate. During the COVID-19 period, many smart tourism destinations experienced low tourist visits due to the travel bans and other restrictions imposed to counter the spread of the pandemic. To determine the resilience of smart tourism destinations in their respective recovery, the city of Dali, as per recent research studies, has done an excellent job in boosting its tourism visits post the COVID-19 period [13].

Figure 8: Sustainable Smart Tourism Model

Tourist Experience: Dali's innovative tourism model has put much emphasis on the tourist experience since this determines how frequently tourists will visit the area. A fundamental gap identified in
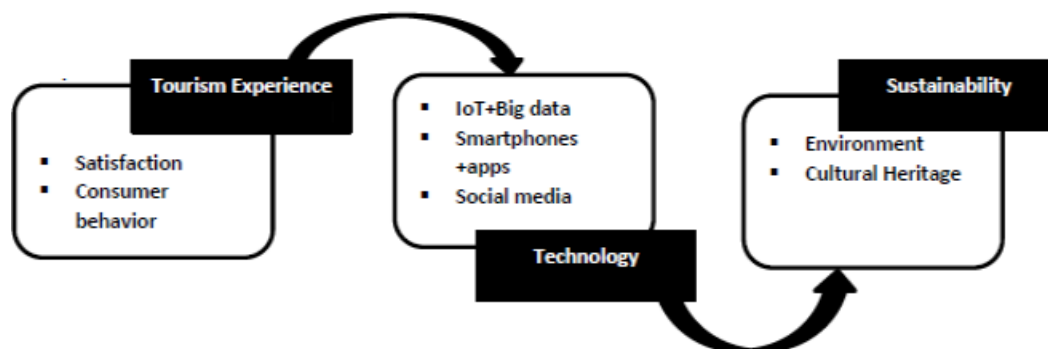
different kinds of literature about the tourist experience are the inability to conceptualize the meaning of the smart tourism experience. However, Hui-wei et al. (2014) provide an approach to the smart tourism experience defining it as the application of technology in the industry which would then note the extended time a tourist would stay. The stay of tourists will be determined by the satisfaction they get from their place of visit and the environment. This statement shows how the tourist experience links to sustainability. Technology is not left behind in showing their relationship since innovative technology has provided appropriate and efficient means which improve tourists' experience. Innovative tourist experience positively influences the behavioral values of tourists and their memorable tourist experiences [8]. This is facilitated by smart technology in tourism since tourists save such memorable moments on their smartphones for watching later. This determines whether the tourists will ever get back to their experienced places or not; however, chances of changing opinion are reduced by the smart tourist experience [27]. The finding of this study has shown an increase in the number of tourists visiting Dali from the year 2016 to the year 2019 before the COVID-19 pandemic outbreak. The solid lead for this is because China is building smart cities and embracing innovative technology and tourism models. Innovative tourism experience has provided approaches like satisfaction and consumer behavior which provides a gap for further research on innovative tourism models.

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4.1 Technology

Technology as a model for smart tourism impacts the industry in many ways. Going digital is one of the aspects that will place the tourism industry to compete with other sectors in different countries. The technology involves designing webs, using smartphones for accessing information and services, social media, and the IoT for interpreting and storing big data by tourism industry management [14]. From the literature part, technology is linked with sustainability and tourist experience. Tourists have been seen to showcase different behaviors while searching for tourist destinations online. Also, different tourists have decided on the places to visit from a primary point of being influenced by the short episodes of different areas posted on social media. Through technology, smart tourism has been introduced more so in Dali, China, attracting many tourists visiting Dali [28]. The tourist industry has stored huge data in their office gadgets and would quickly know the number of tourists visiting their place, like Dali, without any struggle. Studies have shown that tourist reviews are easily readable, and the chances for development in the tourism industry are too high [13]. Through IoT, the industry has learned about the different aspects embraced by different tourists. Hence, the idea to improve their systems and other areas where gaps are noted has been easier [4]. Furthermore, technology has provided online services whereby tourists can easily get tour guides, book accommodations, and even request meals. Technology appraisal in the tourism industry has introduced terms like social networks, big data, IoT, and mobile technology, which upon future research, would help transform smart tourism [29].

4.2 Sustainability

Sustainability has proved to be a critical model in smart cities and hence smart tourism. It has its effects and gives an in-depth understanding of smart tourism and its expanded models. Sustainability improves the lives of the local dwellers, helps manage available natural resources, and ensures the best results in the management process [26]. As a result of the introduction of ICT in the tourism industry and the aim of providing comparative knowledge across the globe, sustainability has been linked with technology, whose objective is to explain the relationship between the development of technology and the management of shared knowledge [29]. From a global lens, the tourism industry has sustained and improved over time due to the introduction of smart and sustainable tools. Different studies have been carried out over time and show that many customers worldwide have gained satisfaction since an increase in sustainable practices was initiated. For our study focus, Dali, sustainability has been enhanced within the local tourism industry since many smart-based city residents have been built. This has, as a result, increased the number of tourists visiting the areas. Sustainable tourism cannot work well without a link-up between technology and sustainability. For sustainability to be maintained, technology should be at its forefront, ensuring that tourists access services online from differently designed webs and gadgets like smartphones [30]. There is a need for additional research on sustainability since local cultures have been neglected in overall tourism. Hence, the diverse gaps like how local cultural heritage can lead to sustainability should be emphasized by future research.

5. Results and Discussions

For the case of Dali smart tourism, the data analysis and evaluation show a positive trend in how smart tourism has performed over the past five years in Dali [25]. There is an upward shift of about 36% in consecutive years regarding the increasing number of tourist visits to the region. In addition, smart tourism accounts for about 71% of the total revenue for tourism in the Yunnan region, mainly from the city of Dali [25]. Data shows that there has been a boom in the recovery of smart tourism in Dali post-COVID-19 era, which almost brought the industry to a halt due to the travel bans and other restrictions put in place during that period. There is seemingly an upward trend in almost every aspect of smart tourism in Dali, making it a popular innovative tourism destination globally. The data shows about a 40% shift in the tourist preference index for Dali. This shows a rising trend regarding Dali becoming a top preferred innovative tourism destination [31]. In addition, Dali accounts for about 11% of the total Chinese tourism volume in terms of the total number of tourist visits. That is another positive indication of the growth and development of smart tourism in Dali [32]. These positive numbers result from the various innovative strategies implemented by the local government of Dali to boost and promote smart tourism in the region. On top of such innovative measures is adopting technology as the critical component of smart tourism through creating a technological tourism environment that provides easier facilitation of tourism activities.

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The areas they will tour.

Furthermore, the tourist experience in Dali has not been left behind. Findings indicate that tourists have had great satisfaction in Dali and have stayed in the area for extended periods. It has not ended with one tourist, but they have given reviews of the Dali smart tourism which has attracted more tourists concurrently.

Considerably, 2019 recorded the highest number of tourist visits, with a slight drop in the subsequent year 2020. This drop can be attributed to the COVID-19 pandemic, which saw a decrease in global tourism in every part of the globe [33]. Savvy tourist in Dali, apart from 2020, has been recording huge numbers, which indicates that Dali is a preferred tourism destination in China for both local and international tourists. During the COVID-19 period, many smart tourism destinations experienced low tourist visits due to the travel bans and other restrictions imposed to counter the spread of the pandemic. To determine the resilience of smart tourism destinations in their respective recovery, the city of Dali, as per recent research studies, has done an excellent job in boosting its tourism visits post-COVID-19 period.

6.   Challenges for Provision of Sustainable Innovative Strategies

Ideally, sustainable smart tourism in Dali faces various challenges that should be mitigated to allow or give room for intelligent tourism to thrive. In most cases, the local community or the local physical space of an intelligent tourism destination determines whether the destination is bound to face challenges.

7.   Pollution and Environmental Pollution

Pollution, especially environmental pollution, is the main challenge facing the sustainability of innovative tourism in Dali [11]. Any tourist will not want to go to a place or a tourist destination that is polluted. Pollution makes the personal experiences of tourists horrible, thus decreasing the tourist attractiveness index of that destination. Where there is environmental pollution, the quality of life also tends to be worrying, which can significantly drop tourism's attractiveness level. For instance, there have been reports of prevalent water pollution around Erhai Lake which is one of the major tourist attraction sites in Dali [11].

7.1 Limited space for small businesses

Dali is a growing city, implying that small businesses such as street vendors continue to increase daily. With the limited space for street vendors kept constant, it implies that the incoming street vendors and roadside sellers are forced to share the little existing space with those already in the market. Overcrowding is one of the study's significant findings, and it has the potential to harm the growth and development of smart tourism as a whole [32]. Ideally, tourism is likely to flourish in destinations that have expansive open spaces and not overcrowded spaces. Overcrowded spaces give tourists horrible experiences, reducing the number of tourists visiting specific destinations. For sustainable smart tourism to flourish and thrive, the local government and authorities in Dali should develop zoning policies regarding how street vendors and roadside kiosks are structured, designed, and organized within and around important tourist attraction sites [31].

7.2 Inadequacy of Physical and Non-Physical Resources

The lack of enough resources, both physical and non-physical, is yet another challenge facing sustainable smart tourism in Dali [32]. Ideally, smart tourism is a collaborative or multi-faceted industry that includes various stakeholders from hotel owners to the local government, and so forth. This implies that for smart tourism to thrive in any given innovative tourism destination there must be a set of policies and collaborative strategies which recognize and appreciate the role played by every stakeholder in the growth and development of innovative tourism. Contextually, the laxity of the local authorities in Dali to formulate these collaborative strategies and the bureaucracy regarding licensing is a challenge that limits or slows down the sustainability of Dali's smart tourism [14]. The local authorities of Dali must lobby for increased resources and capital investment to increase the capacity of the city in terms of its ability to host and accommodate local and international visitors and tourists.
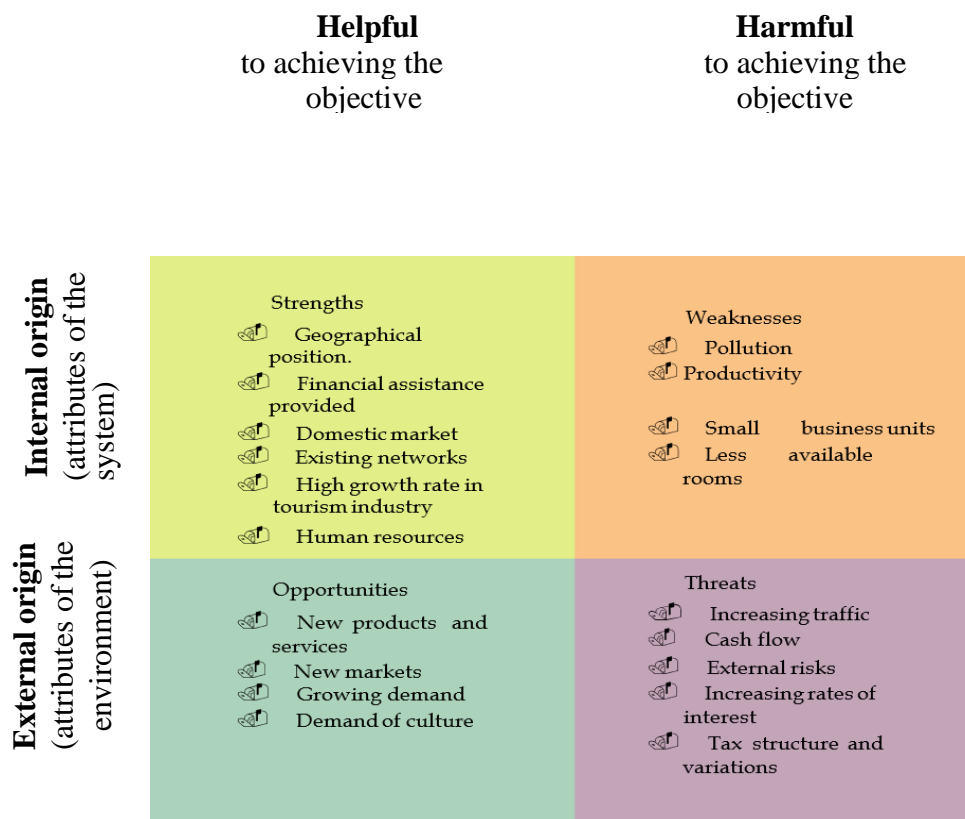

Figure 9: SWOT Matrix Analysis of Dali Smart Sustainable Tourism

Smart sustainable tourism in Dali has not been a walk in the park since it's been struck by different challenges that need to be mitigated so that its development can be significantly realized. Some of the challenges experienced are brought about by some internal factors that the local authorities in consignment with the tourism management can work to control or improve. Other external factors are seen to spear these challenges since they are uncontrollable by the primary stakeholders. Therefore, to show the effects of these challenges and offer solutions together with providing room for the evaluation process of the sustainable change brought by smart tourism in Dali, a SWOT analysis matrix needs to be undertaken which will bring to the open the internal (strength and weaknesses) and the external (opportunities and threats) factors. Below is a figure showing the strengths, weaknesses, opportunities, and threats associated with smart sustainable tourism in Dali.

8. Sustainable Smart Tourism Innovative Strategies

For smart tourism or the tourism industry to develop and grow, there is a need for the formulation and adoption of strategic measures that are fashioned toward improving the quality of tourism in any given region.

8.1 Dali An Ideal Case Study

Dali is an ideal case study of technological invention and innovation spur smart tourism growth. Located in the Yunnan region of China, Dali has its unique intangible culture and monumental and scenic sites, which have continued to be tourist attractions [9]. With scenery comes a myriad of challenges which range from environmental to managerial, and Dali is not an exception in this scenario. Though a leading tourist attraction region in China and a technology-smart city, Dali has put in place strategic measures to ensure that it remains a top tourist attraction destination in China and the entire world. Ideally, the success of smart tourism is made possible by the underlying strategies put in place to ensure that it is efficient and that the right environment is responsible for spurring tourism growth.

7.2 Dali's Smart Tourism Sustainable, Innovative Strategies
7.2.1 Robust Information and Communication Technology

There are various strategies which, according to research, are known or proven to possess the ability to lead the growth of smart tourism. As part of its tourism strategy, Dali's local government is putting in place a robust and highly developed ICT infrastructure that allows travelers to easily access tourist resources, from travel to lodging, among other areas of tourism [25]. This determination by the city of Dali authorities to recognize ICT as a critical driver in spurring smart tourism growth has significantly impacted the growth, development, and performance of smart tourism in Dali. Arguably, technology is a massive contributor to smart tourism, and tourist destinations must embrace technology and make it a core component of the entire tourism ecosystem [30]. The Chinese government recognizes and formally adopted smart tourism as the significant element in its tourism policy to its advantage. In other words, the city of Dali benefits from the Chinese government's decision to adopt fully and formally smart tourism as one of the key policy areas in its dream to boost the tourism economy.

7.2.2 Mitigation to Challenges Strategy

In addition, innovative strategies are the key pillars of smart tourism in Dali in the sense that the city authorities and stakeholders in the tourism sector of Dali give a lot of emphasis on innovative measures and mechanisms for addressing the potential challenges and threats smart tourism. The application of such innovative strategies is based or instead guided by the explicit knowledge that smart tourism is a critical sector which is also multi-faceted. Due to the multi-faceted nature of the smart tourism sector, it is vital to recognize the potential pitfalls or challenges which may occur and therefore come up with credible and feasible solutions based on innovation [30]. To achieve this, the local authorities of Dali have adopted Technology-driven models to deal with issues such as environmental pollution, mainly in the Cangshan Mountains and Erhai Lake. Ideally, environmental pollution is one of the main threats of smart tourism since it decreases the attractiveness value and index of a tourist site or destination (Fan [5]. To address pollution, smart tourist destinations such as Dali should put more emphasis and focus on green innovative models and strategies.

7.2.3 Digitalization Strategy

Innovative strategies like digitalizing the tourism industry are key contributors to smart tourism, especially in Dali. Technology has been embraced in the area and fashioned for smart tourism. The city, located in China, an epitome of ICT developments, has now recorded a high number of tourists for consistent years due to the introduction of smart tourism, which would apply technology in almost all its aspects [34]. For instance, the storage of big data for tourist industries will need the application of technology, and smart tourist experience will need it, too, as well as tourist review dashboards.

7.2.4 Eco-Tourism Packages Strategy

Most tourists visiting Dali were short-lived. For a consistent recording of high revenues within the tourism sector and maintaining the opening of new opportunities in the industry for employment, the government, in collaboration with the industry's top management, should devise an innovative strategy to make tourists stay longer. The local authorities of Dali have come up with an ecotourism package strategy. This has enabled tourists to travel to the outstanding natural locations in Dali and learn more about Dali's local environment and the suggested protective measures [35]. The tourists have felt the homage to identity, and most opted to stay longer, review the place positively and have frequent visits a year.

7.2.5 Health and Hygiene

The tourism industry in Dali has been significantly affected by the outbreak of the Covid-19 pandemic. This saw the city record fewer tourists in 2020 compared to the previous year. In collaboration with the national authorities, the local authorities have ensured the application of health and hygiene strategies. Here, both health and hygiene protocols have been facilitated, and several sanitation facilities like toilets have been built and improved to ensure hygiene for the tourists [36]. This strategy aims to recuperate the industry and set it to collect higher revenues as it has before for the general creation of other smart cities in China.

9. Conclusion

From the data analysis and results, a research article should give a list of suggestions and recommendations which need to be implemented to improve the current situation. In this case study of smart tourism in Dali, the focus should be on technology by ensuring that the involved leaders tap in, capitalize, and invest hugely in technology infrastructure. As noted in the earlier sections of the paper, technology has the powerful ability to turn around the value of the smart tourism industry or sector in any given smart tourism destination [37]. This is mainly because technology is the major building block of smart tourism, and without technology, there is no smart tourism. This implies that for smart tourism to thrive in such areas which are identified as smart tourism destinations there ought to be an intensive investment in building a highly developed and sustainable technology infrastructure that allows for the growth and improved performance regard to smart tourism.

There is considerable potential for robust smart tourism growth and development in Dali if the smart tourism industry or sector stakeholders continue to embrace the sustainable and innovative strategies it has been using for the past years. To ensure that it succeeds in growing the competitive smart tourism industry, the local authorities should prioritize technology and technological advancements to tap into the power technology brings onboard smart tourism destinations. Notably, there is a consistent increase in tourism inflow and revenues collected from the appraisal and recognition of the smart tourism model in Dali. In its attempt to ensure the digitalization of the industry, Dali has conceptualized technology, sustainability, and tourists' experience as the triplet go hand in hand. After the onset of Covid-19, these ideals have been fully implemented, resulting in Dali's tourism industry being rebuilt, and the city's chances of returning to its previous high tourist numbers are incredibly high. Lastly, on the results, Dali is seen to have consistent tourist visits of 36% each consecutive year from 2016 to 2019; however, the drop in 2020 resulted from the corona pandemic [24]. The cities' smart tourism accounts for 71% of the total revenues collected from all the sectors, and it has the record that it accounts for 11 % of all the tourists that tour China (Wang et al., 2021). From the opinion collections across the world, 40% of people across the globe would wish to visit Dali for its tourist experiences ranging from their cultural heritage to the scenic beauty [25]. Dali's local authority has boosted tourism visit posts since the outbreak of Covid-19 pandemic outbreak to reach more people. This attempt would reciprocate in an increased number of tourist visits.

9.1 Limitation

One of the most demystifying limitations which engulfed the entire world can be attributed mainly to the onset of Covid-19. The pandemic brought about the rise of the travel ban and even stiff restrictions, especially in the tourism industry [10]. Such a state has severe implications in Dali as some of the possible tourists have extreme measures which make travelling difficult. In addition, the virus also reduced the workforce, especially because of death to those inflicted. Dali thus seeks to keep improving its health care system to effectively maintain and improve its population and tourists coming into explore the various tourist attractions.

9.2 Future Implications

The future of international tourism is becoming increasingly questionable as a worldwide sector and an essential economic development instrument [20]. The notion that international tourism can be sustained at current rates and patterns of growth is under severe threat from environmental and social interest groups, rising fuel prices, and other global environmental and environmental changes. Dali endeavors toward a holistic adaptation and implementation of smart, sustainable, innovative strategies as part of the city's policies and developmental goals. Thus, this will see an increase in the rise of tourist expeditions in Dali, which will ultimately be significant revenue and give a sense of great accomplishment.

In addition, Dali looks forward to fully adopting green tourism, which implies completely eradicating contaminants and hazardous materials. Pollution over time has always posed a stiff challenge to the success of any tourism industry. With the introduction of green tourism in Dali, issues relating to environmental degradation would be a matter of the past. Therefore, such a move will make Dali a safe and serene haven that sustains eco-friendly services and nourishes the tourism sector. Dali seeks an array of exciting possibilities for tourist attractions and travel agents. The city is blessed with distinctive culture and striking sceneries, which are engaging and provide peace and tranquility to the tourists. With a diversified tourist catalogue, the visitors can have plenty of options to choose from and even the incorporation of advanced technology to help logistics and efficiency at the sites. This will eventually put Dali on the global landscape and pride to many.

10. References

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