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Faculty of Tourism and Recreation
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410087, Oradea, Romania, Phone/fax: +40 259 408 475 e-mail: gtg.uoradea@yahoo.com

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TOURIST RESOURCES AND TOURIST POTENTIAL OF MINDORO ISLAND IN THE PHILIPPINES

Armanay SAVANCHIYEVA
Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Almaty, Republic of Kazakhstan, e-mail: armanay75@mail.ru

Emin ATASOY
Bursa Uludağ University, Faculty of Education, Department of Social Studies Education, Bursa, Turkey, e-mail: eatasoy@uludag.edu.tr

Zharas BERDENOV[*]
L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Nur-Sultan, Kazakhstan, e-mail: berdenov-z@mail.ru

Kenenbay MAMBETALIYEV
Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Almaty, Republic of Kazakhstan, e-mail: Kenenbay2013@gmail.com

Karlygash MUZDYBAYEVA
Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Almaty, Republic of Kazakhstan, e-mail: mkk77@mail.ru

Dariga KHAMITOVA
International University of Tourizm and Hospitality, Department Tourism and hospitalyty, Turkestan, Kazakhstan, e-mail: dariga1979@mail.rux

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Abstract: The article is devoted to the study of the tourism potential of Mindoro Island in the Philippines. The total area of Mindoro Island, which is in the Luzon islands group, is 10571.8 km2 and the total population of the island is 1,4 million. Mindoro, the seventh largest island in the Philippines, is a mountainous and rugged island. The Mindoro Island, situated in the triangle formed by Luzon, Palawan and Panay islands, is one of the most visited and most popular tourism centers of the Philippines. In this study, the geographical location, natural and human geographical features of the island of Mindoro, as well as the tourist attractions and tourism advantages are briefly discussed. The main purpose of the study is to acquaint a wide range of readers with tourism resources, tourism potential, natural and cultural tourist attractions of Mindoro Island and offer new options for recreation for curious tourists. The paper provides a multivariate analysis of tourism on the island by discussing the tourism advantages and disadvantages of Mindoro Island. As a result of the study, the authors have prepared a useful tourist guide for foreign tourists who will visit the island. It was revealed that Mindoro Island is not as big as Luzon, it is not as crowded as Mindanao, it does not have as many luxurious tourist spots as Boracay, and it cannot be said that it is a famous tourist destination like Palawan Island. However, this tropical island attracts thousands of holidaymakers from all over the world every year due to its unique natural beauty and breathtaking tourist attractions. Mindoro Island can offer an alternative travel option, an exciting travel itinerary and an interesting travel destination for every curious tourist 365 days a year.

Key words: Philippines, tourism, tourism potential, Mindoro Island, Philippine Archipelago, tourist attractions, accommodation facilities

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INTRODUCTION

The island of Mindoro, situated just south of the island of Luzon, is the seventh largest island of the Philippine archipelago by surface area. The total area of Mindoro island, which is found in the group of islands of Luzon, is 10571.8 km^2 and the total population of the island is 1.4 million. On the island of Mindoro, there is an average of 132 people per km^2 (Table 1). The size of the island is almost the size of the Republic of Montenegro, but the fact that it has twice the population indicates that the island has a higher population density. The lack of any urban settlements with a population of more than 200,000 within the island borders demonstrates that Mindoro is devoid of metropolitan cities. The fact that the largest cities of the island, San Jose and Calapan, have a population of less than 160000, proves this evaluation. Furthermore, Roxas, Mansalay, Rizal, Gloria, Pinamalayan, Victoria, Santa Cruz, Sablayan, Porto Galera, Mamburao, Paluan, San Teodoro and Pola are the other major settlements of the island of Mindoro (Helbling and Schult, 1997). Almost all of the large settlements are situated in the coastal parts of the island and almost all of them look like

[*] Corresponding author

underdeveloped towns (Fabinyi, 2018). Therefore, as we go from the coasts to the inner parts, both the population density decreases and infrastructure services such as transportation, communication, sewerage, highway, electricity and internet begin to fail. Since the central areas of the island are covered with very rugged terrain and dense tropical forests, they are the poorest, least populated and least developed areas of Mindoro (Atasoy and Atış, 2020).

Table 1. Main Characteristics of the Mindoro Island (Armacost, 1994)

Group Islands Located: The Luzon Group Islands	**Total Population:** 1,4 million
The Province: East Mindoro and West Mindoro	**Arithmetic Population Density:** 132 people/km^2
Number of Towns Embodied: 25	**Number of Barangays Embodied:** 590
Surface Area: 10 571,8 km^2 **The Highest Point:** Mountain Halkon (2586 meters)	**The Largest Settlements:** Calapan, San Jose, Roxas, Mansalay, Rizal, Gloria, Pinamalayan, Sablayan, Magsaysay, Victoria, Santa Cruz, Porto Galera, Mamburao, Paluan, San Teodoro.
Mathematic Location: 12^{o}07' – 13^{o}30' north latitude and 120^{o}18' – 121^{o}30' east latitude.	**The Longest River:** River Lumintao **The Largest Lake:** Lake Naujan **The Largest Province:** San Jose

The island of Mindoro is bordered by the island of Luzon in the north, the island of Marinduque in the northeast, the islands of Lubang, Golo and Ambil in the northwest, the islands of Tablas, Carabao, Boracay and Panay in the southeast, and the islands of Busuanga, Coron and Culion in the southwest. Minola, Balateros, Markoe, Big La Laguna and Batangas bays are situated in the north of Mindoro island, Bulalacao, Mangarin and Pandarochan bays in the south, Varadero, Mansiol, Cogolong, Colasi and Calapan bays in the east, Dongon, Paluan and Sablayan bays in the west. (Chirikov et al., 2008; Encyclopedia, 1935). The world-famous "Apo Marine Reserve", which is visited by thousands of divers every year is found to the west of the island of Mindoro. The Tablas strait, located east of the Mindoro island, separates it from the islands of Tablas, Marinduque and Banton. The Mindoro strait, located in the west of the island, separates it from the islands of Busuanga, Koron and Culion. In the south of the island are some small but touristic islands such as Ilin, Ambulong, Sibay, Semirara, Caluya and Liwagao. In the Verde strait, situated between Luzon and Mindoro, there are small islets such as Maricaban, Isla Verde, Baco and Silonay. Medio, Silonay and Paniguian located in the northeast of the island of Tablas Mindoro to the east of Mindoro, Ilin and Ambolong to the southwest, Buyayao, Alibatan, Aslon, Tambaron and Masin to the southeast, South Pandan and North Pandan to the west of Mindoro are the examples of small islets in the area Medio, Silonay and Paniguian situated in the northeast of Mindoro island; Ilin and Ambolong to the southwest; Buyayao, Alibatan, Aslon, Tambaron and Masin to the southeast; South Pandan and North Pandan to the west of Mindoro are examples of small islets located in the coastal shelf area of North Pandan Mindoro (Steere, 1891).

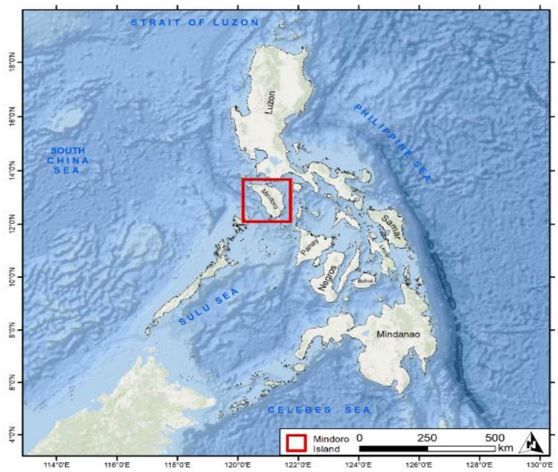

Figure 1. Location Map of the Mindoro Island

Table 2. Major Administrative and Geographical Features of the Occidental Mindoro Province (Amoroso et al., 2022)

Name of the Town	Population of the Town (Year 2020)	Surface Area (km^2)	Population Density (person / km^2)	Number of Barangays Embodied
Abra de Ilog	35 176	533.70	66	10
Calintaan	30 190	382.50	79	7
Looc	7 802	132.30	59	9
Lubang	17 437	113.10	154	16
Magsaysay	39 767	282.08	141	12
Mamburao	47 705	283.51	168	15
Paluan	18 566	564.50	33	12
Rizal	40 429	242.50	167	11
Sablayan	92 598	2188.80	42	22
San Jose	153 267	446.70	343	39
Santa Cruz	42 417	681.40	62	11
TOTAL	**525 354**	**5851**	**90**	**164**

In terms of administrative management, the island is divided into two provinces; East Mindoro (Oriental Mindoro) and West Mindoro (Occidental Mindoro) (Figure1). The population of the western Mindoro province exceeds 500000 and its capital is the city of Mamburao. The population of the eastern province of Mindoro exceeds 900000 and its capital is the city of Calapan. Occidental Mindoro province includes 11 counties and 164 barangays, whereas Oriental Mindoro province includes 14 counties and 426 barangays (Table 2 and Table 3).

The most important airports of the island are the San Jose Airport near the city of San Jose in the southwest of the island, the Mamburao Airport near the city of Mamburao in the northwest of the island, and the Calapan Airport near the city of Calapan in the northeast of the island. However, since these airports have regional importance and are not open to international flights, the foreign tourists cannot come directly to Mindoro by airline. Air connections via Manila and sea transport connections from the Batangas port are the most practical way to reach the island. The provinces of Oriental Mindoro and Occidental Mindoro are not among the most industrialized and most developed provinces in the Republic of the Philippines, nor are they among the poorest and most underdeveloped provinces. As seen in Table 2, in 2020, the Occidental Mindoro Province had an area of 5851 km^2 and a total population of 525 354. In this province, which covers a total of 11 towns, there is an average of 251 people per km^2. In the Occidental Mindoro Province, Sablayan (2188.80 km^2) is the largest town in terms of surface area, and Lubang (113.10 km^2) is the smallest district (Table 2). Furthermore, among these 11 towns within the provincial borders, San Jose has the highest population (153 267 people) and Looc (7 802 people) has the smallest population. San Jose has the most barangays (39), whereas Calintaan has the fewest barangays (7) (Table 2). San Jose, the province's most populous county, has the province's highest arithmetic population density (343 people/km^2). However, Paluan, which is the most mountainous, poorest and least developed town of the province, has the lowest arithmetic population density (33 persons/km^2) in the province (Table 2).

It is understood that in the Occidental Mindoro Province, only 1 town has a population of over 100000 and all 3 towns have less than 30000 people. As a result, Occidental Mindoro can be defined as a sparsely populated and poor state where rough terrain covers large areas, employment areas and transportation connections are insufficient, few settlements, tourism activities are not well developed (Santos and Tomeldan, 2009). In 2020, the Oriental Mindoro Province has an area of 4238 km^2 and a total population of 908339 people. In this province, which covers a total of 14 districts and 426 barangays, there are an average of 214 people per square kilometer.

In the Oriental Mindoro Province, the largest town in terms of surface area is Naujan (503.10 km2) and the smallest district is Roxas (85.26 km^2) (Table 3). Furthermore, Calapan (145786 people) with the highest population within the borders of the province, and San Teodoro (19121 people) with the smallest population. Within the borders of province, Calapan has the most barangays (62), whereas San Teodoro has the fewest barangays (8) (Table 3).

Table 3. Major Administrative and Geographical Features of the Province of Oriental Mindoro (Mendaña and Apritadom, 2021)

Name of the Town	Population of the Town (Year 2020)	Surface Area (km^2)	Population Density (person/km^2)	Number of Barangays Embodied
Baco	39 817	216.23	184	27
Bansud	42 671	343.47	124	13
Bongabong	76 973	498.20	155	36
Bulalacao	44 366	321.86	138	15
Calapan	145 786	250.06	583	62
Gloria	50 496	245.52	206	27
Mansalay	59 114	446.62	132	17
Naujan	109 587	503.10	218	70
Pinamalayan	90 383	282.26	320	37
Pola	35 455	159.34	223	23
Puerto Galera	41 961	247.85	169	13
Roxas	58 849	85.26	690	20
San Teodoro	19 121	341.00	56	8
Socorro	41 585	151.38	275	26
Victoria	52 175	146.23	357	32
TOTAL	**908 339**	**4238.38**	**214**	**426**

It is understood that only two towns in the Oriental Mindoro Province have populations exceeding 100000 and 7 towns have less than 50000 people. Roxas, which is one of the most developed counties in the province, is the county with the highest arithmetic population density (690 people/km^2) in the province. In fact, San Teodoro, one of the least developed towns of the Oriental Mindoro Province, has the lowest arithmetic population density (56 people/km^2) in the province (Table 3). As a result, the distance to the sea coast and main transportation routes, altitude and ruggedness, diversity of economic activities and settlement density are the most important factors designating the population density in Mindoro Island (Schult, 2001; Kulakova, 2015). Mindoro, the seventh largest island in the Republic of the Philippines, is a mountainous and rugged island mostly covered with rainforests and poor road routes. Therefore, plains and plateaus cover a very small area, while mountainous and high lands cover a very large area throughout the island. Two large mountain masses stand out on the island: one is Mount Halkon (2586 m.), situated in the northwest of the island, and the second is Mount Baco (2488 m), situated in the central parts of the island. The remaining parts of the island are covered with low hilly areas, tropical forests, stream valleys and fertile alluvial plains. The highest mountain masses of Mindoro island are: Mount Halcon (2586 m), Mount Baco (2488 m), Mount Wood (2020 m), Mount Sinclair (1870 m), Mount Patrick (1681 m), Mount Indie (1668 m), Mount Merril (1570 m), Mount Calavite (1520 m), Mount Tallulah (1488 m), Babuy Peak (1450 m), Mount Iglit (1432 m), Mount Roosevelt (1392 m), Mount Burburungan (1297 m) and Mount Malasimbo (1206 m). In other words, there are only 14 to 15 mountain masses higher than 1200 meters within the island borders (Villanueva and Buot, 2018). The plains of Calapan, Roxas, Rizal, Mamburao, Sablayan, San Jose and Paluan and the valleys of Bongabong, Bucayao Silonay, Tugulian and Lumintao constitute the most fertile agricultural lands on the island.

There are many streams in the island, which are short, have narrow valleys, are not suitable for transportation, and form deep gulfs at the river-mouth. In the northern and eastern parts of Mindoro island, there are streams such as Budburan, Bongabong, Bansud, Pula, Casiligan, Bucayao, Sumagui, Sukol, Malay, Tukuran, Abra de Ilog and Puluan. In the southern and western parts of the island, there are streams such as Tugulian, Mamburao, Maasim, Mimping, Pagbahan, Malom, Ramayan, Maslud, Amnay, Mongpong, Bucayao Silonay, Lumintao and Cagaray. Small dam lakes on some streams stand out. Not all of the streams on the island are suitable for river transportation. The Bongabong and Lumintao rivers are the longest rivers on the island (Steere, 1891). The entire island of Mindoro has a humid tropical-monsoon climate, but there are some climatic differences between the eastern and western parts of the island. In the eastern parts of the island, there is a certain amount of rain almost every month, so there is no distinct rain and no distinct dry season (Lemuel et al., 2021).

The western parts of the island have two more distinct seasons, summer and autumn — rainy, winter and spring — dry. Moist tropical and monsoon forests grow on the mountain slopes of the island, swampy areas and mangrove forests sometimes appear along the coast. Throughout the year, the island has high humidity, temperature, cloudiness and precipitation. The average annual temperature of the island is 27.68^{o}C and it is clear that it is 0.46^{o}C higher than the Philippines average. In Mindoro, the highest monthly average temperature was 30.68^{o}C in May, and the lowest monthly average temperature was 23.47^{o}C in February. As is clear, there is no great variation in temperature values throughout the year and there is only a 6-7 degree difference in monthly average temperatures.

On the island of Mindoro, 114 days (31%) rainy and 251 (69%) days without rain were recorded on average out of 365 days a year. The annual average precipitation amount falling on the island varies between 800 and 2900 millimeters according to the geographical location, and the humidity rate throughout the year has been identified as 77.55% on average. The least precipitation falls in March (19 mm) and the highest precipitation falls in December (163 mm) across the island. Generally, the driest period of the island is accepted as the monthly rainfall in the January-April period does not exceed 40 mm (Mape and Borja, 2021). Therefore, the foreign tourists planning a sea vacation usually visit Mindoro between January and April. In general, since the monthly precipitation in the July-December period varies between 90 mm and 163 mm, it is considered the most humid and rainiest period of the island. Therefore, those who want to visit the island should avoid visiting Mindoro during this period. In other words, when the climate characteristics of Mindoro island are examined, it is possible to claim that the most unfavorable period in terms of sea tourism is July - December with plenty of rain. However, since the island receives rainfall all year round, it is not possible to talk about a distinct "dry season" and a distinct "rainy season". On the fertile plains of Mindoro island, rice, maize, peanuts, bananas, cereal crops, sugarcane and coconut are commonly grown. Cattle breeding, poultry breeding and especially pig breeding are common, and small cattle breeding is almost non-existent. Furthermore, tungsten, gold, marble, copper and nickel mining and fishing are also common on the island. Even though Mindoro does not have very rich gold mines, the name of the island means "Mina de Oro" in Spanish, "Gold Mine". Despite the fact that mining is one of the most profitable economic investments on the island, it both damages natural ecosystems and forest lands, triggers serious ecological problems and indirectly affects tourism activities and public health on the island. Therefore, mining and tourism cannot be the sectors that will develop side by side in the long run (Santos and Tomeldan, 2009).

MATERIALS AND METHODS

In the present study, the demographic, economic, geographical and ecological characteristics of the Mindoro Island was examined, and both the tourism advantages and disadvantages as well as the tourism resources of the island were attempted to be identified. The author conducted city surveys and geographical observations on the Mindoro Island between 23 October – 20 November 2022; as a result, he personally examined majority of the tourism centers on the island. The methodological basis of the study is the methods of a systematic scientific approach (Figure 2), comparative geographical, cartographic and expert assessment (Dunets et al., 2020; Dmitriyev et al., 2021; Suleimenov et al., 2022; Khazai et al., 2018; Ozgeldinova et al., 2017). One of the primary objectives of this study is to proclaim the great tourism power of this small island to the world and promote the island in terms of international tourism.

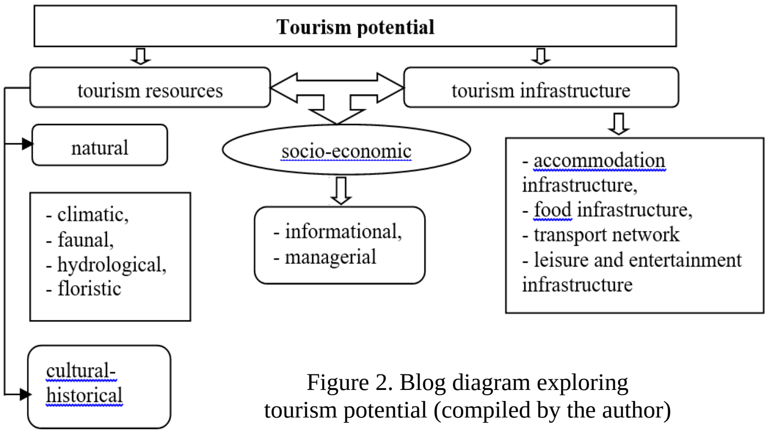

Figure 2. Blog diagram exploring tourism potential (compiled by the author)

Table 4. Top 20 Natural and Cultural Tourism Attractions of the Mindoro Island (Source: Authors, 2022)

Top 20 Natural Tourism Attractions of the Mindoro Island	Top 20 Cultural Tourism Attractions of the Mindoro Island
White Beach	Hanging Bridge of San Agustin
Lake Naujan	Bancuro Church Ruins
Apo Reef Nature Park	Sto. Nino Catholic Cathedral
Puerto Galera Mangrove Conservation	Tukuran Hanging Bridge
Tamaraw Waterfall	Oriental Mindoro Heritage Museum
Takipanan Beach	Mangyan Village
Mouth Halcon	St. Joseph Cathedral
Tribalhills Nature Park	San Jose Municipal Plaza
Mount Calavite Wildlife Sanctuary	St. John the Baptist Church
Sabang Beach	Sablayan Museum
Buyayao Island	Calapan City Plaza
Mount Iglit-Baco National Park	Grace Island Resort
Siburan Rain Forest	Calawagan Mountain Resort
Inasakan Beach	Simbahang Bato
Tukuran Waterfall	Jolly Waves Waterpark & Resort
Aninuan Beach	Iglesia Ni Cristo - Lokal ng Calapan
Alibatan Island	Bansud Municipal Park and Plaza
Tribalhills Nature Park	Lamando's Clan Family
Talon Waterfall	Capitol Children's Park
Haligi Beach	Kambal Bato Mountain Resort

A comprehensive assessment of the tourist and recreational potential of the island based on the study included the following steps. First stage. Identification of parameters for assessing an object in the blocks "natural conditions and resources", "cultural and historical resources", "security of tourist infrastructure", "information security of tourism". Second stage. Collection of information necessary for the assessment. Processing of information from statistical documentation of local tourism management bodies. Study of hotels, sights, leisure and recreation infrastructure, transport support. Third stage. Bringing the obtained indicators of evaluation criteria to a single measurement system. The weighting coefficients are calculated. Further, the calculation of private indicators of the tourist and recreational potential is carried out: natural conditions and resources, cultural and historical resources, provision of tourist infrastructure, information provision of tourism (Dmitriyev et al., 2022; Ocampo, et el., 2018; Suleimenov et el., 2022; Ibrahim et el., 2021; Ilies, et el., 2017).

RESULT AND DISCUSSION

Undoubtedly, the tourism sector is the most important economic sector, the most important employment area and the most important source of income for the island population. Mysterious caves, high waterfalls, clean beaches, high mountains, national parks with high biodiversity, lakes with interesting fish and coral reefs with hundreds of living species make the island of Mindoro attractive and interesting. Being close to the island of Luzon and the capital Manila, as well as having ferry connections with the islands of Tablas, Panay, Luzon, Coron and Romblon, is a great advantage for the Mindoro island both in terms of tourism and transportation. The Mindoro coasts are also one of the Philippines' most popular diving destinations. "Hole in Wall", "Aninuan Reef", "Giant Clams" and "Sabang Wreck" are among the most popular places by divers on the coasts of Mindoro. There are hundreds of beaches on the island but the most famous and popular ones are: “White Beach”, “Aninuan Beach”, “Small La Laguna Beach”, “Big La Laguna Beach”, “Aroma Beach”, “Tamaraw Beach”, “Haligi Beach”, “Pebble Beach” and “Sabang Beach”**.

Table 5. The most interesting cultural tourism attractions in the Mindoro Island and its surroundings (Source: Authors, 2022)

Natural Tourism attractiveness	Geographical Location or Touristic Center
Nature reserves	Lake Naujan National Park, Iglit-Baco Mountain National Park, Tribalhills Nature Park, Mount Calavite Wildlife Sanctuary, Apo Reef Natural Park, Mansalay Fish Sanctuary, Dao Waterlily Park, Bancuro – Naujan Bird Observatory, Infinity Farm Natural Park, Silonay Mangrove Conservation Ecopark, Wawa Mangrove Conservation Area.
Tourist beaches	Sabang Beach, La Laguna Beach, White Beach, Haligi Beach, Aninuan Beach, Inasakan Beach, Pebble Beach, Tamaraw Beach, Talipanan Beach, Aroma Beach, Encenada Beach, Long Beach, Tayamaan Beach, Dulangan Main Beach, Bayanan Beach, Balete Beach, Encenada Beach, Sablayan Beach, Maasin Beach Resort, Balatasan Beach Resort, Buktot Beach, Sunrise Beach Resort, Amor Beach Resort, Sikatuna Beach, Lush Green Camp & Resort, Matala Beach, Fridays Boquete Beach, Sibalat Beach, White Lady Resort, Pocanil Beach Resort, LM Beach Resort, PGD White Sand Beach Resort, Lou Bamboo Beach Resort, Costa Del Eve Beach Resort, Mampusti Beach, Bighani Beach Resort, Royal Splash, Blanco Beach Resort, Pili Beach Pinamalayan, Polacay Beach, Papangkil Beach, Estrella Beach Bay, Suki Beach, Lambingan Beach, Wawa Beach Front, Abra De Ilog Beach.
Tourist caves	San Rafael Cave, Minolo Cave, Akulya Underwater Cave, Balatero Cave, Malabiton Coral Cove, Underwater Sea Cave, Luyang Baga Cave.
Mangrove Forest Areas	Silonay Mangrove Conservation Area and Ecotourism, Puerto Galera Mangrove Conservation, Wawa Mangrove Conservation Area, Maidlang Mangrove and Beach Forest Reserve.
Impressive waterfalls	Marayos, Cawa-Cawa, Tukuran, Gumaer, Tamaraw, Talipanan, Arapay, Aninuan, Walang Langit, Gumaer, Botolan, Talon, La Pantay, Agbalala, Bisay, Tabocaya, Calawagan, Corralmo, Tangisan, Aras, Malatung-Tong, Cabacungan, Papali.
Interesting hydrographic formations	Mantangkob River and Different Rock Formation, Lake Libuao, Lake Naujan, Sonaport, Lake Fishponds Lagoon, Babahurin Mountain River, Enchanted Bato Creek, Dangare Vista Hill, Acapulco Spring Resort, Tabinay Cold Spring, Hydro – Paitan, Misong Taguan Najuan Oriental Minduro.
Interesting geomor-phological formations	Mindoro Pines, Mount Calavite, Mount Halcon, Mount Baco, Lake Naujan View Park, San Teodoro Boardwalk, Devil's Mountain View, Mindoro Pines, Sablayan Prison And Penal Farm.
Small tourist islets	Apo, Ilin, Masin, Alibatan, Sibalat, Aslom, Ambulong, Buyayao, Panaquian, Medio, Silonay, Pandan, Horca Piloto, Baco Chico, Plong Gitna, Pulong Munti, Garza, Semirara, Libagao, North Pandan, South Pandan.
Recreation center or tourist park	Bulusan Park, Naujan Park and Plaza, Antonino Plaza, Babangonan Plaza, Infinity Farm, Bansud Municipal Park and Plaza, Labasan Seaside Baywalk, Capitol Children's Park, Lamando's Clan Family, Magsaysay Municipal Plaza, San Jose Baywalk, Bantayog-Wika para sa Mangyan, Bato-Ili Mangyan Community, Sablayan Parola Park, Camp Pitogo, Pinamalayan Park, Heritage Park – Rizal, Sophia's Garden, San Jose Municipal Plaza, Water Garden – San Jose, Montelago Hot Spring, Verde Island Purifiers.
Faith centers and churches	Holy Spirit Parish, St. John the Baptist Church, Masjid Al-Rahma Mosque, Masjid Al-Falaq Mosque, St. Joseph Parish Church – Paluan, Wawa Catholic Church, Aninuan Muslim Compound, Puerto Galera Church, Holy Family Parish, Iglesia Ni Cristo - Lokal ng Malamig, Saints Peter and Paul Mission Area, Santo Niño Cathedral, Jamia Asmaa Hudaya – Puerto Galera, St. Jose Parish Church – San Jose, Sumagui Seventh-day Adventist Church, Proper Bansud Catholic Church.
Botanical gardens and agro-tourism centers	Sibayan Red Farm, Artimisium Farm, Faith Paradise Agri Tourism Farm, Sibayan Red Farm, Tagpuan sa Garden, Lamando's Clan Family, Paclolo Sunflower Farm, Love Hidden Farm, Argel Farm And Resort, Runas Mini Garden, Villa Irosin Farm Resort, Tabing - Ilog Farm Tourism, ock of Hope Tomoco's Farm Resort.
Historical monuments and museums	Simbahang Bato, Oriental Mindoro Heritage and Cultural Center, Sablayan Museum, Nicolas Heights, Mindoro Landing Monument, Mindoro Biodiversity Conservation Center, Bulalacao Tourism Cum Heritage Center.
Education, science, sports and cultural centers	Mindoro State University, Mindoro State College of Agriculture and Technology, Eastern Mindoro College, Occidental Mindoro State College, Occidental Mindoro National College, Divine Word College of San Jose, Occidental Mindoro National High School, Ponderosa Golf Club, Malasimbo Music & Arts Festival, Extreme Sports Puerto Galera, Boquete Tennis Village, Prince of Peace College, Puerto Galera Academy, Glare Swimming Pool, Immaculate Heart of Mary Academy, The Narra Spring Resort, Acapulco Spring Resort, Sablayan Sports Complex, Mindoro Bible College, Saint Anthony College of Science and Technology, Divine Word College of Calapan.
Diving training centers	Action Divers, Sea Rider Dive Center, Asia Divers, Scuba For Change, Dive With Super J, Frontier Scuba, Pacific Divers, South Sea Divers, Badladz Scuba Diving, Arkipelago Divers, EACY Dive School, Octopus Divers, Sabang Fun Divers, Diving Puerto Galera, Scandi Divers, Sablayan Divers, Mermaid Dive Resort, Enjoy Divers, Izakaya Palm Divers Tropicana Dive Center, Payapa Divers, Guli Divers, Sabang Dive Center, Fridays Diving Center and French Touch Divers.

There are many stream valleys, canyons and waterfalls on the island of Mindoro. The most visited waterfalls by foreign tourists are: Marayos, Cawa-Cawa, Tukuran, Tamaraw, Talipanan, Arapay, Aninuan, Papali, Agbalala, Bisay, Calawagan, Malatung-Tong and Cabacungan (Table 4). The lack of basic human services such as markets, restaurants, accommodation facilities, tourism offices and bus connections near these waterfalls is a major tourism disadvantage.

Tourists visiting the Mindoro island can take private lessons at diving schools and get acquainted with the rich underwater world of the region. The most popular diving schools on the coasts of Mindoro are: Action Divers, Sea Rider Dive Center, Asia Divers, Scuba For Change, Dive With Super J, Frontier Scuba, Pacific Divers, South Sea Divers, Badladz Scuba Diving, Arkipelago Divers, EACY Dive School , Octopus Divers, Sabang Fun Divers, Diving Puerto Galera, Scandi Divers, Sablayan Divers, Mermaid Dive Resort, Enjoy Divers, Izakaya Palm Divers Tropicana Dive Center, Payapa Divers, Guli Divers, Sabang Dive Center, Fridays Diving Center and French Touch Divers (Safina, and Amosova, 2017).

Mindoro island has very rich touristic resources in terms of geomorphological, ecological and hydrographic, archaeological and historical, architectural and cultural tourism attractions (Figure 3). Below (Table 5), the most interesting natural tourism and cultural tourism attractions in Mindoro island and its surroundings are compiled separately.

The most important tourism attractions in the Mindoro island and its surroundings and those listed above were explicated below under the headings of "touristic cities", "national parks" and "accommodation facilities".

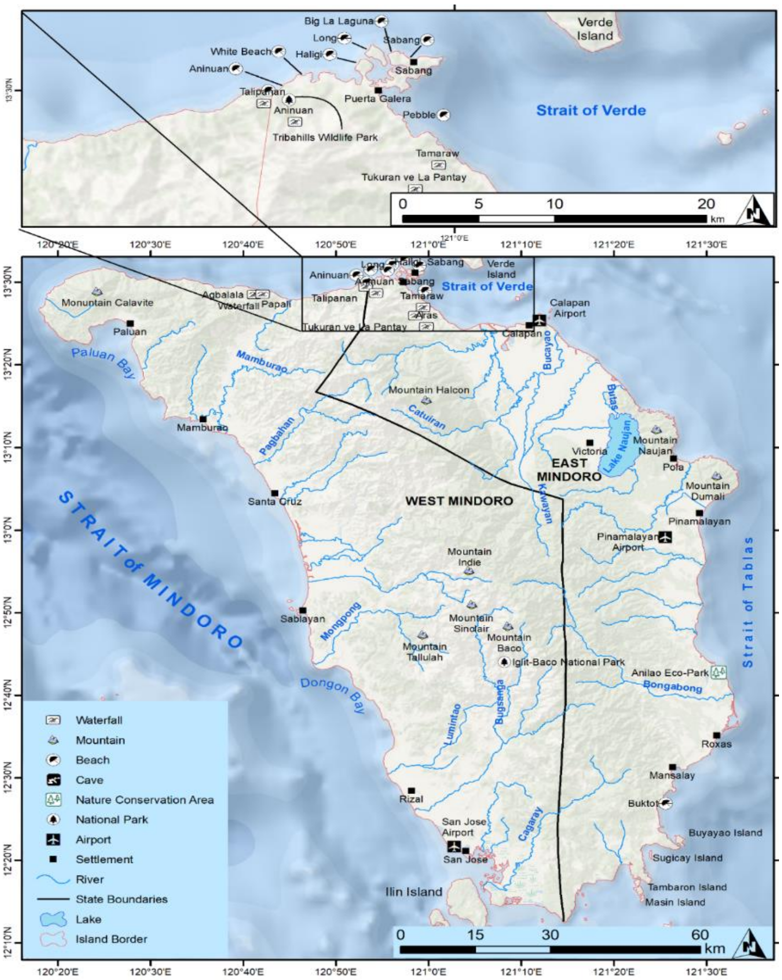

Figure 3. Tourism Map of the Mindoro Island (Source: Authors, 2022)

Puerto Galera

In the Philippines, Puerto Galera is both a lively town, a town center, a busy port and a world-famous tourism center. However more importantly, Puerto Galera is a very meaningful term used to describe hundreds of different elements in the geography of the Philippines. There are many hotels, streets, commercial centers, villas, hostels, educational institutions, health institutions, churches, museums, restaurants, bars, massage parlors, markets, streets, pharmacies, restaurants, etc., bearing the name Puerto Galera within the borders of Mindoro island. Puerto Galera, situated on the northeast coast of Mindoro island, has many beautiful coves and is both Mindoro's most visited tourist town and one of the most popular diving destinations.

With a population of approximately 40000 people, Puerto Galera has many sea creatures living in its waters and there are many beaches, restaurants, hotels, diving schools and entertainment venues near the town. The underwater caves around the town, beaches and sunken ships at the bottom of the sea attract the attention of divers to these coasts. Puerto Galera is the most famous place on the island with its clean and quiet pocket beaches, fun bars, snorkeling and scuba diving spots. “White Beach”, “Aninuan Beach”, “Sabang Beach”, “Dulangan Beach”, “Haligi Beach” as well as “Big La Laguna” and “Small La Laguna Beach” are the most visited beaches by the local and foreign tourists near the town.

In summary, Puerto Galera is both the tourism capital and the most visited town on the island of Mindoro (Muyot, 2022). Puerto Galera is 130 km from the capital Manila and only 51 km from the provincial capital of Calapan. Ferry services between Batangas and Puerto Galera are of great importance for the tourism development of the Mindoro Island. In the immediate vicinity of Puerto Galera, there are many tourist attractions that attract the attention of local and foreign tourists. “Puerto Galera Mangrove Conservation Ecological Park”, “Talipanan Beach”, “Tamaraw Falls”, Medio and Paniquian islands, “White Beach”, “Sabang Beach”, “Tabinay Cold Spring”, “Talipanan Falls”, “Puerto Galeta Catholic Church”, “Minola Bay” and “Aninuan Beach” are the most popular tourist attractions in Puerto Galera area to see Table 4.

If the tourists visiting Puerto Galera fancy a quieter and more peaceful rural environment or wish to have a holiday in serene and clean sea coves intertwined with nature, they can choose one of the beaches such as “Pebble Beach”, “Aplayang Munti”, “Dulangan Beach” or “Bulabod Beach” which are very close to the town center. For those who wish to get away from the crowded settlements, the noisy traffic and the tourist-filled bars, these quiet coves and clean beaches may be just the tropical paradise they've been looking for. Puerto Galera is the busiest region of Mindoro Island in terms of number of touristic facilities and variety of accommodation. “AV Suites”, “Atlantis Dive Resort”, “Steps Garden Resort”, “Garden of Eden Dive Resort”, “Utopia Resort & Spa”,” Infinity Resort”, “Lalaguna Villas Luxury Dive Resort & Spa”, “Edgewater Dive” & Spa Resort”, “Manarra Sea View Resort”, “Nirvana Resort”, “Jalyn's Resort”, “Lalaguna Villas Luxury Dive Resort and Spa”, “Badladz Beach and Dive Resort”, “The Mang-Yan Grand Hotel by Cocotel Powered ”, “Casalay Boutique Villas & Dive” and “Out of the Blue Resort” are the most prestigious and luxurious accommodation facilities in Puerto Galera region. The most important common feature of these listed hotels is that most of them are high-priced beach hotels that appeal to high-income groups. Furthermore, among these accommodation facilities, only the “AV Suites” is included in the group of five-star hotels. In a nutshell, Puerto Galera is not only the most popular tourist destination on the island of Mindoro, but also the region with the most hotels and accommodation facilities.

Nevertheless, even though there are more than 200 accommodation facilities in this region, the lack of five-star hotels is a major drawback in terms of international tourism. Furthermore, the concepts of tourism activity and nature protection are two conflicting concepts. Puerto Galera: As the number of touristic facilities in the Sabang region increases and the number of tourists intensifies, it is seen that the environmental problems in the region increase exponentially. Puerto Galera: Preserving the sea corals on the Sabang coast and leaving them as an ecological legacy without destruction for future generations should be the primary task of today's generations and today's Philippine administrators.

The City of Calapan

The city of Calapan is both the largest and busiest port on the island of Mindoro, the administrative center of the MIMAROPA District, and the capital of the Oriental Mindoro province. The city of Calapan is not only the most strategic and largest commercial, industrial, transportation, art, culture, science and education center of the Oriental Mindoro province, but also the only urban settlement within the provincial borders. Other large settlements within the provincial borders (Roxas, Pola, Pinamalayan, Puerto Galera, Mansalay etc.) do not have the official city status even though they are populated settlements. Calapan is surrounded by the Bay of Calapan to the north and northeast, Naujan county to the south and southeast and Baco county to the west (Hernandez, 1988). In the Calapan region, the Malaylay, Baruyan, Silonay and Baco rivers discharge their waters into the sea. Thus, the alluvial soils accumulated by these rivers, the swampy lands they form and the wet plains suitable for rice farming are the most common geographical elements seen around the city.

The fact that the Calapan region is one of the top quality and largest rice production areas of the Philippines is due to these geographical features (Estoque et al, 2018). Calapan is situated 45 kilometers southeast of the city of Batangas and 130 kilometers south of Manila. The city of Calapan has an area of 250 km2 and consists of 62 barangays, 22 of which are classified as urban and 40 of which are classified as rural. Marshe s and mangrove forests are possible to see in the coastal areas of the city, which situated on a wide and fertile plain. Calapan, which was a small town with a population of 33000 in 1960, managed to increase its population to 67000 in 1980, 106000 in 2000 and 145000 in 2020 as a result of high fertility and intense migration (Lemuel et al., 2021). Today, Calapan is one of the two largest cities on the island of Mindoro, along with San Jose, which has a population of more than 150000.

Food and canned food industry, clothing and textile industry, chemical and machinery industry, crop production, livestock and fishery, communication and port activities, furniture and rice production are the most important economic activities of the city of Calapan. Bananas, coconuts, rice, mangoes, citrus fruits and various tropical fruits are widely grown in the fertile Calapan plain. There are regular sea transportation services for 12 months between the Port of Calapan and the Batangas International Port on the island of Luzon. The city of Calapan also has a regional-scale airport and has regular air transport links with Ninoy Aquino International Airport in the capital, Manila. Calapan is not a typical tourist town, nor is it one of the Philippines' most popular holiday destinations.

However, there are many waterfalls, beaches, nature reserves, caves, botanical gardens, mangrove forests, lakes, spa centers and interesting touristic small islets around the city (Table 6). The islands of Baco-Chico, Horca-Piloto and Silonay, situated close to the city of Calapan and easily accessible by cheap boat tours, are among the most popular islets for one-day picnics and beach holidays. Furthermore, the "Silonay Mangrove Conservation Area and Ecotourism", which is an example of the Philippines' most interesting and best preserved mangrove forests, is found just east of the city of Calapan and is visited by thousands of tourists every year. Calapan is famous in the Philippines as both the country's rice export champion and the city of festivals. The “Kalap Festival”, “Sto. Niño de Calapan Festival”, “Sinkaw Festival” and “Mardigras Festival”, celebrated regularly every year with the participation of both local and foreign tourists, are the most vigorous and well-attended tourist festivals of Calapan. There are many motels, hostels, villas, hostels and hotels suitable for every budget in the city of Calapan. Among the most popular and interesting accommodation facilities in the rural vicinity of Calapan are the “Coco Farm Resort”, “Infinity Farm Resort”, “Jessstar Resort Malamig Calapan City”, “Eduardo's Resort”, “Jolly Waves Waterpark & Resort”, “Kambal Bato Mountain Resort” and “El Pueblo Rhizort”. Those who wish to have a peaceful holiday among the natural rainforests in a quiet environment can prefer one of these accommodation

Table 6. The most popular tourist centers in the city of Calapan and its surroundings (Source: Authors, 2022)

Caluwangan Cave	Horca-Piloto sand beaches
Suqui Beaches	Jolly Waves Waterpark & Resort
Baco-Chico Island	Silonay Mangrove Conservation Area
Rizal Park	Calapan City Museum
Halhal Cave	Bulusan Nature Park
Caluangan Lake	Holy Infant Cathedral
Silonay Island	Santo Nino Cathedral
Parang Beaches	Oriental Mindoro Heritage Museum
Balite Beaches	Maidlang Mangrove and Beach Forest Reserve
Dambana ni jesus	Czeascape Beach Resort
Calapan City Plaza	Mangyan Heritage Center
Aras Cave - Baco	Calapan City Zoological and Recreational Park
Infinity Farm Resort	Wakeboarding at Calapan Aqua Park

facilities. Among the top quality accommodation facilities in the city center of Calapan are the "Vincios Hotel & Restaurant", "Sunshine Beach Resort", "Filipiniana Hotel Calapan", "Calapan Holiday Resort", "NutriTECH Hotels & Events", "Casa Estela Boutique Hotel & Cafe", "Hotel Metropolis" and "Mahalta Resorts and Convention Center".

The City of San Jose

San Jose, situated in the Occidental Mindoro province of the Philippines, is the largest and most populated settlement on the island of Mindoro, together with Calapan. This port city housing 153267 according as the 2020 census, represents one-third of the province's population and is the largest of any city in the MIMAROPA region (excluding Puerto Princesa city). As of May 2, 2019, the city of San Jose was politically divided into 39 barangays (San Jose, Province of Occidental Mindoro**). San Jose county is bordered by Rizal and Calintaan provinces to the north, Mansalay and Bulalacao provinces to the east, the Mangarin Strait and Magsaysay province to the southeast, and the Mindoro Strait to the west. Ambulong and Ilin Islands are also found within the San Jose County boundaries. San Jose, situated on the southwest coast of Mindoro island, is 173 kilometers from the provincial capital, Mamburao (Chirikov et al., 2008).

This vibrant city has the largest commercial port and busiest airport in the province of Occidental Mindoro. It is also the city with the highest number of banks, workplaces, transportation and trade establishments among all settlements within the borders of the province. Therefore, the city of San Jose is considered the economic, cultural, transportation and commercial heart of Southern Mindoro (Table 7). The main exports of the city include rice, salt and processed fish. This strategic city has been one of the cities with the fastest growing and fastest economic development on the island of Mindoro in the last 20-30 years. The city of San Jose was ranked 13th for "overall competitiveness" among the Philippine local government units in the 2017 Cities and Municipalities Competitiveness Index.

The territory of the city of San Jose has fertile plains that are fragmented by numerous stream valleys. A wide variety of agricultural products are grown on these fertile plains, especially corn, coconut, banana, garlic, rice, tropical fruits and root crops. Rice production and rice trade are very developed in the city (Andriesse, 2018). The aquaculture, poultry, cattle, shrimp, egg and fish trade is also very common in San Jose. Mining industry, furniture production, canning and food industry, milk production, seafood production and textile industry are the most developed economic branches of San Jose.

Table 7. The most popular tourist destinations in and around the City of San Jose (Source: Authors, 2022)

Aroma Beach	Mindoro Landing Monument
Galleria Onal	Bantayog-Wika para sa Mangyan
Ilin Island	San Jose Municipal Plaza
Madam G	Caminawit Pioneer Memorial Church
Sophia's Garden	Biggy's River Resort
Bubog Beach	Argel Farm And Resort
Ambulong Island	Magsaysay Town Plaza
Inasacan Beach	Site of Southern Mindoro Academy
Acacia Park	Central Heritage Park
Garza Island	San Isidro Labrador Church
Grace Island Resort	St. Joseph Cathedral
Murtha Airfield	Archaeological Site at Sitio Bubog
Love Hidden Farm	Lighthouse at Ambulong Island
Devil's Mountain View	Adoration Chapel of Iling Proper
Statue of Liberty	Santisima Trinidad Church

Even though the city of San Jose and its surroundings are not among the most popular tourist destinations in the Philippines, they do have many interesting tourist attractions. Small tropical islets, Catholic churches and historical buildings from the Spanish era, beaches and coves suitable for sea tourism, interesting bridges, monuments and museums are the major tourist attractions that draw the foreign tourists. The islands of Ilin, Ambulong, Garza, and Manadi, located just south of San Jose and easily accessible by inexpensive boat tours, are among the most popular tourist destinations for a day-long beach vacation. Even though there are many accommodation facilities in San Jose city center, "Sikatuna Beach Hotel", "Seasons Hotel And Convention Center", "Villa Enriquez", "Sikatuna Town Hotel", "Mindoro Plaza Hotel", "SJ Mansion Hotel" and "Beachfront" Bed & Breakfast" are the most popular ones.

Mount Iglit-Baco National Park

"Apo Reef Nature Park", "Naujan Lake National Park" and "Iglit-Baco Mountain National Park" are among the most important nature conservation areas of the Mindoro Island and Philippines. Iglit-Baco Mountain National Park (Nailian a Parke ti Banbantay Iglit-Baco), one of 35 National Parks within the borders of the Republic of the Philippines, is one of the largest protected areas of both the Mindoro island and the country, covering an area of 754.55 km².

The National Park, situated in the central part of the Mindoro Island, was founded in November 1970 and is situated on the territory of East Mindoro and West Mindoro provinces. The National Park area embodies eight river basins, as well as numerous mountains, plateaus, steep slopes, hills and deep valleys. In the National Park area dominated by the mountainous and rugged lands and tropical forests, there are high mountains such as Wood (2005 m), Bako (2488 m), Tallulah (1488 m), Sinclair (1846 m.) and Indie (1645 m) (Hernandez, 1988). The longest streams of the island of Mindoro, such as Mongpong, Bongabong, Mag-Asawang Tubig, Lumintao and Panggalaan, take their source from this park area and start their long river journeys by flowing towards the sea. The National Park area is home to an endemic Tamaraw species, a hoofed mammal known as "Bubalus Mindorensids"**. In fact, the main reason for the foundation of the Iglit-Baco Mountain National Park is to conserve and sustain these interesting and rare animals.

The National Park is also home to a wide variety of wildlife, different bird species and interesting plants (Gonzales and Dans, 2001). There are many tourist attractions in the Iglit-Baco Mountain National Park and its immediate surroundings. "Tangisan Falls", "Tamaraw Gene Pool", "Panikian Lake", "Tagpuan sa Garden", "San Rafael Cave", "Bato Bansud", "Bansud Municipal Park and Plaza", "Villa Prescilla Mountain View Resort", "Xiemomo Park", "Hidden Paradise", "Enchanted Bato Creek", "Dangare Vista Hill", "Libao Lake", "Papweke Cave" and "Magtangcob Station" are examples of these tourist attractions situated close to the National Park.

Lake Naujan and Naujan National Park

Lake Naujan, situated in the northeast of Mindoro Island, is the fifth largest lake in the Philippines. Naujan, found east of the town of Victoria, northwest of the town of Pinamalayan and southeast of the city of Calapan, within the eastern Mindoro provincial borders, is a tectonic lake in terms of formation features and the maximum depth of the lake bowl is 45 meters. The only outlet or only sea connection of the lake, which has fresh waters, is the Butas River, which flows to the north. The area of the lake is 81 km^2 and the total area of the lake basin is around 300 km^2. While the length of the lake in the north-south direction is 14 kilometers, its width in the east-west direction is 7 kilometers. Numerous streams and creeks drain off into the lake, while the Butas stream in the north is the only stream fed by the lake waters and carries the Naujan waters to the ocean.

It is understood that there are many Naujan geographical concepts in the Philippines, since the town of Naujan is located to the north of the lake and the Naujan mountain is located to the east of the lake basin. There are many hot springs on the eastern shores of the lake. There is no large lake basin on the island of Mindoro, except for Naujan. Baruyan, Libao, Malibago, Patay na Ilog and Caluangan are the examples of other lakes on the island. Naujan, which is under RAMSAR protection, has been in National Park status since 27 March 1956. The area of Naujan National Park is 216.5 km^2, spread over the territory of four municipalities. Naujan National Park offers a wealth of opportunities for scientific research by ornithologists, botanists and zoologists. Naujan National Park offers a wealth of opportunities for scientific research of ornithologists, botanists and zoologists. Especially with its rich fish and bird diversity, the lake attracts the attention of both tourists and scientists. Philippine duck, black-crested bird, Mindoro spotted pigeon, Mindoro royal pigeon cockatoo, rhinoceros, ash thrush are the most interesting bird species of the National Park (Naujan Lake National Park**). Naujan National Park offers natural environments suitable for various recreational activities such as picnics, fishing, swimming and water sports. The tourists visiting the Naujan National Park can also visit the nearby towns of Victoria, Sokorro, Pinamalayan, Pola and Naujan. “Polacay Beach”, “Tagumpay Gravel Sand Beach”, “Misong Taguan”, “Montelago Hot Spring”, “Castilio Sa Papangkil Beach”, “Dao Waterlily Park”, “Simbahang Bato”, “Naujan”, which are also close to the lake basin, as well as the tourist centers such as Monument”, “Sibayan Red Farm”, “Naujan Lake View Park” and “Naujan Park and Plaza” can also be visited by the tourists.

Mount Calavite Wildlife Sanctuary

The Mount Calavite Wildlife Sanctuary, established in 1921, is situated in the northwest of Mindoro Island and is one of the oldest nature reserves in the Philippines. Mount Calavite is the highest point of this sanctuary, whereas the Binuangan river is the longest stream of the reserve. The Calavite mountain, located in the Paluan bay and northwest of Paluan town, is 1521 meters high and is situated on the Calavite peninsula of the same name. The sanctuary situated within the municipality of Paluan and northwest of the city of Mamburao, the capital of West Mindoro province, covers almost the entire Calavite peninsula (Canoy, 1980). The Verde strait, situated in the north of the Calavite Mountain Wildlife Sanctuary, formerly called Paluan National Park, separates the Calavite peninsula from the Lubang and Golo islands. The Calavite peninsula is one of the rare areas of our planet inhabited by Philippine dwarf buffaloes. The Mount Calavite Wildlife Sanctuary, founded as a bird sanctuary in 1920, today covers an area of 18016 hectares. There are many endemic plants and animals within the boundaries of the sanctuary. Visitors to the Calavite Sanctuary should also visit the interesting nearby attractions such as “Calawagan Mountain Resort”, “White Stone Beach Resort”, “I Love Paluan Landmark” and “Agbalala Water Falls”.

Mindoro Island Accommodation Facilities

Mindoro, one of the most important marine tourism centers of the Republic of the Philippines today, attracts thousands of domestic and foreign tourists every year with its natural beauties, interesting botanical gardens, pristine tropical forests, authentic resorts, majestic waterfalls, touristic parks, mysterious caves, scary deep valleys, white sandy beaches and desolate cute islets. There are more than 550 accommodation facilities that are suitable for all budgets and vary widely throughout the island. It is even possible to claim that the abundance of economically priced accommodation facilities (more than 400 in total) offers a great tourism advantage to the island of Mindoro. Puerto Galera–Sabang, Calapan–Pinamalayan, Bulalacao–San Jose, Roxas–Mansalay, Paluan–Mamburao and Sablayan–Santa Cruz regions are among the geographical locations where accommodation facilities are most concentrated throughout the island. For the convenience of tourists visiting the island, the most popular accommodation facilities in these regions are listed below (https://www.agoda.com/tr).

The most popular beach hotels in Puerto Galera - Sabang Area:

“Ocean Place Dive Resort”, “Badladz Beach and Dive Resort”, “Answer Hotel”, “Le Manoir des Bougainvilliers”, “Nirvana Resort”, “The Manor at Puerto Galera”, “Fisherman's Cove Resort and Diving Center”, “Utopia Resort & Spa”, “Dolphinbay Beachfront Resort”, “Blue Crystal Beach Resort”, “PG Island Dıvıng Resort Hotel”, “Edgewater Dive & Spa Resort”, “Garden of Eden Dive Resort”, “Oriental Sabang Hill Resort”, “Seashore Beach Resort”, “Garden of Eden Dive Resort”, “Blue Water Resort”, “Mountaın Vıew Eco Park and Events Place”, “Hillside Resort Sinandigan”, “La Laguna Beach Club & Dive Centre”, “Banana Moon Beach Resort”, “Arkipelago Divers & Beach Resort”, “Blue Lagoon Dıve Resort”, “El Galleon Dive Resort”, “Capt'n Greggs Dive Resort”, “Red Coral Beach Resort”.

The most popular beach hotels in White Beach -Talipanan Region:

“The Mang-Yan Grand Hotel by Cocotel Powered by Fave”, “Crystal's Palace”, “Casa Bella Villa”, “White Beach Resort”, “Orient De Galera Beach Resort”, “Hollywood Palm Beach Hotel and Resort”, “Rem's Hotel”, “Villa Guada Whitebeach by Building Green”, “Villa Lato Montagna Resort”, “ZEN Rooms Delgado”, “Summer Connection Beach Resort”, “White Beach Hotel Bar & Restaurant”, “Medelaine's Beach Resort”, “Mindorinne Oriental Beach Resort”, “Sunset at Aninuan Beach Resort”, “Tamaraw Beach Resort”, “Tribal Hills Mountain Resort”, “AV Suites”, “Veronica's

Inn “Amami Beach Resort”, “Infinity Resort”, “Sunny Beach Resort”, “Joan Beach Resort”, “Deluna Diving Resort”, “El Canonero Diving Beach Resort”, “Talipanan Beach Puerto Galera”.

The most popular beach hotels in Calapan – Pinamalayan District:

“Jamilla's Private Pool Resort”, “Bali Beach Resort Mindoro”, “Hiraya Farm and Resort”, “Seacliff Suites Hotel & Resort”, “Aplaya de Analiza Hotel”, “The Sanctuary By Positadi”, “El Dionisio”, “Mahalta Resorts and Convention Center”, “Donnyland Beach Resort”, “Calapan Bay Hotel”, “Tree of Life Business Center”, “Casa Estela Boutique Hotel & Cafe”, “Filipiniana Hotel Calapan”, “Hotel Metropolis”, “El Pueblo Rhizort”, “Calapan Holiday Resort”, “Kambal Bato Mountain Resort”, “Lush Green Camp & Resort”.

The most popular beach hotels in Roxas – Mansalay Region:

“MB Hiraya Beach Resort”, “Ern Suıtes”, “LaSersita Casitas and Water Spa Beach Resort by Cocotel”, “Costa Del Eve Beach Resort”, “Mahalta Glamping Resorts and Leisure Farm”, “L.D. Ignacio's Island Resort”, “Mahalta Glamping Resort”, “JMD Hotel and Restaurant”, “La Primera Grande Beach Resort”, “Kamayan Beach Resort”, “Paraiso De Oro Beach Resort”, “Anilao Eco Park”, “Jopat's Hotel & Resort”, “KW&E Hotel”, “Prisville Triangle Resort”.

The most popular beach hotels in Bulalacao – San Jose Neighborhood:

“Panganiban Resort”, “Biggy's River Resort by Cocotel”, “Caniwal Resort”, “De Kack's Private Resort”, “Villa Paulina Spa and Resort”, “Lanada Resort”, “Glendenning Hotel and Resort”, “Aroma Family Hotel and Resort Complex”, “Seasons Hotel And Convention Center”, “Sikatuna Beach Hotel”, “SJ Mansion Hotel”, “Hotel Platinum”, “West Town Hotel”, “Mindoro Plaza Hotel”, “Beachfront Bed & Breakfast”, “Nicole's Island View Resort”, “Festin Paradise Resort”, “Southdrive Beach Resort”, “By The Sea Hotels – Bulalacao”, “EM'z Bayview Mountain Resort”, “Balai Del Barrio”, “Kitesurf Mindoro”, “Pocanil Beach Resort”.

The most popular beach hotels in Sablayan – Santa Cruz Neighborhood:

“Seasons Hotel Sablayan”, “John's Beach Resort”, “Grand Creek Hotel and Resort”, “Sablayan Beach Resort”, “Gustav's Place Silver Beach Dive Resort”, “Wency Amor Hotel”, “Vizales Guest House”, “Sablayan Adventure Camp”, “ARK Bed and Breakfast Resort”, “Punta De Poblacion Beach Resort”, “Landmanz Hotel”, “The Countrywoods Resort”, “Apo Reef Club”, “Holiday Ocean Resort”, “Trisha Erona Beach Resort”.

The most popular beach hotels in Paluan – Mamburao Region:

“La Virginia Beach Resort Paluan”, “Maslud Cove”, “Choco Beach Hotel”, “Maru's Food Lounge & Beachfront Rooms”, “Traveler's Hotel and Restaurant”, “La Gensol Plaza and Hotel”, “Bill's Hillside Resort”, “Mindoreños Hotel and Restaurant”, “Alastre Beach Resort”, “Orient Queen”, “Capitol Hills Apartelle”, “Paradise Beach Resort”, “Flowing Farm Resort”, “Navigator's Farm Resort”.

The most popular inland hotels not located on the seafront:

“Kambal Bato Mountain Resort”, “Tagbungan Mountain Resort and Lantuyan River”, “Eduardo's Resort”, “Isla De Oro Hotel”, “Grand Creek Hotel and Resort”, “Infinity Farm Resort”, “Panikian Lake Resort Hotel”, “Argel Farm and Resort”, “Anilao Eco Park”, “Villa Clarita Resort”, “Montelago Hot Spring”, “Jams Dreamland Private Resort” ve “Calawagan Mountain Resort”, “Coco Farm Resort”, “La Estancia Resort”, “Jolly Waves Waterpark & Resort”.

Beach hotels on the islets in the immediate vicinity of Mindoro:

“Grace Island Resort by Cocotel”, “Suguicay Island Resort”, “Tambaron Green Beach Resort”, “Inasakan Beach Resort”, “Pandan Island Resort”, “Buyayao Island Resort”, “Elizabeth's Hideaway Hotel & Restaurant”, “Fridays Puerto Galera”, “Coral Garden Resort and Dive Center”. For those who prefer sunbathing and sea holidays, the Mindoro Island has many accommodation facilities to offer for every taste and every budget. There are many types of accommodation within the borders of the island, from hotels to family villas, from motels to hostels, from hostels to rental apartments. As in many Philippine islands, the number of luxury accommodation facilities that will appeal to high-income groups is very insufficient on the island of Mindoro. Even though it is famous for its beach hotels and diving centers, there are also interesting and quality resorts located far from the sea within the borders of the island of Mindoro. Those who wish to have an ecological holiday among the natural rainforests away from the sea can achieve this in extraordinary hotels on the island of Mindoro.

Undoubtedly, Mindoro is one of the most well-known and most visited islands of the Republic of the Philippines. The island of Mindoro, which has turned into a world popular tourism center with the Calavite Mountain Wildlife Sanctuary with unique species, Giant Clams and Sabang Wreck diving centers, Sabang shores famous for its nightlife, White Beach famous for its white beaches, Ambulong island famous for its long white beaches and secluded bays, Halcon and Calavite mountains covered with rainforests, Naujan and Caluangan lakes with rich fish resources, is one of the most interesting and favorite islands of the Philippines. High mountains and long deep valleys, steep slopes and dense rainforest, numerous bays and peninsulas, jagged ocean shores and hundreds of secluded beach areas are the first prominent geomorphological features on the Mindoro Island. Mindoro Island is not as big as Luzon; it is not as crowded as Mindanao; it does not have as many nightclubs and luxury tourist attractions as Boracay, nor is it possible to say that it is as popular as Palavan. Nevertheless, this tropical island attracts thousands of holiday makers from all over the world every year due to its unique natural beauty and breathtaking tourist attractions. Mindoro island can offer an alternative touristic option, an exciting tourist route and an interesting tourist destination for every curious tourist for 365 days. However, this tropical island also has problems waiting to be resolved.

The main problems and tourism disadvantages of Mindoro Island can be listed as follows:

- The number of both ports and airports throughout the island is very insufficient. There is no railway transportation between the cities, tourism centers and large settlements of the island, and there is no sea transportation between the port cities. The lack of any other transportation option within the island apart from the highway negatively impacts the tourism activities in Mindoro. The transportation between the settlements is not carried out by modern buses, but by primitive three-wheeled motorcycles, which is the best example of the transportation problems on the island.
- Highways throughout the island are very old and neglected, very narrow and inadequate. If international tourism is to be developed in Mindoro, modern highways and wide highways need to be built as soon as possible. The existing road network also needs to be improved, expanded and modernized. The fact that there are almost no car rental companies makes it even more difficult for foreign tourists to travel within the island.
- The problem of clean drinking water, uninterrupted electricity and internet is available in almost all regions of the island. Frequent power and internet cuts in settlements complicate the daily life of both locals and foreign tourists. The old electricity, water, internet and telephone infrastructure need to be renewed and the cable connections above the ground, which generate an eye sore, need to be placed under the ground.
- Inadequately-trained tourism personnel and lack of experience in the service sector are common in many touristic facilities. The lack of knowledge and experience in touristic personnel is clear in many touristic centers such as hotels, restaurants, terminals and bars. The attitude and behavior unconformity of language, tradition and culture observed between foreign tourists and local people can sometimes lead to negative consequences that can shadow the holiday of foreign tourists (Mendaña and Apritado, 2021).
- Uncoordinated construction and widespread squatting are very common in the Mindoro Island as well as in the whole country. It is possible claim that especially the irregular housing and unsightly concretion on the sea shores disturb every foreign tourist. Negligible and grimy settlements devoid of modern architectural approaches, towns devoid of green park areas and children's playgrounds are common throughout the island and constitute both an aesthetic and urbanization problem.
- Even in large settlements, the insufficiency of modern hospitals, sports complexes, large shopping malls, car rental companies, urban parks and recreation areas, cultural centers such as cinemas and theaters negatively impact the foreign tourists. The insufficiency of service areas for daily needs such as pharmacies, cash machines, hairdressers, post offices, and exchange offices is present in almost all settlements on the island. The benevolent, helpful and friendly nature of the local people is a positive social feature that alleviates all these problems and should be emphasized.
- The fact that infrastructure problems such as transportation, communication, sewerage, electricity and internet are present in almost every part of the island is one of Mindoro's priority problems waiting to be solved. Furthermore, the insufficiency or frequent disruption of sports, education, culture and health services in many regions negatively impacts both local people and incoming tourists now and again.
- Natural disasters such as earthquakes, tropical storms, floods, landslides, tsunamis and typhoons occur occasionally in Mindoro, as in every Philippine Island. These types of natural disasters that negatively affect tourism are the geographical fate of Mindoro and are the nightmare of foreign tourists who are not used to such disasters.
- Rapid deforestation and illegal lumbering have created major problems on the island in the last half century (Schult, 2001). Furthermore, strong erosion and soil loss, rapid decline of plant and animal species throughout the island are the main ecological problems in the Mindoro Island in the last quarter century. Rapid pollution of seas, dams, lakes and streams is a very common ecological problem on the island (Villanueva and Buot, 2015). The fact that urban and rural settlements generally do not have water treatment facilities and the indiscriminate discharge of industrial and domestic wastes into the oceans and river basins will adversely affect tourism in the long run (Muyot, 2022). An island whose regional development and tourism achievements depend on marine tourism must take more radical decisions to preserve its sea waters.
- Mindoro is not an island that will satisfy the high demands of capricious wealthy tourists. Therefore, it is possible to say that this tropical island appeals to the low-income and middle-income tourists. Mindoro is not the right holiday destination for those seeking for luxury hotels, quality and clean food, sparkling city streets, quiet and safe traffic. However, it is possible to say that Mindoro is the right holiday destination for the nature lovers and adventure-loving tourists who wish to travel freely with their backpacks and seek economic holidays.

CONCLUSION

The Mindoro Island is neither the most underdeveloped nor the most developed of the Philippine islands in terms of transportation and communication connections, cultural and sports activities, education and health opportunities. However, it is undoubtedly one of the richest and luckiest of the Philippine islands in terms of water sports center, hotel, restaurant, bar, diving center, variety of beaches, entertainment and shopping center options. More importantly, even though this mysterious island does not have a very large area, it hosts a wide variety of tourism types. Today, the main types of tourism applicable on the island of Mindoro are: health tourism, sports tourism, hunting tourism, marine tourism, faith tourism, adventure tourism, rural tourism, eco-tourism, agrotourism, cave tourism, underwater diving tourism, cultural tourism, mountain tourism, congress tourism. tourism, gastronomic tourism, river tourism and botanical tourism. Nevertheless, in the last quarter century, a large part of foreign tourists visiting Mindoro visit the island for marine tourism, festival tourism and underwater diving activities. As a result, the geographical, cultural and ecological diversity throughout the island has led to the diversification of both tourism types and recreational activities. Therefore, hundreds of different recreational activities are practiced in different parts of the island. Freshwater fishing, mountaineering, paragliding, wildlife watching, rafting, canoeing, cave and rock climbing, sea surfing, bird watching, cycling, camping, trekking, mountain climbing and sport diving are among the major sports and recreation activities.

The most important factors that make the island of Mindoro a tourism brand and ensure its success are as follows:

• Strategic geographical location and easy access to neighboring islands are one of Mindoro's greatest economic and tourism advantages. Geographical proximity to the capital Manila and major international airports. Having regular ferry connections between the ports of Puerto Galera and Calapan and the port of Batangas on the island of Luzon is a very important transportation advantage. As a result, there are continuous and regular ferry connections between the island of Mindoro and the islands of Luzon, Tablas, Panay, Coron and Romblon for 12 months.

• It is a great tourism advantage that the creatures, endemic species and natural formations that are not available on any island of the Philippines can be seen on the island of Mindoro. This interesting island, with its endemic species, interesting geomorphological and hydrographic formations, geographical landscape attractiveness, and diversity of flora and fauna, constitutes a real treasure of nature for curious tourists. For instance, it is a great opportunity for ecotourism that it hosts around 15 nature protection areas, 1 Nature Park and 2 National Parks within the borders of the island.

• The rich historical-cultural heritage, many interesting architectural monuments, as well as historical castles, monasteries, statues, monuments and Catholic churches from the Spanish period are the other touristic advantages of the island. The island's many canyon valleys, coral formations, tropical beaches, tourist parks, mysterious caves, historical-cultural places, uninhabited islets, natural mangrove forests, romantic coves, interesting museums, historical Catholic churches and magnificent waterfalls enhance the island's reputation even more.

• The fact that there are many quality hotels, restaurants, bars and accommodation facilities suitable for every budget on the island is a great advantage in terms of tourism. Furthermore, the great diversity of tourism types and recreational activities thanks to its cultural, ecological and geographical diversity further increases the touristic competitiveness of the island.

• Unlike the island of Mindanao and the Sulu archipelago, Mindoro is a very safe island. The lack of security and terrorism problems throughout the island for foreign tourists is of great importance in terms of international tourism mobility.

• Mindoro has a great tourism potential that can be sustained for 12 months and 365 days uninterrupted for sea surfing, diving, rural tourism, beach tourism, health tourism and eco tourism. Having Puerto Galera, a global holiday brand with its famous beaches, musical bars, interesting dive sites and entertainment venues, grants the island a great touristic reputation.

Even though Mindoro is not among the top three islands in the list of preferences made by foreign tourists for the Philippines, there are many holiday options, the number of economic hotels and touristic facilities is high, there are no security and terror problems for foreign tourists throughout the island and it is available for uninterrupted four seasons sea tourism. Furthermore, the great diversity of recreational activities and tourism types to be practiced has led to a significant increase in the number of tourists coming to this island in recent years. Mindoro Island is an interesting and colorful geographical place full of contradictions and contrasts. On the one hand, the island in general reflects a poor rural landscape with poor infrastructure, and on the other hand, it offers rich landscapes with large entertainment centers, high-rise shopping centers, luxury resorts and world-famous hotels. There are, on the one hand, virgin nature, desolate tropical forests, mysterious canyon valleys and secluded shores, while there are, on the other hand, a lively tourism, modern industrial establishments, noisy traffic flow and a large number of interesting tourist facilities. Mindoro is an island that is both very close and far away from the modern and civilized world. Sparse and densely populated lands are together, untouched nature and heavily polluted lands, poor and rich views are side by side on this island.

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GEOTOURISM OF AXUM AND YEHA MONUMENTS, NORTHERN ETHIOPIA

Legege Gebreyesus TEKLEBRHAN *
Aksum University, Department of Tourism Management, Institute of
Archaeology and Tourism, Aksum, Ethiopia, e-mail: teklebrhan2112@gmail.com

Haftu ZELEALEM
Aksum University-Shire Campus, Department of Geology, School of Mines, Shire, Ethiopia, e-mail: zelealemhaftu@yahoo.com

Alemshet Gebreslassie DANIEL
Aksum University, Department of Tourism Management, Institute of
Archaeology and Tourism, Aksum, Ethiopia, e-mail: daniofaxum@gmail.com

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Abstract: Ethiopia constitutes one of the most significant environmental, religious and cultural reserves on Earth. The study aims to assess the geotourism of the monuments. The study has been conducted using literature review, fieldwork, data collection and production of geotourism maps and interpretations. Geosites are important resources for geotourism development in Ethiopia along the Historic route of Ethiopian tourism. This route is the main tourism corridor of the country in which geotourism knowledge is very important. Among the major geotourism sites in the study area are, Axum Stelea and its Quary Site, archaeological sites, monasteries, Adwa Volcanic Mountain Chains, palaces, rock-hewn churches, and viewpoints. Therefore, the study has concluded that knowing and understanding the geotourism (which includes geosites and historical heritages) is very important for the development of tourism in Tigray, Ethiopia.

Key words: tourism, geotourism, sustainable development, Geosite, Aksum, Yeha, Tigray

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INTRODUCTION

Geotourism is defined as tourism that focuses on an area's geology and landscape as the basis of fostering sustainable tourism development. It begins with an understanding of the Abiotic (non-living) environment, to build greater awareness of the Biotic (living) environment of plants and animals as well as the cultural environment of people, past and present (Dowling, 2013). Geotourism is a concept that focuses on geology and landscape, integrating tourism into the conservation of geosite and geological diversity (Enes et al., 2022). Geosites often determine natural scenery and landforms, the main attractions for geotourism. Even though the term "geosite" tends to emphasize the rock, fossil and landform record created by natural processes during protracted intervals of geological evolution, it was never disassociated from cultural heritage (Migoń and Migoń, 2022). Geosites are landforms with a specific shape, which alone or in collaboration with other bioecological or anthropic elements can become objects of heritage (Ilieş and Josan, 2009). Geosites are defined as geological objects that have acquired a scientific, cultural/historical, aesthetic and socio-economic value due to human perception (Reynard, 2004a). Ethiopia hosts numerous geosites, some of which have been granted UNESCO World Heritage status, though defined as cultural and/or natural heritage sites when registered (Figure 1). These include the stelae of Axum (granted World Heritage status in 1980); the rock-hewn churches of Lalibela (1978); the Semien Mountains National Park (1978); the Fasiledes Castle in Gondar (1979); the prehistoric sites of Tiya heritage (1980); the lower Valley of the Awash River (1980); the lower Valley of the Omo (1980); the Muslim Holy city of Harar (2006); and the Konso Landscape (2011) (Figure 1) (Asrat et al., 2009).

Infact, Ethiopia constitutes one of the most significant environmental and cultural reserves on Earth, strewn with unique and significant geological and archaeological monuments. The underlying geological feature often determines natural scenery and landform, and defines many tourist attractions all over the world. So, geology is often the most important factor controlling natural scenery and landforms (Asrat et al., 2009). Archaeological and ancient cities of Ethiopia like Axum and Yeha are important geotourism destinations (ibid). Many tourist sites around the world exist, in general, for geotourism reasons. This fact is more evident in Ethiopia: there still-active Great Ethiopian Rift Valley, which encompasses many of the national parks and wildlife sanctuaries; the chain of Rift Vally lakes and the world-famous archaeological and anthropological sites like Axum and Yeha; the unique Afar rift, where active volcanic activities in Erta'ale and formation of new oceanic crust can be witnessed; the Semien and Bale massifs; the Tis-Isat fall along the mighty Blue Nile River; and the Sof-Omar are all there because of unique geological processes (Asrat et al., 2012, Tessema et al., 2021). Ethiopia is also one of the few places in the world where its cultural history, religious manifestations and civilization are imprinted in rocks: the rock-hewn churches of Lalibela and Central and Eastern Tigray, and the stelae of Axum are all there because of the unique geological materials available. Furthermore, geomorphological

* Corresponding author

and geological features, notably the isolation of the north-western highlands from the external world by the harsh Afar depression close to the sea, determined the route of Ethiopian history (Asrat et al., 2009) (Figure 1).

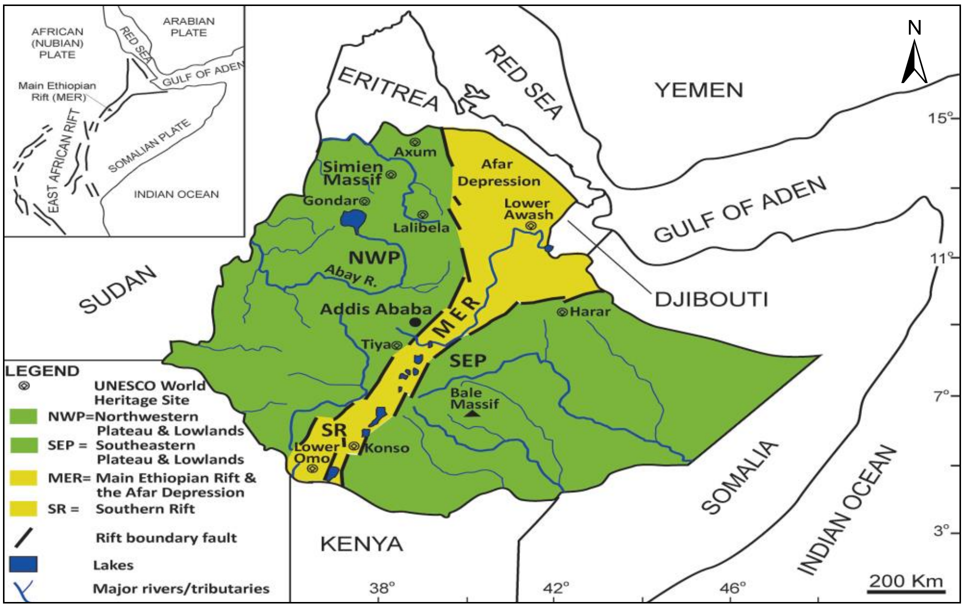

Figure 1. Location Map of the World Heritage Sites in Ethiopia, and other geographic features (Modified from Asrat et al., 2012)

Tigray is also one of the few places in the country where historical manifestations of culture and religion are imprinted in rocks: the rock-hewn churches of central and eastern Tigray, the stelae of Axum, and the Temple of Yeha, etc are all there because of the unique geological materials available (Asrat et al., 2009). Geotourism combines abiotic, biotic, and cultural aspects. In Tigray in northern Ethiopia, the Orthodox Christian religion is a dominant component of culture, that highlights the importance of geology and the wider natural environment, and creates great visibility for it (Nyssen et al., 2020). Tigray is home to 121 rock-hewn churches, believed to represent the single largest group of rock-hewn architecture in the world. Eighty of these churches, dating from the 5th to 14th centuries AD, as well as a small number of masonry and timber-built churches, which include some of the oldest timber structures surviving worldwide (6th – 10th centuries AD), are located in the Sacred Landscapes of Tigray (UNESCO, 2018). This culture has continued to this day, and many of the local housing, stelae, tombs, and modern architectural works make use of the numerous stone deposits in the area, including sandstone, marble, and granite, an indication that rocks play an important role in the country's industrial revolution and tourism development (Heldal and Walle, 2002). It can be further proposed that geotourism is an important opportunity for the development of the tourism industry, and it contributes to efforts in alleviating poverty and unemployment and getting hard currency. Thus, the concepts of geotourism play an important role in local economic development and sustainable rural development by increasing the number of tourists. However, less attention is given by the tourism industry to the geotourism features underlying the major tourist attractions of the region of Tigray in particular and the country in general. Tigray is named the cradle of human civilization to indicate the numerous natural and cultural tourism heritages found in its sovereigns (Daniel and Teklebrhan, 2019). This indicates its geotorism need to be investigated to satisfy tourists.

The available tourist guides and brochures on these sites rarely mention the nature of the geosites, let alone their scientific significance. Ethiopia's cultural and political history and its fauna and flora are relatively well documented, but its geotourism is not, because the local guides are self-appointed, misinforming tourists, providing them with incorrect information (legends) and no materials addressing them. The only existing works partly relevant to such purposes are gray pieces of literature (e.g., Demissie, 1988; Gerster, 1968, 1970), specialized works on specific sites (e.g., Asrat, 2002, Asrat et al., 2009; Phillipson, 1997, 1998; Schuster, 1994), too general (e.g. Hancock et al., 1990), written in local languages (e.g., Aubert, 1997; Hagege, 2000; Mercier, 2000), highly specialized scientific works on the geology of the sites under consideration (e.g., Asrat et al., 1998; Ayalew et al., 2002; Bosellini et al., 1997, Hagos et al., 2010, 2017) or highly specialized geotourism works (Hagos et al., 2017; Asrat et al., 2012). However, studies related to geotourism are lacking in the country and the study area in particular although tourism has been identified as a major sustainable development sector currently targeted by the regional and federal governments. There are only a few related studies like geotourism in Ethiopia (Asrat, 2009), geotourism in around Lake Tana (Tessema, 2021), geotourism in Tembien, Tigray (Nyssen, 2020), and Palaeoenvironmental research at Hawelti–Melazo: Tigray, northern Ethiopia (Hardt, 2023).

So, the main objective of this research work is, to introduce the geotourism attractions in Aksum and Yeha areas. Specifically, it aims to introduce the geotourism and geosite attractions, geoheritages, and their links to sustainable tourism development, and provide information about geotourism of the destination.

METHODOLOGY AND FACILITIES

To understand the geotourism potential of the study area, the fellowing steps in every geological work: data collection and literature review, fieldwork; integration of collected data into databases, production of geological maps and computer analysis; data interpretation and report compilation; and ultimately publishing and printing. An extensive literature survey collection of published and unpublished materials, including maps, reports, aerial photos, satellite imagery, etc from Ethiopian Mapping Agency, Aksum University, Ministry of Culture and Tourism, Tigray Tourism Bureau and private material collections from surveyors was conducted as indicated in Figure 3. Detailed maps and descriptions of all the major tourist attractions were prepared from such resources.

Fieldwork was conducted in Yeha and Axum, where all relevant sets of geological, geomorphological, and cultural information were collected; representative rock samples were collected for further laboratory analyses as well as photographic documentation of the sites was under consideration.

All the field data were organized, recorded, stored, and analyzed using Geographic Information System (GIS) at the Department of Geology, Aksum University. Finally, the field observations and geological maps were used to describe the role of the geological processes and the resulting rocks in the construction of monuments and archaeological sites. In short, flow chart of the methodology is as follows.

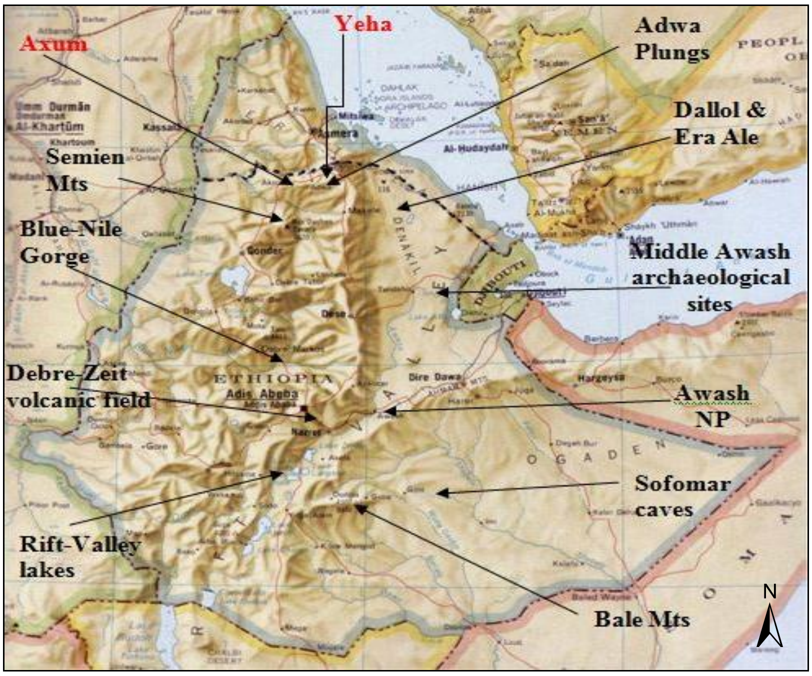

Figure 2. Location Map of the selected Ethiopia's geological and geomorphological attractions and the red in color shows the study areas (Source: Mulugeta, 2017

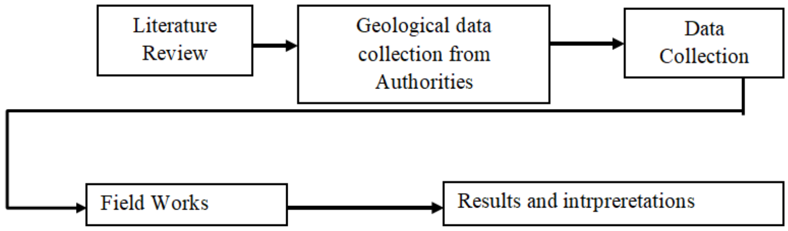

Figure 3. Structure of the Research Methodology

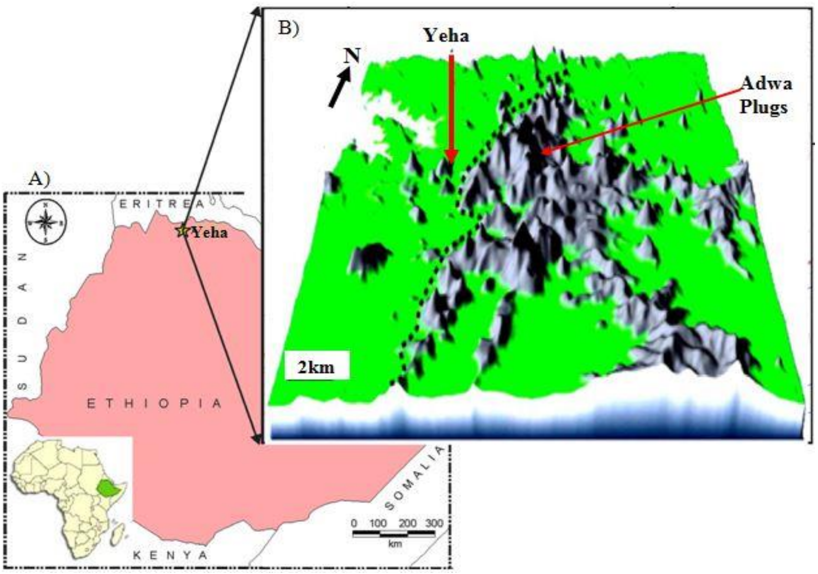

Figure 4. A) Location map of the study area in the northern part of the Ethiopian highlands (Modifed from Hagos et al., 2017) and B) Digital Elevation Model (DEM) of Yeha and surrounding Adwa plugs (Author, 2021)

RESULT AND DISCUSSIONS

The Geotourism Site of Yeha (Pre-Axumite Heitage Site) Geological and geomorphological setting of Yeha

As shown from Figure 2 and 4, the geology of the Yeha region consists mainly of large volcanic plugs made of phonolite to alkali-trachyte (Asrat et al., 2009). The site of Yeha is located some 29 km northeast of the town of Adwa.

Philllpson (1998, p.176) describes the setting of the site in the following terms: "Yeha lies in a well-watered valley with deep fertile soils, surrounded and sheltered by mountains," and attributes the selection of this site to the exceptional fertility of the soil. However, although he described the site well, the selection of the site seems to be attributed more to the strategic location of the site, being surrounded by mountain edifices than to the 'exceptional" fertility or "broadness" of the valley. The site is located in a narrow valley surrounded by phonolite plugs that have been eroded to fill the narrow valley with colluvial deposits, which are intercalated with alluvial sediments to form the soil.

These findings are similar to the findings of Asrat et al., (2009). The Adwa phonolite plugs and domes, probably Pliocene in age, are found above the trap sequence and in places above the Precambrian Basement, northeast of Adwa in an area of about 20 km by 30 km (Asrat et al., 2009). They generally follow a northeast-southwest orientation, probably indicating their eruption along a weak line oriented in the same direction (Hagos et al., 2017; Asrat et al., 2009).

The plugs are generally phonolitic to trachytic in composition, forming generally inverted, cone-shaped isolated peaks and circular domes, whose shapes were later modified by differential weathering (Hagos et al., 2012; Asrat et al., 2017). Yeha is located at the foot of one such phonolite plug, with the curious shape of a "sitting lion".

This is a result of differential weathering of the phonolite-trachyte dome. Therefore, it is one of the oldest towns in Ethiopia that has great value for geotourism.

Monuments in Yeha-A Geoheritage Site

As can bee ssen from Figure 5, Yeha is legendary for the outstanding monument called the Temple; however, there are alternative remains of archeologic importance settled in proximity to the positioning of the Temple. Archaeological investigations by the Deutsche Axum- Expedition in 1906 and later by Francis Anfray within the early 1970s during a neighborhood referred to as Grat Beal Gebri, settled some two hundred m northeast of the site of the Temple, unearthed a series of massive square-sectioned monolithic pillars that, due to lack of appropriate conservation after their excavation, are now badly deteriorated (Phillipson, 1998).

Francis Anfray additionally unearthed a series of rock-cut graves, one in every of which can have belonged to at least one of the D'MT rulers (Fattovich, 1990), on the lower southwestern slopes of the outcrop on which the Temple stands. Vertical shafts cause one or a lot of tomb chambers, the contents including plethoric pottery, copper-alloy sickles, and alternative tools, associated degreed an alabaster vessel (Phillipson, 1998).

The monuments are sustained for many years since ancient times with the help of rock nature that was made of. Therefore, they have geotourism value where tourists need to know how the history of tombs, the temple, and palaces are integrated into the geological characteristics of the destination. The destination is also surrounded by valleys, mountains, and ancient irrigation channels that mix nature and human interventions.

Figure 5. The overview of the Historic temple and monastery of Yeha (A); the temple under restoration (B); overview of the ancient and archaeological town of Yeha(C), and Grat Beal Gebri Ruined Palace (D). (Source: A joint project of DAI and the Antiquities Authority of Ethiopia, 2017 (A), and B, C, D Teklebrhan, 2020)

Temple of Yeha (Hillocked Heritage)

According to Asrat et al., 2009, this Temple stands on a rocky hillock composed of a trachytic material, surrounded by plugs. Within the same enclosure and rocky hillock, a modern church stands next to the Temple. The Temple is considered by the locals to belong to the sacred church precinct, obliging tourists to dully follow the norms of the church while visiting the Temple. The Temple is a rectangular building measuring 18.5 x 15 m whose plain walls, without apertures other than a single entrance, still survive to a maximum height of more than 11 m. Regular rectangular blocks of up to 3 m in length were used to construct the wall, without the use of any mortar. Great precision has been exercised to dress the outer faces, edges, and corners, giving an impression that the lines among the blocks were carvings in a super monolithic structure. The main wall of the Temple is well preserved (Asrat et al., 2009). According to Phillipson, (1998) the Temple about a thousand years after its initial construction, was subsequently converted into a Christian church. These results are coherent with the findings of Phillipson (1998) and Asrat et al. (2009).

The interior of the building, though less preserved than its exterior, presents an amazing construction style in which it is possible to see that the wall, whose total thickness is about 60 cm, is not just a single structure: there are two walls interconnected to each other by smaller blocks of stone that serve as anchors. The Temple's floor is built, with 5 layers of blocks which are different in size, which is some of them measuring 1 m by 50 cm, others 1 m by 1 m. Close to the back wall of the interior part of the building is a rectangular hole. Though the architectural perfection is what makes the Temple interesting at first glance, it has much more to offer for a curious geotourist. The Temple is entirely built of fine-grained sandstone blocks that show striking uniformity in composition and texture, implying that they must have been quarried from a massive sandstone bed. The sandstone is quartzose-arenite with some silicification, although types of cement may vary from calcite to Fe-oxides, as can be observed in the reddish-to-brownish staining on the weathered surface of the blocks. However, on some occasions, phonolitic rocks from nearby plugs were also used as construction materials (Asrat et al., 2009). Even though the quarry of these sandstones was not clear, according to Asrat et al. (2009), these sandstones were quarried from 50 km east or southeast of Yeha and these sandstones are called Tekeze sandstone.

Apart from the Temple, there are some interesting features in the church precinct. Two roughly shaped granite stelae three meters high are erected in front of the main entrance to the Temple. However, the date of the erection and its purpose are not clear. A modern church, which stands next to the Temple, is an interesting structure. In recent times, this church, contributed a lot to the conservation of the existing ruins of the Temple (because church precincts are generally safe from destruction even during times of war. Moreover, the modern church either incorporates in its walls or safety houses in its treasury some carvings and slabs that probably were once part of the Temple structure. The walls of the modern church incorporate two finely carved stones depicting a frieze of stylized ibex figures, while three stone slabs with Sabean texts, two of them from the same inscription with raised lettering and another incised (Phillipson, 1998; Asrat et al., 2009), are kept in the church treasury and exhibited by the clergy to curious tourists.

Figure 6. A & B Closer view of the edges and corners of the walls, C) Ancient stone slabs with Sabaean inscriptions found at Yeha, D) Ancient Rockhewn Tomb in Yeha E) The Temple of Yeha as seen from its entrance toward the East, with surrounding plugs F) Regular & rectangular sadstone and occasional phonolite blocks of up to 3 rn in length were used to construct the walls of the Temple, without the use of any mortar (Source: Shutter and Alamy Stocks; Teklebrhan, 2020)

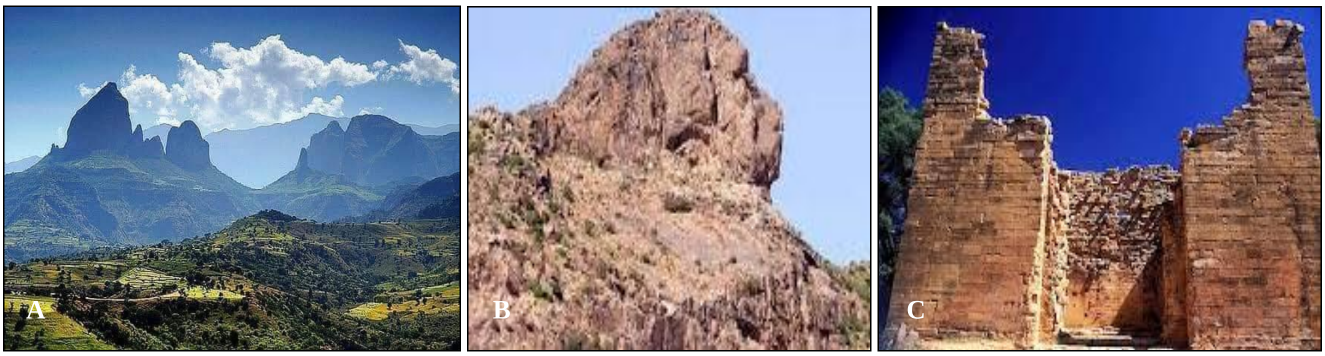

Figure 7. Yeha Temple (C) is located in the Adwa Mountain chains (A) at the foot hill (B) of a phonolite plug with the curious shape of "a sitting lion" (Source: A & B by Teklebrhan; C by Brilliant Ethiopia Tours)

Axum (Monuments of Ancient Civilization) - Geological and geomorphological setting of Axum

The Axum area consists of the Neoproterozoic basement rocks with low-grade volcanic, volcano-sedimentary, and plutonic rocks (Tadesse, 1997). These rocks are unconformably overlain by ~40-m-thick horizontal Mesozoic sedimentary rocks and on top accompanied by wide-spread magmatic rocks that covered large parts of the area with a thick layer of Tertiary volcanics (trap basalts and phonolite-trachyte plugs). The volcanic rocks of Axum are composed of three main lithologic units of Tertiary age (Figure 6 B; Hagos et al., 2017). The first volcanic rock, the flood basalt sequence (late Oligocene basalts; Hofmann et al., 1997), forms a gently undulating plateau surface that is intruded by numerous volcanic plugs belonging to the Axum-Adwa trachyte formation (phonolitic and trachytic plugs). The second volcanic suite, the post-trap basalt sequence (basalts of the Miocene to Pliocene ages), fills the deeply incised canyons of the southern Axum area and is supposed to be the northern extension of the Semien shield volcanoes in the northwestern portion of the Ethiopian high lands. The third volcanic type is the Axum phonolite/trachyte plugs (Figure 8B). These plugs stand out as circular hills as these rocks are more resistant to erosion than the surrounding plateau basalts. These include the hills of Gobo-Dura, Mai-Koho, and Bete-Giorgis (Figure 8B). Gobo-Dura and its surrounding areas belong to the historical quarry locations for Axum (Ferrari et al., 2015). The phonolites and trachytes occur as steep-sided plugs and lie within an E–W belt extending from the western margin of the northern Afar Depression, between Adigrat and Senafe, via Adwa and Axum, westward to the Shire area. At Axum, the phonolite and trachyte domes are well clustered and lie unconformably on the Arabian-Nubian shield, Cretaceous sandstone, and Oligocene flood basalt of the region (Hagos et al., 2017).

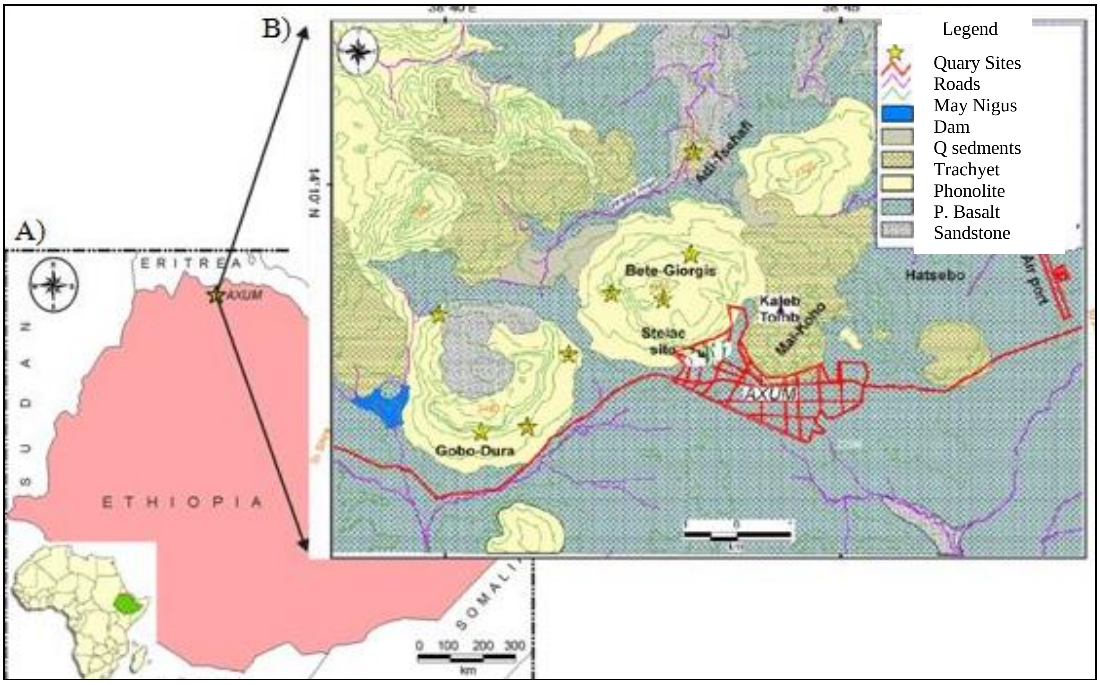

Figure 8. A) Location map of the study area in the northern part of the Ethiopian highlands and B) geological map of Axum showing the well-known archeological and quarry sites of the area (Source: Modified from Hagos et al., 2017)

Table 1. The chracterstics of the six stelae, according to their tag numbers (Source: Phillipson, 1998)

Tag number	Name and location	Height & Weight	Unique nature	Section of ground level
Stela 6	Northern storeyed stela & NE of Enda Yesus Church	15.3 m&43tons	Monolith with 4 storeys, 3 carved faces	1.47x0.78m
Stela 5	The stelae by the stream & E of Enda Yesus Church	15.8 m&75tons	6 storeys, 4 carved faces	2.35x1.00m
Stela 4	The stelae in front of Enda Yesus & just outside of Enda Yesus Church	18.2 m&56tons	6 storeys, 4 carved faces	1.56x0.76m
Stela 3	The Upright storeyed stela & SW of the main stela	20.3 m&160tons	Monolith with 10 storeys, 3 carved faces, -the trademark of Axum	2.65x1.18m
Stela 2	The 2nd largest stela	24.6 m&170tons	Monolith with 11 storeys, 4 carved faces -Taken to Rome and return	2.32x1.26m
Stela 1	The great fallen stela & SW of the erect stelae	33 m&520tons	Monolith with 13 storeys, 4 carved faces -Found fallen and brokn the trade mark of Axum	3.84x2.35m

Monuments in Axum: The Stelae

Axum is famous in the world, due to its beautiful, numerous, variety, number and architectural style. The major locations of stelae in the town are northern, western, and southeastern of the town.

A. Northern stelae field/Main Stelae Field

The area extends for some 700 m along the foot of Bete Ghiorgs Hill and has visible remains of 120 stelae in this area (Phillipson, 1998; Asrat et al., 2009). The original number of stelae may have been much greater, as some are completely buried beneath thick artificial debris, while others may have been removed for re-use. The stelae show great variety, from unworked stone slabs less than a meter in length to huge and elaborately carved stelae of 30 m in length. The majority of the carved stones are completely dressed to a generally rectangular or sub-rectangular cross-section with flat sides and a rounded/conical apex, devoid of other decoration. However, this stelae field and Axum are famous for six elaborately carved stelae depicting buildings of up to 13 storeys. The six stelae, according to their tag numbers (Phillipson, 1997, 1998), are expressed in Table 1 below.

B. Western stelae field (Gudit stelae field)

The name of these stelae was after the queen who is said to have sacked Axum around the 10th century AD is located on the western outskirts of the town, immediately beside the road leading to the Shire and the south of the Dungur ruins. It extends over an area of some 500x200 m and the area has been intensively cultivated, resulting in much modification of the site. However, traces of several hundred stelae, mostly small and undressed, can be seen. Only about a score of them are still upright. The fallen stelae include a few larger, dressed examples with rectangular cross-sections and rounded tops, but they are undecorated. Phillipson, (1998) and Asrat et al. (2009), similarly describe these stelae.

C. Southeastern stelae field and Ezana Garden

This is the smallest of the three stelae fields of Axum, located at the southeastern outskirts of the town, with only a single erect stela to be seen currently. However, three other fallen stelae and a small number of smaller, rougher stelae were recorded in this area in 1906 (Phillipson 1997). The missing fallen stelae may have been subsequently destroyed or may have been re-erected in the “Ezana Garden” located 200 m west of this site, or possibly in the garden of the Touring Hotel in the center of the modern town (Phillipson, 1997; Asrat et al., 2009). The standing stelae in this site are 8 m long, erected in a socket excavated from the rock of the hillside. It has a rectangular cross-section, with rough but straight tapering surfaces and a rounded head damaged at the rear. Although what makes Axum interesting from a geotouristic point of view is the enormous amount of its material culture, notably the stelae, the section of construction materials, and how the slabs of stone were produced/quarried, transported, carved, and erected may indicate the extent of civilization and technological advancement the Axumites enjoyed. The symbolic representation of the stelae may also shed light on the customs of this civilization. These points are discussed at some length in the following sections.

Origin of the Stelae

Similar to Hagos et al. (2017), Axum town lies on a basaltic cover and is surrounded by hills composed of phonolyte in Gobo Dura and Bete Ghiorgs and the May-Qoho rhyolitic trachytic domes. A close inspection of the phonolytes indicates that they are syntenic in composition, with nepheline phenocrysts. Though no prominent alignment of minerals is observed, the rocks are slightly foliated at their margins, implying that they were probably syntectonic in origin (Asrat et al., 2017). Based on field observation in the stelae and Gobo Dura Hill, some 4 km west of the main stelae field, leaves no doubt that most of the stelae were carved from stone slabs quarried on this hill. The phonolytes in both Gobo-Dura and Bete Ghiorgis were affected by vertical and horizontal joints. Those joints were specifically prominent at the Gobo Dura Hill, where they resulted in very big and almost detached slabs at the hillside. This structural weakness of the phonolytes may have facilitated the quarrying process, as it would only suffice to destabilize the jointed blocks to get slabs of stone, which could be later carved into huge stelae. The presence of numerous undressed or partially dressed slabs abandoned at the foot of the Gobo-Dura Hill was clear evidence of the fact that one of the major sources of stone slabs for dressing stelae was this very site. On the other hand, the Bete Ghiorgis trachytes, which are close to the main stelae field, are affected by frequent vertical joints, producing big slabs at the slope facing the stelae field, though not big enough to cave. However, Bete Ghiorgis can also be a good candidate as a source of slabs for some stelae, especially the smaller ones. These descriptions are also supported by the findings of (Asrat et al., 2009; Hagos et al., 2017).

Mechanism of slab qurry, transport and dressing

Even though there is no clear archaeological evidence to shed light on these processes, the prints left on some of the stelae and unfinished stelae may give some clues that intended breaks were marked by pecked lines, along which were cut series of rectangular sockets on huge slabs of rocks that were originally destabilized from the hillside along the vertical joints are observed at the foot of Gobo-Dura Hill. These prints and unfinished stelae may be produced either naturally or human-made, which were removed to Axum and erected without the marks being fully obliterated by subsequent dressing. Although the tools used in the process of quarrying, transporting, and dressing have not yet been identified, wooden wedges were likely inserted into the sockets and made to expand percussion, by insertion of metal wedges or by application of water, thus fracturing the rock (Phillipson, 1998; Asrat et al., 2009). The presence of several unfinished stelae and other undressed stones at the main sites of erection suggests that, in many instances, the blocks thus extracted from the quarries were transported to their intended usage site without much subsequent preparation, and that final shaping and dressing were carried out at the final site of erection rather than at the quarries (Phillipson, 1998; Asrat et al., 2009).

How were the stelae Erected?

The main stelae field where some stelae remain erect may give some clue to how the stelae were erected, though the site has been completely changed due to subsequent modifications and landscaping to create the present stelae park, with its flat and open appearance. In what must have been a rocky hillside, a series of traces was built, the whole eventually retained by a massive stone wall that still survives, though much altered and almost totally rebuilt (Phillipson, 1998; Asrat et al., 2009). However, the subsequent landscaping resulted in the infilling of the ground for up to 4m, partially or covering the earlier platforms and terraces on which stelae had been set.

What was the purpose of erecting the stelae? What do they represent?

The stelae at Axum can be generally grouped into two major classes: 1) the large stelae carved in the representation of multi-storey buildings, and 2) the small, plain stelae. Although some of the stelae depict buildings of up to 13 storey, there is no evidence that actual buildings in Axum ever achieved more than two or, at most, three storey (Phillipson, 1998) can be seen in Figure 9 A. It is now generally believed that the stelae in pre-Christian times, and probably later, marked burial sites. This is observed in many places in Axum, especially in the three stelae fields, though it is still far from certain that all burial sites are marked by stelae and/or all stelae mark a burial site.The standing stelae in the southeastern stelae field are erected close to the Tomb of Bazen, which lies some 10 m from it. The main stelae field was extensively used for human burials, and the numerous stelae may have been used to mark these burial sites. A notable example may be the largest fallen stelae, which lies over the largest megalithic tomb in Axum. Some small burial sites and tombs have also been found at the Gudit stelae field. The description of the study in terms of erecting purpose and type of representation is similar to the findings of both Phillipson (1998) and Asrat et al. (2009).

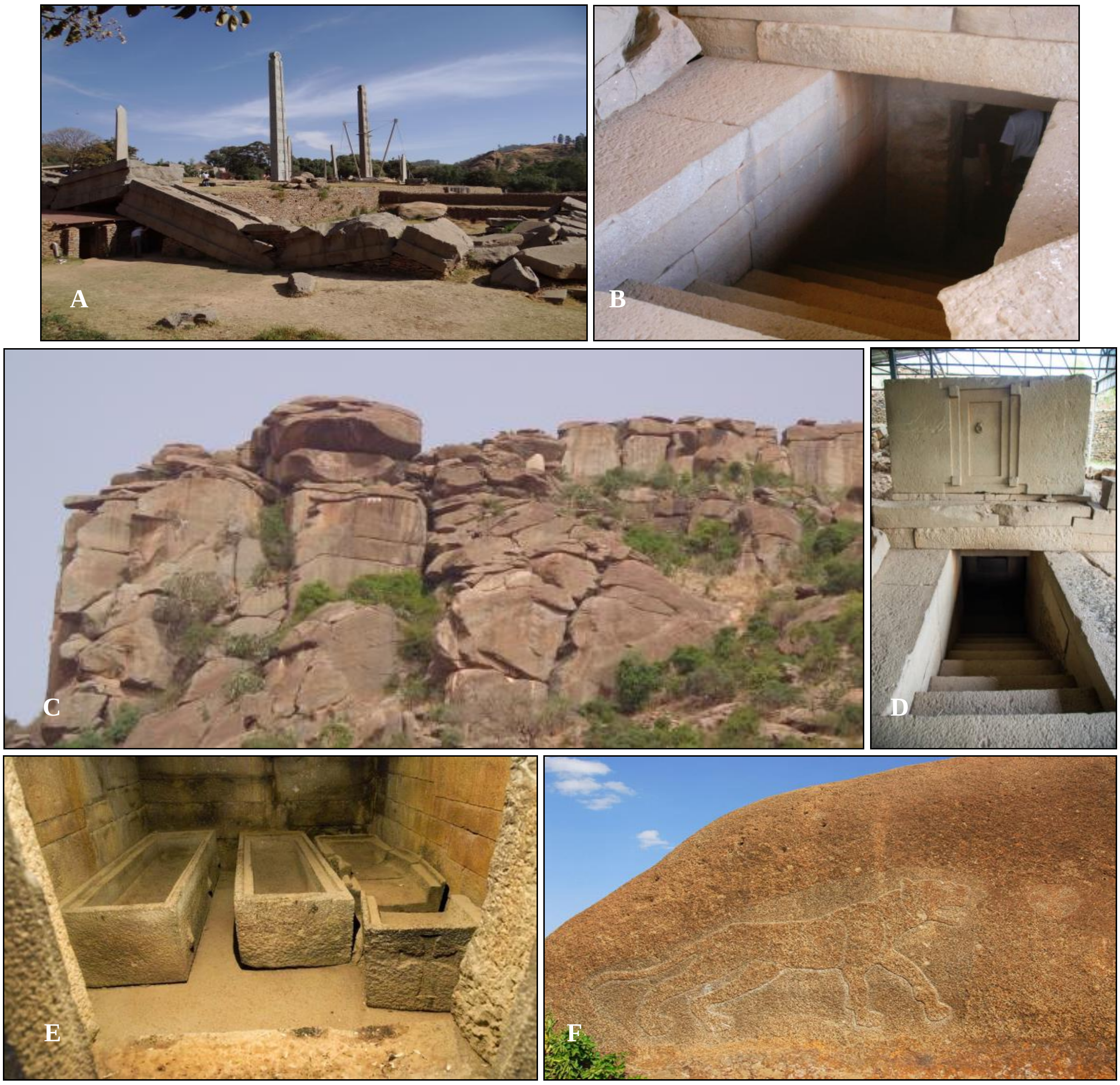

Figure 9. A) Two upright stelae and fallen stelae, B) false door substructure designed by a flight of steps, C) Closer view of the Gobo Dura Hill; note the vertical joints that resulted in huge slabs of phonolyte ready to fall (topple), D) front View of the false door, E) Tombs of Kaleb and Gebremeskel and F) Lion of Gobo Dura, carved in phonolitic rock

Tombs

Although Axum is known for its magnificent stelae, what these stelae represent in the burial sites is also equally impressive. Much of the information about the Axumite civilization was unearthed from such tombs, catacombs, and burial sites as inddicated in Table 2. Numerous sites have been recognized in many parts of Axum. Some of the most important ones are described below.

Palaces and other buildings

Remains of buildings of significant proportions, which were occupied by the Axumite elite, are found in two places in Axum: in the southwestern part, where three large structures, Enda Mika'el, Enda Sem'on, and Ta'akha Maryam, were investigated in 1906 by the Deutsche Axum-Expedition; and farther to the west, outside the modern town, where a smaller but better-preserved structure known locally as the "Palace of the Queen of Sheba" or the "Ruins of Dungur" is located (Figure 10).

The three structures are, however, obscured and damaged beneath recent buildings (Phillipson, 1997, 1998). However, other similar elite or non-elite buildings in and around Axum may be waiting for accidental or systematic discovery.

Table 2. The characterstics of the tombs of Axum and its area(Source: Teklebrhan, 2019)

Tombs name	Location	Characterstics
Bazen	SW foot of the Mai Qoho hill	9.5 m long rock cut adit, with 16 steps leading down to the main chamber, from which 4 burial loculi lead off. 7 other smaller and irregularly shaped loculi lead off the adit, coupled with the records of stelae and rhyolitic in composition.
Brick Arches	East of the standing storeyed stelae	12 m long by 1.5 m wide adit lined at its roof with rough stones and leading 18 stone steps down. At the foot of the steps a horse-shaped brick arch, which gives access to the tomb, comprising 4 rock-cut chambers extending over an area of 10x12 m. It does not seem to be associated with any stelae now surviving.
Nefas Mewcha (Figure 9 D)	Beneath the fallen great stelae	The tomb covers a total area of 16x23 m and comprises a rectangular central chamber, presumably funerary in purpose, surrounded on 3 sides by a passage. Fallen stelae with huge granitic blocks, which were partly carved in situ.
Mausoleum (Figure 9 B)	Beneath the fallen great stela	Slab of 6.4x17.3x1.2m, weighing about 360 tons, which comprises 5 pairs of side chambers each measuring 6.6 m long and 1.7 m wide. They branched from the central chamber, which measures 16.7 m long, 1.9 m wide, and 2.3 m high. It is an intricate network of chambers capped rooed or walled with beautifully dressed huge granite slabs. Fallen stelae with huge granitic blocks, which were partly carved in situ.
Kaleb-Gebremeskel (Figure 9 E)	2 km north of the modem Axum town on a saddle between two hllls	Constructed side by side beneath a shared superstructure. Corner stones represent huge granite slabs. Two wings of the courtyard are aligned with each of the underground tombs. Approached by a stepped adit, fully roofed and constructed of huge, carefully dressed granite blocks of irregular shape. The northern Tomb of Kaleb comprises a longitudinal chamber from which three rooms open eastward.

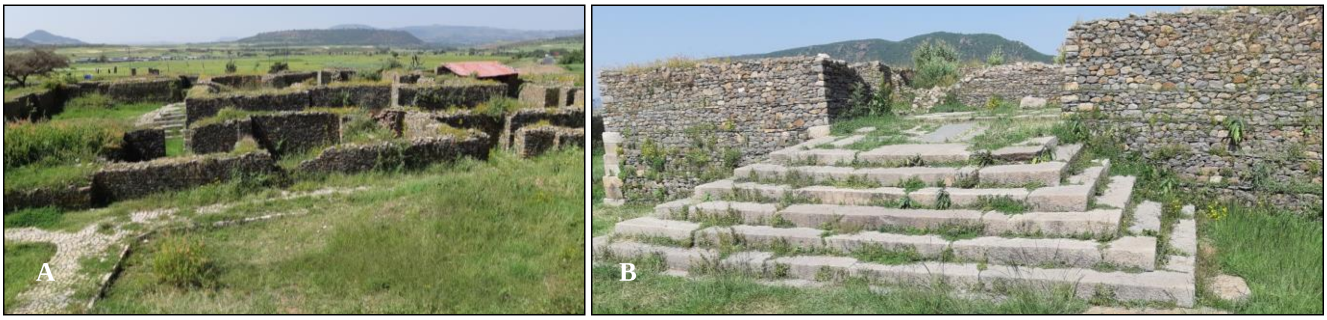

Figure 10. The ancient compound of Dungur (Queen Sheba) Palace comprising 53 ruined rooms(A) and the central part of the palace which was the main dinning chamer (B) (Source: Teklebrhan)

Proposed Geotourist Itinerary

Axum to Yeha Tourism Corridor of the Tigray region is one of the geotourist and heritage tourism destinations. Axum (World Heritage site) and Yeha (Tentative list) for their outstanding heritages mainly build from stones and rocks that impress geology lover tourists. They are very rich in natural and manmade heritages. The destination is home to amazing history, culture, landscape, rocks, and numerous religious resources dating back to Christian and pre-Christian periods, and archaeological findings of the pre-Aksumite period. The area presents huge potential geotourism resources as indicated in the discussion part of this paper.

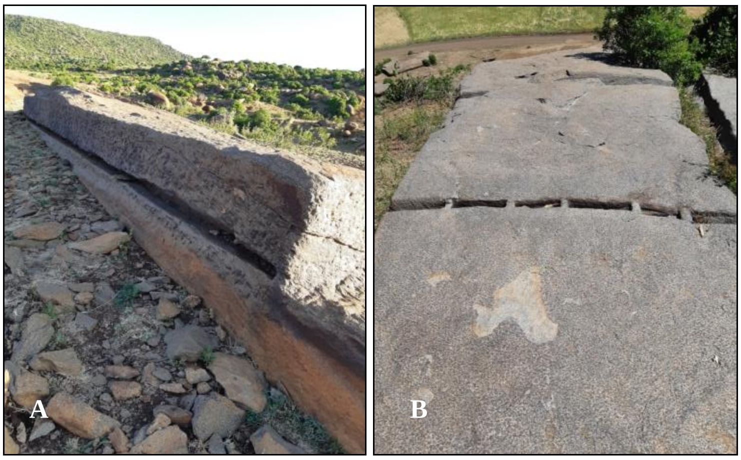

Figure11. The geosites of Gobo Dura Quary site where the monolithic stalae of Axum were transported from (A & B) and Axum’s Main Stelae Park

Geotourists can have the following itinerary to experience the geotourism attractions

Day 1: Axum (The ancient Quary site of Dura Hill, Stelea (the World's largest decorated monolithic stelae), rock-hewn church, archaeo-museum, tombs and graveyards, archeological sites, and heritages associated with Axumite civilization). Overnight stay will be in one of Axum's hotels.

Day 2: The next day geotourists will travel to Adwa Volcanic Mountain Chains and trek to different mountains that have rock-hewn churches and historical importance. Geotourists can trek on Raayo Mt, Forto Mt, Semayata, Gobo Soria Mt, the battlefield Adwa, and adjacent mountains. On your way, you will experience the touchy history of the Ethio-Italian war, mountains in the conference, monasteries, local activities, and other sites. Your overnight stay will be in Adwa City.

Figure 12. The Volcanic Mountains of Adwa Geotourist trails to the mountain of Soloda by foot and/or horse (A, B & C), and the geomap of Adwa Mounains (Source: Enda Emba Tour and Travel: Adwa, 2019 for images of A, B & C, and Mulugeta Feseha - Addis Ababa University, 2017)

Day 3: Yeha (Temple, church, palace, ancient resident area, museum, graveyard, archeological sites, lion shape Mt and heritages associated with Damat civilization). Overnight stay will be in one of Yeha's local houses which will help visitors to experience the hospitality of local people.

CONCLUSION

Tigray is one of the few places in the country where historical manifestations of culture and religion are imprinted in rocks: the rock-hewn churches of central and eastern Tigray, the stelae of Axum see Figure 11 C, and the Temple of Yeha, etc are all there because of the unique geological materials available.

The geology of the Yeha area consists mainly of large volcanic plugs made of phonolite to alkali-trachyte while the Axum area consists of the Neoproterozoic basement rocks with low-grade volcanic, volcano-sedimentary, and plutonic rocks. As a result, the major findings of this paper are: Axum is famous in the world, due to its beauty, numerous, variety, number, architectural styles, and the nature of rocks. Yeha also owns the oldest standing temple in sub-Saharan Africa and other geologically important heritages. They have geotourism values that are not yet well described by tourist guides. Axum and the souurounding Yeha act as tourist attractions (Figure 12) due to their geological and geomorphological resources. It is one of great potential for geotourist trails for up to three days itinerary. Therefore, this is one of the reasons hindering sustainable tourism development in the region. During the study, the deadliest war on Tigray from November 2020 to January 2023 was the major limitation.

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DEVELOPMENT STRATEGY FOR SPECIAL INTEREST TOURISM (SIT) THROUGH COMMUNITY-BASED ECOTOURISM (CBET) IN PERAWAN BEACH TO PROMOTE A SUSTAINABLE ECONOMY

Sumarmi[*]
Universitas Negeri Malang, Department of Geography, Faculty of Social Science, Malang, Indonesia, e-mail: sumarmi.fis@um.ac.id

Syamsul BACHRI
Universitas Negeri Malang, Department of Geography, Faculty of Social Science, Malang, Indonesia, e-mail: syamsul.bachri.fis@um.ac.id

Adellia Wardatus SHOLEHA
Universitas Negeri Malang, Department of Geography, Faculty of Social Science, Malang, Indonesia, e-mail: adellia.wardatus.2107218@students.um.ac.id

Elya KURNIAWATI
Universitas Negeri Malang, Department of Sociology, Faculty of Social Science, Malang, Indonesia, e-mail: elya.kurniawati.fis@um.ac.id

Ariyan Rahman HAKIKI
Universitas Negeri Malang, Department of Geography, Faculty of Social Science, Malang, Indonesia, e-mail: ariyan.rahman.2107218@student.um.ac.id

Tabita May HIDIYAH
Universitas Negeri Malang, Department of Geography, Faculty of Social Science, Malang, Indonesia, e-mail: tabita.may.2107218@students.gmail.um.ac.id

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Abstract: Perawan Beach is a popular tourist destination due to its unique and beautiful natural views. The research aimed to: (1) identify the carrying capacity of the environment in developing ecotourism in Perawan Beach; (2) identify the economic conditions of the community around Perawan Beach to develop ecotourism; (3) identify community participation in developing ecotourism in Perawan Beach; (4) identify Special Interest Tourism (SIT) activities that are fit and attractive to tourists at Perawan Beach; and (5) develop optimization of Community-Based Ecotourism (CBET) strategies through Special Interest Tourism in Perawan Beach to promote the sustainable economy. This research method used the explanatory sequential mixed methods design. Data collection methods include field tests, observations, and interviews. The data analysis technique used is SWOT analysis using a quantitative descriptive approach based on the results of the IFAS and EFAS matrices. The SWOT analysis results demonstrated that the development of the tourism area in Perawan Beach is currently in quadrant III, indicating that development strategies must be optimized to address weaknesses and support existing opportunities. The primary area development opportunity that can benefit tourist attractions is to increase tourism activities at the Pedotan and Gundang Wetan attractions through Special Interest Tourism (SIT). Moreover, it is essential to develop tourist attractions and integrate the ecological value of the area through edutourism-based development. Details of area development can be carried out in a sustainable manner, beginning with community participation, visitor training for environmental preservation, and training through Special Interest Tourism activities located in the main area of Perawan Beach, the Pedotan area, and the Gundang Wetan area.

Key words: community-based ecotourism, special interest tourism, development strategies

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INTRODUCTION

Coastal areas offer many benefits to the surrounding community. The environmental characteristics that define the boundary between land and water create an area filled in natural resources with unique characteristics in each location (Bungău et al., 2019; Husamah and Hudha, 2018). Some of the many resources that exist in coastal areas, such as fisheries, marine transportation infrastructure, the maritime industry, tourism, mining, and settlements, as well as the majority of industrial and residential activities, are found in coastal areas (Manik, 2019). If the coastal area focuses on developing the tourism sector, it can improve the economy, empower communities, maintain the ecology, and preserve local culture

[*] Corresponding author

(Ciacci et al., 2021), allowing for its continued use in the Indonesian coastal environment (Astuti et al., 2020). Perawan Beach, like other beaches, is a popular tourist destination due to its unique and attractive natural environment (Sahrina et al., 2022). However, the development is not aligned with other beaches in South Malang. This beach is still very attractive, as evidenced by an area untouched by tourists, tourism developers/investors, or official publications (Interview, 2023).

This is likely a concern given that the area has been open to tourism since 2007 (Interview, 2023). The development of tourism at Perawan Beach is particularly slow, in contrast to the near beaches, which are able to support the "thousand beaches" tourism branding of the South Malang areas (Muluk, 2020). The incredible views of the mountain ranges along the route can provide relief to exhausted travelers. There are more areas to see, including plantations for huge trees of all different types, coffee, cocoa, and coconuts. Tourism development in Perawan Beach requires attention to a number of factors, including increasing promotion, conserving the environment through community participation, developing a variety of tourist attractions, completing supporting facilities, and enhancing the quality of human resources, to correspond with the objectives of sustainable development in terms of ecological, economic, and social dimensions that can be balance with culture (Cărbunar et al., 2022; Parmawati et al., 2020). Furthermore, tourism development that is quite diverse can operate more effectively if an appropriate development strategy is implemented (Sumarmi et al., 2021).

The development of ecotourism is an important strategy for promoting coastal tourism. The characteristics of this strategy are the reason that Perawan Beach, with better resources such as vegetation variations and local uniqueness, will be very promising to deliver progressive benefits through ecotourism development strategies (Santoso et al., 2019). This is aligned with information received from coastal managers indicating that they have difficulty directing the pace of area development despite the potential for environmental criteria to be developed as a tourism destination (Interview, 2023).

Based on the actual conditions in the field by collecting the results of observations and measurements, this study aimed to describe the condition of the area and design an optimization strategy for tourism development. The Perawan Beach area has a good opportunity of continuing to develop as a tourist destination. Observations on the field demonstrated that two major attractions had not been optimally developed due to various limitations. Therefore, the results of this study aimed to design the development of a sustainable tourism area based on an ecotourism development strategy supported by the main supporting tourist attractions, namely Pdotan and Gundang Wetan. The ecotourism strategy refers to diverse ecological conditions, amazing views, and unique landscapes, as well as opportunities for increasing the economy through community participation, in order to maintain the environment and support sociocultural communities (Bungău et al., 2019: Arrasyid et al., 2021). This study is expected to optimize regional development strategies by focusing on environmental conditions and ecotourism (Nasruddin et al., 2019). Ecotourism is a sustainable tourism development concept that integrates tourist activities with conservation with the goal of protecting nature, supporting the economy, and educating the public about environmental issues (Stronza et al., 2019). Along with its development, ecotourism has evolved into a strategy to build a stable economy by playing an essential role in environmental management and local community participation (Jaya et al., 2022). This is supported with the principle of community-based ecotourism, which requires simultaneously supporting the community and conserving the environment through sustainable tourism (Giriwati et al., 2019).

The sustainable community-based ecotourism strategy can be implemented in marine and coastal areas with tourism activities such as conservation, special interest tourism, and limited interest tourism (Wahono et al., 2019). The Community-Based Ecotourism (CBET) development model can be implemented through a multidimensional environmental, cultural, social, economic, and infrastructure approach to support the sustainability of ecotourism (Cărbunar et al., 2022; Nurhayati et al., 2019). As one of the beaches that did not receive optimal management, Perawan Beach has plenty of tourism development potential. Perawan Beach has a natural landscape with clear water and beaches with brownish-white sand. Perawan Beach is famous for its unique name, which attracts the curiosity of tourists. Perawan is the name given to this beach since it is still attractive and is rarely visited by visitors. Furthermore, this beach has a unique attractiveness due to its U-shaped formation, as if surrounded by two hills, which contributes to its beauty. The waves striking the shoreline and shattering the coral contribute to the exotic appearance of Perawan Beach. Tourists are not permitted to swim at Perawan Beach due to the huge and powerful waves, but they can enjoy the landscape around the beach and play in the sand on the beach, as well as in the water in the Pedotan and Gundang Wetan areas. Tourists can also take advantage of coastal cypress trees that were intentionally planted to prevent erosion as photo backdrops. Moreover, behind the dense seashore pine trees is a river mouth that is typically used for fishing by locals. Also, there are now floating net cages (KJA) on Perawan Beach that serve the purposes of fish farming, research, cycling trips, rowing, and nature tourism. One of the developments is Community-Based Ecotourism (CBET).

Community-Based Ecotourism (CBET) has the potential to create a blue economy through the use of sustainable marine resources for economic development, social welfare, and the protection of marine ecosystems. Implementation of Community-Based Ecotourism (CBET) plays a significant role in ecosystem protection, diversification of livelihoods, financial supports, and distribution of conservation benefits to remote areas if administered with the proper leadership and support (Phelan et al., 2020). Special interest tourism is a form of tourism that provides for specific preferences or interests of tourists (Sumarmi et al., 2020). This indicates that tourists visit to pursue or engage in activities that correspond with their interests or hobbies. There are many types of special interest tourism, including culinary tourism, cultural tourism, nature tourism, sports tourism, archaeological tourism, shopping tourism, and religious tourism (Zhang et al., 2023). Individual interests and preferences can be accommodated on special interest tourism, which typically provide a more in-depth experience in a particular area of interest. Community-based ecotourism is an approach to managing and developing tourism that involves active community participation and direct community benefits (Sumarmi et al., 2021). This strategy prioritizes environmental sustainability, community empowerment, and cultural and natural preservation. Local communities are directly involved in planning, managing, and benefiting from tourism operations in their area in community-based ecotourism (Zamzami et al., 2021). Local communities participate in decision-making, natural resource management, infrastructure development, and the delivery of tourism services and experiences (Giriwati et al., 2019). Some essential principles of community-based ecotourism include community participation, environmental sustainability, community empowerment, and cultural and heritage preservation (Nicolaides, 2020).

The primary objective of community-based ecotourism is not only to promote environmental tourism, but also to guarantee appropriate economic and social benefits for local communities (Phelan et al., 2020). This helps to minimize the negative impacts of conventional tourism while maximizing the positive potential in terms of environmental preservation, culture, and local community welfare (Husamah and Hudha, 2018). Thus, the development of sustainable special interest tourism can employ a framework that integrates environmental sustainability, community empowerment, and cultural preservation in the community-based ecotourism (Machado et al., 2019; Osman et al., 2018). These two approaches can have more beneficial effects on the development of sustainable tourism as a whole if they are implemented together.

Many research investigations on the development of Community-Based Ecotourism (CBT) strategies in Indonesia are frequently conducted, including: Community-Based Ecotourism (CBT) development for fishing tourism (Sumarmi et al., 2020), Community-Based Ecotourism (CBT) development on Lombok Island, Indonesia (Kuijstermans, 2020), Community-Based Ecotourism (CBT) for turtle conservation in West Sumatra (Zamzami et al., 2021), Community-Based Ecotourism (CBT) turtle conservation at Bajul Mati Beach (Irawan et al., 2022), Community-Based Ecotourism (CBT) for mangrove conservation (Sumarmi et al., 2021; Sumarmi et al., 2022), Conservation of cultural tourism on the Goa China Beach (Astina et al., 2021), and CBT on Pulau Merah, Banyuwangi (Sumarmi et al., 2021). Meanwhile, only few of these studies have investigated the development of special interest ecotourism on the coast. This study emphasizes on the development of a sustainable economy through the community-based management of special interest tourism. Based on the background of the problems above, this article aimed to: (1) identify the carrying capacity of the environment in developing ecotourism in Perawan Beach; (2) identify the economic conditions of the community around Perawan Beach to develop ecotourism; (3) identify community participation in developing ecotourism in Perawan Beach; (4) identify Special Interest Tourism (SIT) activities that are fit and attractive to tourists at Perawan Beach; and (5) develop optimization of Community-Based Ecotourism (CBET) strategies through Special Interest Tourism in Perawan Beach to promote the sustainable economy.

MATERIALS AND METHODS

This research was conducted at Perawan Beach, in Sidoasri Village, Sumbermanjing Wetan District, Malang Regency, East Java, Indonesia in 2023. This area is located in the South Malang coastal areas with a distance of ± 64.1 Km from Malang City (Figure 1). This study utilized both quantitative and qualitative research methods, also known as mixed method research. The research design implemented refers to the explanatory sequential mixed methods design, in which the primary research is conducted through quantitative research, the research results are analyzed, and then the research results are explained in more detail through qualitative descriptions so that the integrity of the research can solve problems (Creswell and Creswell, 2017).

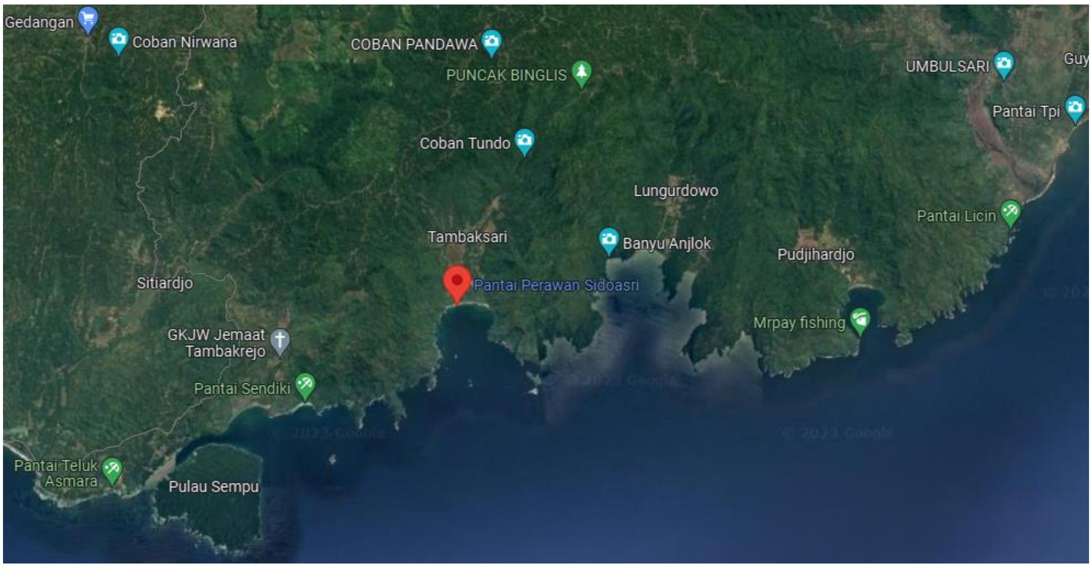

Figure 1. The Location of Perawan Beach (Source: Google Earth)

The data collected in a mixed-methods research design consists of both primary and secondary data. The following methods were used to collect primary data: (1) field observations of the sand beach area, the Pedotan area, the Klatakan area, and Gundang Wetan, the range of cypress trees, and the mangrove area; (2) field measurements of the length and width of the beach, the length of the Pedotan area, and the length of the Klatakan area; (3) in-depth interviews with tourism managers, village government leaders, MSMEs as tourism managers, including special interest tourism, local communities, and visitors (Sumarmi et al., 2020). Meanwhile, secondary data collection was conducted using monographic data from Sidoasri Village to examine tourism-supporting environmental conditions, infrastructure quality, and marketing strategies (Hanafiah and Zulkifly, 2019; Truong et al., 2020). This study applied descriptive analysis using SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis and descriptions of environmental suitability classifications for Perawan Beach tourism. The data analysis technique based on the SWOT framework consists of two stages of analysis: 1) identifying the primary factors (natural resources, human resources, and tourism supporting factors) and 2) evaluating the Internal Factor Analysis Summary (IFAS) and External Factor Analysis Summary (EFAS) (Fafurida et al., 2020). The weight of each factor was determined based on the results of interviews with individuals involved in the development of Perawan Beach ecotourism, as well as field observations and measurements of actual conditions. Then, the results of this evaluation will be categorized according to the SWOT matrix (Figure 2) so that the best decision alternatives can be identified and used as a design basis for optimizing the development of Perawan Beaches with Community-Based Ecotourism (CBET) based on special interest tourism for sustainable community economic development. The research flow is shown in the following (Figure 3).

RESULTS AND DISCUSSION

The carrying capacity of the environment in the development of Perawan Beach ecotourism

Perawan Beach has a very adequate length and width and is shaped like a basin, giving it the look of being surrounded by a bay. This beach's sand is white and tends to be brown. Green plants, such as sea cypress trees and *keben* trees, flourish on the coastal area and contribute to its beauty. Administratively, Perawan Beach is located in Sidoasri Village, Sumbermanjing Wetan District, Malang Regency. This beach is called Perawan because it is not widely known or visited by people. The view of Perawan Beach is shown in (Figure 4).

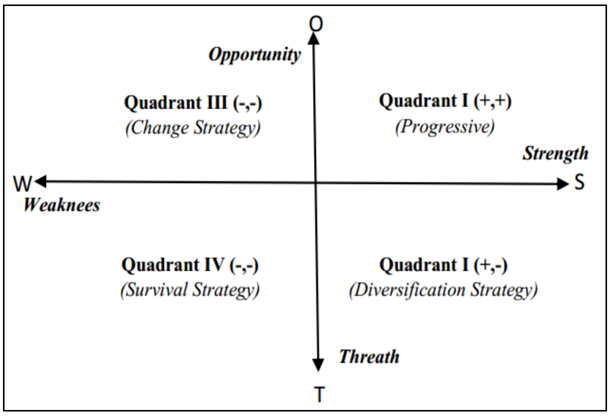

Figure 2. Hierarchical calculation of internal and external SWOT factors (Source: Purwohandoyo et al., 2020)

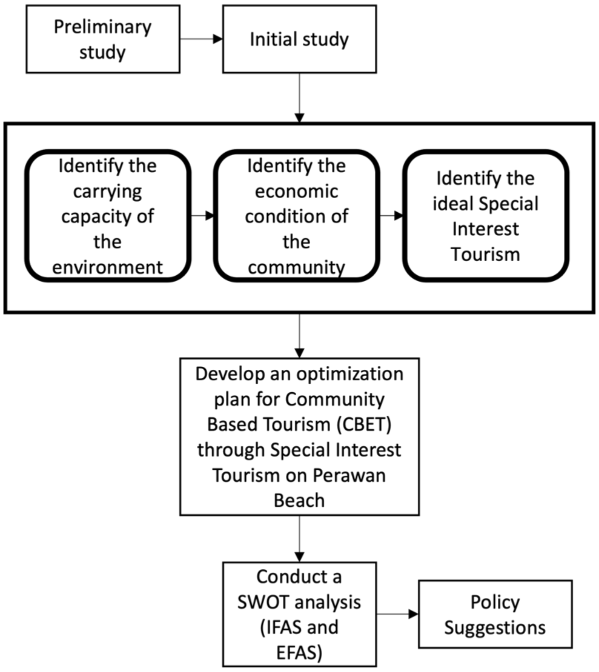

Figure 3. Research Flow Chart (Source: Research Analysis, 2023)

However, it is less well-known than beaches in other Sumbermanjing Wetan Districts. Therefore, it must be developed into a more appealing coastal tourism destination with a focus on special interest tourism. The Government of Malang Regency continues to optimize the potential of Perawan Beach via the Culture and Tourism Office (*Dinas Budaya dan Pariwisata*) of Malang Regency. Currently, the development of Perawan Beach is centered on several enhancements. The coastal access road is in dire need of immediate improvement. Meanwhile, a number of additional facilities, including parking lots, rest areas, guesthouses, and restaurants that are not yet located on the coastal area, are in need of repair. Perawan Beach was opened in 2007 along with Sidoasri Beach to provide administrative information (Interview, 2023). This area has been established for quite some time, but it is still inaccessible to tourists, as is the case with other beach tourism in the South Coastal Area of Malang.

Therefore, urgent efforts are required to enhance the area's value by balancing ecological value. Perawan Beach's natural environment is ideally suited for use as a tourist destination. A supportive coastal environment is evident from the coast's length of nearly 2 kilometers (1,870 meters), its average width of 25 to 30 meters, and its gentle slope of 11.8% (field observation, 2023), so that visitors have a comfortable space that is quite extensive along the coast. Along the coastal area of Perawan Beach, dense vegetation and shrubs/savanna cover the land. The weather conditions are typically cloudy with an average wind speed of 10-8 m/s, allowing tourists to camp.

This beach classification includes curved beaches that are inclined like small harbors and have sandy beach morphology, so that fine to medium-sized sand dominates the beach material (Primary data, 2023). The different changes of the coastal environment indicates that the morphological state of Perawan Beach is really suitable for development as a tourist destination. This beach has an estuary known as "Gundang Wetan" at the easternmost beach. The Gundang Wetan Estuary (Sidoasri River) has a shallow depth and gentle currents, allowing tourists to enjoy boats there. The Gundang Wetan estuary can be reached by following the path around the shrubbery, the coastline to the easternmost point, or the path nearest to Klatakan Beach. This is really interesting because the hidden location will provide tourists with enjoyment. Before arriving at the Gundang Wetan estuary, tourists will see a large lake or pool of water caused by flooding, known in the local language as "Pedotan," which translates to "the flow is cut off/stuck". The water is calm and capable of giving tourists a "healing" feeling, which can be an advantage for Perawan Beach as a tourist destination. The view of Gundang Wetan estuary is shown in (Figure 5).

The toponomy of the Perawan Beach, which is rarely visited by tourists, accurately represents this location. Tourists can observe the high ecological and conservation importance due to the extensive land cover, diverse vegetation, and protection. Beginning at the entrance, visitors will observe trees along the coast and vegetation along the path leading to the estuary of Gundang Wetan. This condition indicates that the coastal area has not experienced many significant ecological changes since it opened in 2007. On Perawan Beach, vegetation includes *Pes-caprae*, *Barringtonia Asiatica* (keben), *Pandanus Odorifer* (sea pandanus), *Cocos nucifera* (coconut), *Ipomoea aquatica* (kale), *Casuarina Equisetifolia* (sea pine), *Rhizophora* (mangrove), and shrub grassy vegetation. The distribution of this vegetation also indicates that the area is still in natural condition and that sustainability is maintained, allowing it to serve as a model for the development of coastal ecological education within the context of sustainable tourism at Perawan Beach. The distribution of vegetation in Perawan Beach coastal areas is shown in (Figure 6). An inventory of Perawan Beach's diverse and well-maintained ecological conditions can be used as an appealing reason to attract tourists. Perawan Beach, based on its characteristics, is capable of being developed in a sustainable manner; naturally, this coastal area has many benefits. This is because the sustainability of coastal tourism quality can have long-term effects on society and the environment. The long and relatively wide coastline environment, the slope of the coastal slopes, the distribution of vegetation, and the very diverse tourist attractions should make it possible to optimize the area's development so that it can provide ecological and economic benefits for enhancing human welfare.

Figure 4. The View of the Perawan Beach (A. Keben fields on the coast of the Perawan Beach; B. View of the Right Side of the Perawan Beach; C. Measuring the Length of the Perawan Beach; D. Right Side of the Perawan Beach where seawater is flowing to the Shrimp Pond) (Source: Research Documentation, 2023)

Figure 5. A. The View of the Gundang Wetan from right side; B. The View of Gundang Wetan from the left side (Source: Research Documentation, 2023)

Figure 6. The Vegetation of Coastal Perawan Beach (A. Keben plant; B. Trumpet Flower; C. Sea Pandan; D. Coconut Tree; E. Sea Pine; F. Waru Doyong/tilted tree) (Source: Research Documentation, 2023)

The ecological diversity and attractiveness of charming coastal tourism in Perawan Beach raises the question as to why less people are interested in visiting. Due to interruptions from various factors, Perawan Beach is still categorized as being in the early stages of growth when adjusted for the main attributes possessed by tourists (Interview, 2023). Indicators of the psychological needs of other tourists, such as the emergence of perspectives in the form of feedback of trust in managers. or experienced tour providers, also contribute to the fulfillment of tourist needs (Putra et al., 2017; Rai et al., 2015). Environmental sustainability and cultural sustainability are required for the sustainable development of tourism carrying capacity (Sumarmi et al., 2022). Therefore, given the field conditions and signs that tourism on Perawan Beach has not been fully developed, a comprehensive development strategy is required.

The economic conditions of the community in Perawan Beach for the development of ecotourism

Sidoasri Village is one of the localities in Malang Regency's Sumbermanjing Wetan District, and it covers a total area of 2,000 hectares. Geographically, Sidoasri Village consists of two hamlets, namely Tambakasri Wetan hamlet and Tambakasri Kulon hamlet. Namely Virgin Beach and Klatakan Beach. The community monitoring organization (POKMASWAS) of Sidolestari is responsible for the management of coastal resources in Sidoasri Village. The activities of POKMAWAS depend heavily on the availability of a government support program; if there is none, they are usually unemployed and do not carry out POKMASWAS duties as they should. Therefore, the POKMASWAS strategic plan is essential for the management of coastal resources in Sidoasri Village. The majority of the residents of Sidoasri Village work in the agricultural and fishing industries. Many fishermen travel to sea during the fishing season, but if it is not the fishing season due to bad weather, many of them shift to the agriculture sector by utilizing existing land. Perawan Beach is a toponym that defines an area that is still quite green and rarely touched. In terms of accessibility, this area's terrain is quite challenging, but it is still possible to visit. Aside from accessibility issues, the uniqueness and beauty of the coastal environment make this area a natural tourist destination that is highly accessible to visit. However, there are many opinions among tourists that the accessibility aspect is not a limitation to tourism activities (Purnomo, 2019). Managers are also aware of the situation but have been unable to do much because building facilities costs large funds, therefore they have to find other solutions to ensure the sustainability of Perawan Beach as a tourist destination (Interview, 2023).

Sidoasri Village is one of the localities in Malang Regency's Sumbermanjing Wetan District, and it covers a total area of 1,900 hectares. Geographically, Sidoasri Village consists of two hamlets, namely Tambakasri Wetan hamlet and Tambakasri Kulon hamlet. Namely Virgin Beach and Klatakan Beach. The Community Monitoring Organization (Kelompok Masyarakat Pengawas - POKMASWAS) of Sidolestari is responsible for the management of coastal resources in Sidoasri Village. The activities of POKMAWAS depend heavily on the availability of a government support program; if there is none, they are usually unemployed and do not carry out POKMASWAS duties as they should. Therefore, the POKMASWAS strategic plan is essential for the management of coastal resources in Sidoasri Village.

Community participation in the development of Perawan Beach ecotourism

The management of Sidoasri Village have been developing Perawan Beach since 2007, but its development still requires attention. This is evidenced by the condition of sustaining tourism, which is still very limited, and the challenges of the topography to reach this location, which continue to discourage tourists from visiting. In general, terrain conditions are not an issue for tourists, but the difficulty of access or the terrain that tourists face has a significant impact on their decision to visit. Considering the distance and terrain conditions that tourists must across, this beach's accessibility still requires optimal improvement. The management had initiated the creation of a coastal environment as part of the development efforts. Water tourism activities in the Pedotan Lake area have also increased, with the addition of water duck adventures and selfie snaps in the middle of the lake. Managers who work closely with the community have also provided facilities to support tourism activities, including a homestay, a shop that provides tourists' basic requirements (such as food and camping equipment), five toilets and a prayer room (Field observation, 2023). Given the previous development efforts, which typically drop, analyzing to identify weak points as a basis for developing a strategic plan to strengthen tourist aspects is necessary.

Table 1. The Analysis IFAS dan EFAS matrices (Source: Research Data, 2023)

Internal Factors (IFAS)				
Strengths (S)		**Weight**	**Rating**	**Score**
1.	It has a broad coastline that is typically inclined.	0.10	5	0.50
2.	There are additional tourist attractions, namely Pedotan and Gundang Wetan, with the water is extremely calm.	0.20	5	1.20
3.	There is available equipment and a spacious camping area.	0.10	5	0.50
4.	Vegetation is very diverse and has preserved the sustainability.	0.20	5	1.20
5.	The parking lot is large.	0.10	4	0.40
6.	Beachside rest spots and tree houses are available.	0.15	4	0.60
7.	Facilities, such as prayer room, gazebo, stalls and toilets are available	0.20	5	1.20
8.	There is already a beach tourism manager.	0.10	3	0.30
9.	Beach security is quite helpful.	0.10	4	0.40
Total				**6.30**
Weaknesses (W)				
1.	Lack a development strategy plan.	0.25	5	1.25
2.	Accessibility is very distant, and the terrain is difficult to travel.	0.20	5	1.00
3.	Very few promotional efforts are made.	0.30	4	1.20
4.	Information regarding accommodations is limited.	0.20	5	1.00
5	Outside of camping grounds, accommodations (homestays) are quite isolated and limited.	0.30	3	0.60
6.	The coast and other supporting tourism objects have not been developed to their maximum potential.	0.25	3	0.75
7.	Due to limited financial and human resources, managers struggle to develop the area.	0.20	4	0.80
8.	Previous attempts to construct attractions were left.	0.20	4	0.80
9.	Coast guard officers are minimal.	0.20	3	0.60
10.	There is no cooperative synergy between organizations and management.	0.30	4	1.20
Total				**9.20**
Strengths - Weaknesses		**-2.90**		
External Factors (EFAS)				
Opportunities (O)				
1.	Expanded tourist attractions, particularly at Lake Pdotan and Gedung Wetan, including canoes, river crossings, water ducks, and APVs on the beach sand.	0.30	5	1.50
2.	Preservation of coastal vegetation facilitates the development of educational tourism relating to coastal ecological sustainability.	0.30	5	1.50
3.	The coastal environment is refreshing and restorative because it is isolated from the community.	0.15	5	0.75
4.	There are many panorama tourist attractions, so it is possible to take some fun selfies.	0.25	5	1.25
5.	Close to the beach designated for fishing activities (Klatakan Beach), so that sea food products can be developed to serve the needs of tourists.	0.15	4	0.60
6.	The cost of a visit is very cheap.	0.20	3	0.60
7.	The toponymy of the area known as "Perawan Beach" is very suitable and may attract the curiosity of tourists.	0.20	5	1.00
Total				**7.20**
Threats (T)				
1.	The waters are quite high and a flood occurs annually.	0.20	4	0.80
2.	Tourists can become disappointed due to difficult accessibility.	0.30	4	1.20
3.	The beaches of South Malang, which are managed and significantly more appealing to tourists, are very competitive.	0.30	4	1.20
4.	Lack of awareness on the part of tourists to sustain the beach's cleanliness.	0.30	3	0.90
Total				**4.10**
Opportunities - Threats		**3.10**		

The recommendations for the development of the Change Strategy area are located in Quadrant III, where the results of the IFAS and EFAS analyses of Perawan Beach are presented. Change Strategy in quadrant III (negative, positive) with a majority of a weakness value of -2.90 and an opportunity value of 3.10 indicates the need for a change in previously implemented strategy or policy, as it is believed that previously implemented policies or development efforts will be unable to capture opportunities while improving the performance of managers (Purwohandoyo et al., 2020).

Recommendations for strategy changes were gathered from a data inventory on Perawan Beach, which specifically requires a plan for creating a coastal tourism area so that indicators from the development strategy can identify and control opportunities. Based on IFAS results, which indicate that the value of weakness is higher than the value of strength (-2.90), this indicates that previous efforts have not produced significant results, particularly in terms of tourist attraction. In comparison, on the EFAS factor, the opportunity value is significantly higher than the threat value (3.10); therefore, if the weight is high in the opportunity assessment, this requires special attention to reduce the previous weakness score and will not contribute value to the threat factor. The matrix of SWOT Analysis of Perawan Beach is shown in (Figure 7).

In the IFAS (internal) factor, it can be observed that the weight is placed on weaknesses that have a significant impact on tourism development and can become a challenge if they are not appropriately managed. Starting with the absence of a tourism development strategy, limitations in managing tourist attractions, and very limited promotion efforts, the number of weaknesses in tourist sites increases. As previously explained, there have been efforts to innovate and develop attractions, but the lack of tourist interest and the small regional income have made these efforts ineffective. This may be observed in various pictures of the growth of the area, where the quality of its utilization has significantly declined. If this condition continues and no effort is made to establish an appropriate development strategy, it will be extremely difficult for Perawan Beach to compete with other beaches, particularly in terms of its economic impact on managers and surrounding communities.

The results from the IFAS and EFAS quadrants indicated a large number of weaknesses that are opposite to the value of opportunities, which can be used to identify the obstacles to development. Accessibility, governance, funding factors, and the procurement of tools were identified as factors that make it difficult for this sector to increase existing opportunities. The manager explained that they had taken the initiative to develop the area by promoting and acquiring supplementary tools, but had not maximized the area's potential. They also complained that related authorities were not present in directly to provide both financial and technical equipment support, so that managers with limited funds admitted to encountering many challenges. Furthermore, the decreased number of managers has an effect on regional governance, such as reducing promotional efforts that require technology or other innovations to develop tourist areas that are difficult to implement (Interview, 2023). According to the results of the IFAS and EFAS analyses, the high results for weaknesses and opportunities align with visitor feedback. Visitors indicated that they were interested in visiting the area after hearing the name "Perawan Beach" and reviews from other visitors who described the area as very attractive. This area is essentially very attractive and free of visitors, giving it the feeling of a "private beach" where beach tourism can give the impression of ownership due to the peaceful environment. However, they also provided a number of responses regarding the difficulty of accessibility and the lack of tourism support facilities, such as a variety of tourist support, accommodation, and a sense of security because the area is so quiet and there is no area manager responsible for the beach tourism environment.

Developing a suitable and attractive Special Interest Tourism (SIT) in Perawan Beach

Further, the development of the Perawan Beach tourist area faces significant challenges. According to the results of the IFAS and EFAS matrices and a number of visitor responses, this area requires development innovations in order to become more attractive to tourists. This is further supported by the lack of tourist interest due to the lengthy distance to travel and the similarity of the coastal environment to other coastal tourism destinations in South Malang. Therefore, it is necessary to develop attractions with unique characteristics in order to increase the value of tourist destinations in Perawan Beach and to provide visitor satisfaction. Based on the results of the weaknesses and opportunities, it is evident that Perawan Beach has additional attractive development opportunities. This correlation can be observed in the poor management of tourist attractions in Pedotan and Gundang Wetan, which have a tremendous opportunity to boost tourism value. These two potential tourist destinations are situated between the beach's midpoint and its eastern edge. This beach has a long coastline and generally flat, fine brown sand, making it very simple for visitors to reach these two tourist destinations.

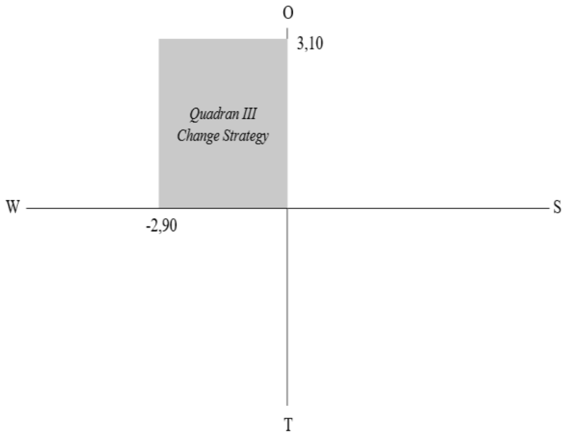

Figure 7. Quadrant SWOT IFAS and EFAS Perawan Beach (Source: Research Analysis, 2023)

The Pedotan tourist attraction is located 32 meters from the beach's shore in the midst of the coastal shoals of Perawan Beach. This attraction is formed by floods that occur throughout the year until the water is trapped in a low area and creates a lagoon pool measuring 630.93 meters in length. The calm and clear water conditions at the Pedotan attraction present an excellent opportunity to develop new tourist activities such as selfies, water ducks, and canoeing. The manager must pursue the management of the Pedotan attraction as an addition to the special interest tourism in order to respond to beach conditions that are typically risky for tourists due to high waves. This urgency can also support the area's development strategy due to the area's ability to provide development benefits varying from boosting the economy to supporting nature tourism education activities, as a result of its clean and diversely vegetated environment.

Moreover, the tourist attraction that represents a development opportunity is the Gundang Wetan attraction, which is located at the eastern edge of the beach curve. This area is an estuary with gentle river currents and an average width of 25 to 58 meters. Possibilities for the utilization of Gundang Wetan tourism may reach beyond 600 meters, with an estimated area of over 21,000 m^2 that can be used to offer water tourism activities that support beach tourism. The location of the estuary, which is connected to rivers along the coast that continue to enlarge throughout the year as a result of annual floods, is physically responsible for the high area value. In contrast to the Pedotan attraction, however, there is no optimization of area management. Therefore, the existence of significant challenges to Perawan Beach tourism's ability to attract tourists and maintain with other beaches can be overcome by optimizing the use of this attraction. The location of the Gundang Wetan attraction is also in close reach to the water's edge, allowing tourists, particularly children, to experience water tourism, such as renting canoes and boats to travel along the river. The tourism opportunities in Pedotan attraction areas is shown in (Figure 8).

Efforts to promote Pedotan and Gundang Wetan attractions are essential to the development of special interest tourism at Perawan Beach. These two sustaining beach tourism attractions have a very good chance of accommodating limited beach tourism on Perawan Beach. In addition, these two attractions are able to offer other characteristics that distinguish them from developed beaches. So that the previously small size of the attraction will expand along with its development and innovation. One of the alternatives to developing this area is the management of regional attractions as the primary and additional tourist objects (Putra et al., 2018). The location of estuary that connects Gundang Wetan areas and the sea is shown in (Figure 9).

Figure 8. The Tourism Opportunities of the Pedotan Attraction (A dan D Tanaman Kangkung yang tumbuh di Pedotan, B dan E. Tempat Spot Foto, C. Kondisi Air Jernih di Pedotan, F. Jajaran Pohon Cemara yang ada di Sebelah Timur Pedotan (Source: Research Documentation, 2023)

Optimizing the Community Based Ecotourism (CBET) strategy through special interest tourism at Perawan Beach to improve the community's sustainable economy

The results of the assessment of internal and external factors reveal the main objective of the area's development efforts, namely the modification of the current development strategy. The community participation is needed to support the tourism development to be sustainable (Arinta et al., 2023). Based on the results of interviews with managers and visitors, this area does require a new strategy because management efforts were not previously guided by a specific strategy. Therefore, by responding to environmental conditions and responding to the challenges and trends of tourists where visitors are seeking more authentic experiences, opportunities to learn new things related to local conditions, and opportunities to interact with local residents (Machado et al., 2019), edutourism development strategies can be pursued even by focusing on the tourist attractions of Pedotan and Gundang Wetan. There is a strong possibility that the two attractions will be developed into important tourist attractions, and it is known that there is enough room to support tourism.

Figure 9. The estuary that connects Gundang Wetan and the sea (Source: Research Documentation, 2023)

The distance between the Pedotan and Gundang Wetan attractions is around 900 meters, creating a space between them that is heavily overgrown with vegetation. In addition, dense vegetation is located between these two attractions, which can still be accessed on foot by following the coastline or prepared trails. During the trip from the Pedotan attraction to Gundang Wetan, visitors are likely to see a variety of natural and maintained vegetation, including *keben* tree, sea pandanus, sea cypress, and mangrove, indicating that the area has a healthy ecology. The manager also stated that a number of plants were purposefully planted and cared for to preserve the coastal environment; therefore, it would be very beneficial if tourists gained experience in caring for the coastal environment. The vegatition surrounding Pedotan and Gundang Wetan areas is shown in (Figure 10).

Tourism education in coastal areas can be used as the basis for regional development strategies. The characteristics of tourist attractions that are new and different from the typical surroundings are indicators of current trends in tourism since they provide visitors with an opportunity to learn something new. This can be supported by the development of edutourism, particularly in the strategy of developing Perawan Beach which has very complex environmental conditions so that it is able to provide meaningful experiences for tourists when properly conditioned. Essentially, the concept of education and tourism can be applied to ecological learning at Perawan Beach, as tourists are presently able to acquire knowledge while traveling. Even though it's not ideal, tourists admit that they often learn something on unplanned vacations, and they even hope to learn more on planned vacations (Rahmat et al., 2020). Therefore, there is a connecting space between the attractions of Pedotan and Gundang Wetan which are full with various types of vegetation. It can be understood that the edutourism development strategy is feasible to implement to develop tourism.

Figure 10. Planting vegetation to support the sustainability of the coastal areas (A. Newly planted Keben trees; B. Mangrove trees planted; C. Banana trees) (Source: Research Documentation, 2023)

Several variables must be considered for systematic planning of edutourism development strategies supported by supporting tourist attractions in the Perawan Beach area. The main factors that must be prepared for the implementation of the strategy are supported by the two main supporting attractions of Perawan Beach, namely beginning with systematic development plan activities, open funding details between managers and local tourism offices, continuous implementation, and evaluation and monitoring processes to ensure the strategy's sustainability to be able to provide optimal benefits for tourism development (Sulaiman et al., 2019). Planning activities can include assessing the state of tourist areas, inventorying biotic diversity, incorporating cultural activities in the form of local events or celebrations, and planning the development of tools and supporting factors for educational activities such as plant seeds, planting tools, and training for managers to assist visitors. Through the complex conditions of the coastal environment, this area is also able to accommodate student learning activities starting from the scope of education on ecology, oceanography, to disaster. Therefore, cooperation with schools or colleges to turn this area into a natural laboratory is also part of strategic planning for regional development. By referring to field conditions and main obstacles in handling tourist attractions, it is expected to be able to accommodate the needs and demand for tourists. Moreover, tourism management for international destinations must be concerned with international standards, for example the uniqueness and excellent services and sustainable conservation of these tourist attractions are given high priority (Sumarmi et al., 2022). Optimizing the Community-Based Ecotourism (CBET) strategy based on special interest tourism in Perawan Beach to improve the sustainable community economy supported by comprehensive Pedotan and Gundang Wetan attractions is a strategic step that can be taken in the development of the Perawan Beach tourism area. Strategic initiatives that can be implemented are:

- Increase community participation in the tourism sector by enhancing ecotourism infrastructure and facilities.
- Involve stakeholders in management.
- Improve the quality of human resources for the community of Sidoasri Village and expanding networking for coastal area management.
- Involve the community in planning tourism development, including an active role between managers and local government officials, local communities who interact directly with tourists, stakeholders such as service providers and fishermen, as well as the participation of academics and the role of the government to accommodate the implementation of ecotourism development strategies.
- Inventory of current environmental, human, and economic carrying capacity as well as sociocultural functions to support the development strategy.
- Conduct ongoing training and education for managers and the neighboring community to help them comprehend the specifics of ecotourism area development based on special interest tourism.
- Specify the funding and monitoring of development efforts by involving various stakeholders, particularly the participation of local managers, the community as tourism support, the village management, and the tourism agency, as well as the fundamental elements required to enhance tourism development.

It has been demonstrated that the development of Community-Based Ecotourism (CBET) is more sustainable than other types of ecotourism due to its long-term resources and status as a tourism capital through sustainable marine conservation management (Ressurreição et al., 2022). The participation of local communities in the preservation of natural and cultural resources in marine protected areas can support the successful development of ecotourism that leads to sustainable development (Fafurida et al., 2020; Osman et al., 2018). This is in line with the relationship between community support for ecotourism development being positive. Large local community participation in the development of ecotourism can assist the community in achieving broad economic benefits and long-term well-being. This is directly related to the sustained positive effects of ecotourism on the economy, society, and environment (Rahman et al., 2022).

Ecotourism has the potential to improve local communities' livelihoods, raise revenue, and minimize economic vulnerability while achieving environmental sustainability (Wiredu et al., 2020). Ecotourism has a positive effect on the socioeconomic community in the form of employment opportunities, an increase in community businesses (accommodation and homestays), and an increase in community engagement (Ollivaud and Haxton, 2019). It also indicates that the development of ecotourism can generate employment and commercial opportunities for the local community. The ecotourism development strategy must be able to increase ecological sustainability and increase the economy of the community around tourism objects to be a sustainable income (Sumarmi et al., 2022). Moreover, community involvement in the development of ecotourism can increase public confidence in the credibility of the local government, as the community is invited to collaborate in planning, administration, and decision-making (Darda and Bhuiyan, 2022).

From a financial perspective, the existence of ecotourism that involves community participation can increase economic welfare through job recruitment, profit sharing, and infrastructure improvement for economic interests. From a social perspective, ecotourism can increase the knowledge and skills of the local community regarding ecotourism, the preservation of local culture, and the exchange of information with tourists. In the meantime, from a sustainability perspective, the community can actively contribute to safeguarding ecotourism areas, thus affecting the preservation of the local environment (Kia, 2021). Good cooperation between managers (the Forestry office, District Government, Village Government, and the community) is necessary for the sustainable management of beach tourism in order to improve the local economy (Sumarmi and Untari, 2022). In developing marine ecotourism, fishing communities can independently develop the tourism sector based on conservation principles, thereby enhancing the community's economy and achieving sustainable marine tourism (Wirakusuma et al., 2019). Therefore, fishing communities are in a strategic position to develop Community-Based Ecotourism (CBET) in order to create and balance favorable conservation, tourism, and finances (Zamzami et al., 2021).

The economic impact of Community Based Ecotuorism (CBET) is raising income, expanding employment prospects, and improving tourist willingness to pay, which can have an impact on increasing local government income (Cisneros-Montemayor et al., 2020). Whereas the development of Community-Based Ecotourism (CBET) can increase local government revenue, employment, the quantity and quality of facilities and infrastructure, local product trade, and tourism services (Harahab et al., 2021). Priorities for the development of Community Based Ecotourism (CBET) include: 1) developing potential ecotourism objects in a sustainable manner, 2) empowering coastal communities, 3) forming partnerships with domestic and private business units in order to increase attractions, amenities, and accessibility, 4) implementing conservation activities, outreach, and education on sustainable marine ecotourism, and 5) increasing supervision and law enforcement (Lelloltery et al., 2021). Efforts to develop ecotourism need to integrate ecotourism principles with local wisdom and involve all stakeholders, including local communities, at each stage of tourism development (Wondirad, 2019).

Therefore, the following fundamental policy strategies are required for the development of sustainable ecotourism: 1) increasing the role and responsibility of the community in planning, managing, monitoring, and controlling; 2) maximizing the entire potential of ecotourism to achieve sustainable tourism management; 3) involving synergies and collaboration to increase, maintain, and optimize ecotourism; 4) increasing the quality and quantity of infrastructure facilities to attract tourists; and 5) establishing to increase economic acceleration and growth that supports increasing local community income, 6) improve tourism management and human resources (Arinta et al., 2023; Putra et al., 2019; Sumarmi et al., 2021). Alternative strategies for developing ecotourism include: 1) maximizing the contribution of local communities through easy access to ecotourism resources; 2) resolving conflicts of interest from various stakeholders and common perceptions of ecotourism development; and 3) developing tourism diversification to enhance the community's livelihoods and ecological resilience, 4) regional or local leaders must make decisions based on facts and requirements through the formulation of appropriate policies, strategies, and investments in order to balance land use, conservation, and community needs (Angessa et al., 2022).

CONCLUSION

The primary factor in formulating regional development strategies is increasing the number of existing tourist attraction opportunities. Based on the results of the SWOT data analysis, specifically the IFAS and EFAS matrices, which indicate a weakness value of -2.90 and opportunity value of up to 3.10. The current position of tourism area development is in quadrant III, indicating that a shift in development strategy is required to address weaknesses and focus on opportunities. By increasing tourism activities at the Pedotan and Gundang Wetan attractions through special interest tourism, the most important opportunity for area development that can provide benefits for tourist attractions can be achieved. Both of these attractions have characteristics that define them from other South Malang beaches.

Furthermore, the available space between the two tourist attractions stretches from the middle to the end of the coastline curve and is filled with vegetation that is typical of the coastal area. Therefore, ecotourism-based development must be incorporated into the development of tourist attractions in order to preserve the area's ecological value. Details of area development can be implemented in a sustainable manner beginning with individual or group tourism activities, community involvement, education and training efforts through special interest tourism activities located in the main area of Perawan Beach, in the Pedotan area and Gundang Wetan area. The Special Interest Tourism that can be developed on Perawan Beach include surfing, paragliding, climbing hills, diving and rowing. This tourist attraction can develop if there is cooperation between tour managers, stakeholders and involves the local community. Future research can be conducted to determine the suitability each of Special Interest Tourism attraction in Perawan Beach area.

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THE CONNECTION OF SLOW FOOD PRINCIPLE WITH COMMUNITY- BASED TOURISM IN THAILAND: INVESTIGATING GENERATION Y PERCEPTION

Supaporn PRASONGTHAN
Kasetsart University, Faculty of Humanities, Bangkok, Thailand, e-mail: fhumsppr@ku.ac.th

Rabhas SILPSRIKUL *
Kasetsart University, Faculty of Humanities, Bangkok, Thailand, e-mail: fhumrbs@ku.ac.th

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Abstract: The slow food movement, a new gastronomic trend, arisen as a striking response to negative impacts of globalization with three principles of "Good, Fair and Clean. Community-based tourism covers a variety of local culture, especially local food products, services, and experiences. As the generation Y cohort represents a significant market for tourists, this article aims to explore the connection between slow food principle and community-based tourism, and evaluate slow food attributes that need to be improved related to Gen Y perspective. A questionnaire was used to collect data with 385 respondents. Five steps of the importance-performance analysis were evaluated to acquire reliability and validity issues. The findings imply the slow food principle associated with CBT food-related activities with high level of perceived importance and performance. The results of IPA reveal that the quality of food in CBT destination needs to be urgently managed to establish a memorable experience. A collaboration among CBT enterprises, government, private sector, and marketers to strengthen public awareness about slow food could be one of steppingstone toward sustainable development and healthy food culture.

Key words: slow food, Community-Based Tourism (CBT), Generation Y, Thailand

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INTRODUCTION

Food plays a critical role in human life as one of the necessities of life and exemplified as a medium that indicates the history of society and local cultures of different countries. Thai food is regarded as an important intangible cultural heritage both in socio-cultural and economic dimensions which related to local wisdom with three main values: nutritional, cultural, and medical value. The connection of food and tourism has been identified in several studies as national identity, regional cultural heritage with food-related products, services, and experiences of a traveler's destination (Giampiccoli et al., 2020; Lee et al., 2015; Lewis et al., 2021; Prasongthan and Silpsrikul, 2022). In the past 30 years, food consumption culture has changed according to globalization reflecting to consumers' food behavior change such as buying nutritional products in supermarkets, fast food consumption, restaurant visit, online shopping with delivery at home or pick-up, which become more important for them than material possessions (Hanus, 2018). The mass production of food is increasing, and human health problems have destructive effects, for instance obesity, heart related problems (Celebi and Genc, 2021).

In 1986 the slow food movement, a new gastronomic trend, arisen as a striking response to these negative impacts of globalization. Starting from a simple local protest fast food consumption in high speed, impact area of slow food has grown up exponentially as a social movement worldwide and as a transition process to eating slowly and healthfully culture (Celebi and Genc, 2021). Slow food concept gives importance to the art of cooking from the selection of raw materials, preparation of ingredients from natural farming, cooking with care and delicacy, reminiscing back to the traditional way of living, connecting to the local or community food culture. The principle of "Good, Fair and Clean" were introduced regarded to the underlined purpose of slow food that food on the plate must associated with the planet, the pleasantness of taste, preserve traditional dish and it should be produced in socially sustainable way, with an emphasis on social justice, inequities, respectful and fair conditions (Lee et al., 2015; Payandeh et al., 2020; Schneider, 2008).

In the context of tourism, travel destinations can incorporate food-related activities to enhance the tourist experience's connection with local heritage (Giampiccoli et al., 2020; Lee et al., 2015). Community-based tourism (CBT) is an alternative form of tourism that requires active participation of the local community and considers the sustainability of the environment, society, and culture of the community. CBT is present in many different geographical areas of the world, in particular developing countries and considered as a strategic to reduce negative effects of mass tourism and attain better living conditions (Lopez-Guzman et al., 2011). CBT covers a variety of local culture: natural environment, people, culture, superstructure, food, products, accommodations, products, food festival and entertainment (Han et al., 2019). Local food is one of the outstanding identities that the community often chooses to present as a tourism activity that tourists can participate including local food consumption, cooking class, food demonstration, and food products. In Thailand, CBT has

* Corresponding author

emerged in 1994 as a community development strategy, along with a prominent part of the domestic travel market (Kontogeorgopoulos et al, 2014). The survey by ministry of Tourism and Sport (2018) stated 303 CBT enterprises throughout Thailand located in rural areas where travelers can experience local way of life with beautiful natural environment. Several studies pointed out demand for this form of tourism in both domestic and international CBT travelers (Bunmajarinon and Kaewnuch, 2022; Giampiccoli et al., 2020; Han et al., 2019). Generation Y cohort (Gen Y), also known as Millennials are people who were born from 1982 to 2004 and representing a significant market for tourists (Okulicz-Kozaryn and Valente, 2019). The major traits of Gen Y include putting travel as their top priority, greater use of internet, motivate to explore new places, tend to seek out authentic local culinary experience, and spend a lot of money on good food while traveling (Ketter, 2021; Kim et al., 2018). This generation has based their travel decisions on culinary interests more than any other generations and was the dominant segment with most of the culinary tourism market share (Travel Weekly, 2016). In Thailand, Gen Y tourist has also become one of the main target groups with 40.79 percent market size and the survey indicated their travel behavior as FIT who tend to travel to beautiful attraction and spend the most expenditure on food and drink while traveling (Tourism Authority of Thailand, 2022).

In accordance with The Third National Tourism Development Plan (2023-2027) that highlight gastronomic tourism and slow tourism as main target for Gen Y (Ministry of Tourism and Sports, 2022). Since domestic tourists are the core market for CBT in Thailand and acknowledging that Gen Y has become main target group of Thailand tourism industry. The study aims to shed light on Thai domestic Gen Y tourist in the connection between slow food principle and community-based tourism, and evaluate slow food attributes that need to be improved related to Gen Y perspective. It is the interest of this research to compare the importance level of slow food principle applying in CBT and the performance of slow food principle applying in CBT perceived by Gen Y tourists. One of the approaches that has been widely used is the importance-performance analysis (IPA). In-depth understanding of the existing of slow food principle in the community-based tourism, will lead to an assessment of tourists' perceptions and policy formulation to promote local food based on the concept of slow food to attract tourism to various localities. Consequently, tourism continues to expand and benefits both directly and indirectly the country's economy. It is also a dissemination and continuation of cultural heritage to be known further.

LITERATURE REVIEW

Community based tourism (CBT)

Tourism has become one of the important industries in terms of economic contribution to the national economy for many developed and developing countries (World Travel and Tourism Council, 2018). However, the structure of the tourism industry has changed dramatically over the years with a greater interest in issues including sustainable development. Community-based tourism (CBT) has developed as an alternative form of tourism as well as a means of strengthening the community as managed and owned by the community, for community (Goodwin and Santilli, 2009).

Generally, CBT projects have been promoted based upon conservation initiative and collective benefits through the offering of tourism products, services and experiences which related to local culture and daily lives. CBT covers a variety of local culture: natural environment, people, culture, superstructure, food, products, accommodations, products, festival, and entertainment (Han et al., 2019). According to the international trade center (2022), different level of CBT products, services and experiences can be implemented starting from a short CBT visits that tourist support a local products / souvenir, eat a meal at a local home, and participate with CBT activities, to overnight village stays in homestays with exploration of local life. In Thailand, CBT has emerged in 1994 as a community development strategy with 303 CBT enterprises throughout Thailand located in rural areas where travelers can experience local way of life with beautiful natural environment (Ministry of Tourism and Sport, 2018). Local food is considered as one of CBT activities that the community often chooses to present as a tourism activity in which tourists can participate including local food consumption, cooking class, food demonstration, and food products. The value of authenticity of food within a local context is interesting to CBT travelers, hence the CBT-food related activities existed as part of the tourist experience (Giampiccoli et al., 2020). Various elements of CBT activities related with local food were studies including the production and marketing of traditional food and drink, farm visit, the use of indigenous foods, the use of indigenous medicine plant as products for the tourist, food festival, cooking lessons, food demonstration, food processing, food preservation, culinary trails etc. (Bhoophala and Daengbuppha, 2022; Giampiccoli and Kalis, 2012).

Slow Food Movement

In relation to the pressure of the socio-economic environment, stress, lack of real contact human relationship, the speed of the modern life, slow movement emerged in respond to the need to reconnect with people, the need to communicate, rediscover places, food, and drink (Moira et al., 2017). Slowness is at the core of activities by doing things in the right speed. The slow food movement, a new gastronomic trend, arisen as a striking response to these negative impacts of globalization in 1986. Starting from a simple local protest fast food consumption in high speed, impact area of slow food has grown up exponentially as a social movement worldwide and as a transition process to eating slowly and healthfully culture (Celebi and Genc, 2021). Over the years, slow food movement has become an important part of a transition process to eat healthy, safe and protect the producer and biodiversity. Slow food endorses the primacy of five sensory experiences: eyesight, hearing, smell, touch, and taste (Petrini, 2001).

As such slow food concept gives importance to the art of cooking from the selection of raw materials, preparation of ingredients from natural farming, cooking with care and delicacy, uniqueness of regional culinary heritage, reminiscing back to the traditional way of living, connecting to the local or community food culture, as well as achievement of long-term changes in biodiversity, and sustainability of production (Buiatti, 2011). In terms of food producers, the slow food movement supports and promotes small-scale production, rediscovering the value of local environment and its culture, and supporting rural communities' enterprises (Payandeh et al., 2020; West and Domingos, 2012).

The principle of "Good, Fair and Clean" were introduced regarded to the underlined purpose of slow food that food on the plate must associate with the planet, the pleasantness of taste, preserve traditional dish and it should be produced in socially sustainable way, with an emphasis on social justice, inequities, respectful and fair conditions (Lee et al., 2015; Payandeh et al., 2020; Schneider, 2008). According to Philippon (2015), the principle of "Good" refer as a fresh and appetizing seasonal food that satisfies the five senses and is part of local culture, "Fair" mean food with accessible prices for consumer and fair conditions for small-scale producers, while "Clean" represents food production and consumption that does not harm environment, animal welfare or consumer health. The slow food movement has not been considered only within the food market, but also in tourism context where food consumption is one of the main activities that influence tourist experience that involves rest, escapism, learning, thrill, status, and lifestyle (Santich, 2004). In addition, Slow Food Foundation for Biodiversity reports the connection between slow food and sustainable development in three directions: social, environmental, and economic sustainability. Several studies have investigated the relationship between slow food, sustainable development, and local food (Jung et al., 2014; Philippon, 2015). The study of Ahlawat et al (2019) presented the potential of developing slow food tourism in India with several suggestions to relevant stakeholders such as government support, marketing and promotion, public awareness, quality control etc. Nonetheless the study about the association between slow food principle and community-based tourism has not yet been discovered.

MATERIALS AND METHODS

Measurement

A quantitative approach was applied with a self-administered survey. The questionnaire comprised of four parts. The first part included demographic questions; respondents' gender, marital status, education, travel purpose, travel destination, type of accommodation and frequency of traveling.

The following sections measured the importance and performance of slow food attributes. Fourteen items adapted from the previous research study on slow food principles carried out by Payandeh et al (2020) comprised of good (five items), fair (five items), and clean (four items). The respondents were inquired to assess the level of importance when engaging with slow food activities during their visit on community-based tourism, and to assess the performance of the community toward slow food principles based on their experience on a five-point rating scale. The slow food attributes were translated into Thai language and adapted to comply with cultural context.

Data collection and analysis

An online questionnaire was employed from October to December 2022 to collect the data from generation Y domestic tourists who had travel experience with community-based tourism at least three times and have experience on local food related activities during their CBT visit. Totally, 385 respondents participated in this questionnaire survey.

Descriptive statistics were used to describe the overall characteristics of the 385 GenY respondents. According to Bacon (2003) the importance performance analysis (IPA) has been successfully employed to understand customer satisfaction and prioritized service quality improvement, thus this study was employed IPA to measure how GenY tourists perceived certain attributes of slow food principle connecting with their CBT experience. Five steps of IPA were adapted from the study of Lai and Hitchcock (2015) that suggested as a framework for Tourism researcher using IPA to acquire reliability and validity issues. Starting with descriptive analysis of attributes with the mean, standard deviation as well as multivariate normality test with skewness and kurtosis value to confirm the normality of the distribution of variable.

Step 2 with reliability and validity test, Confirmatory Factor Analysis (CFA) is conducted in this study to assess the quality of the three factors structure (Good, Fair, and Clean) which were theoretically developed and represent the constructs. The fit indices and cut off value include Cmin/df (<3), CFI (>0.90), NFI (>0.90), RMSEA (<0.05), and TLI (>0.90) (Hair et al., 2010). Convergent validity was conducted with several tests including the average variance extracted (AVE) and composite reliability (CR) are included to assess convergent validity with the value exceed 0.5 and 0.7 respectively (Hair et al., 2010). Cronbach's alpha is performed to test internal consistency reliability with the value greater than 0.70 suggested by Hair et al. (2010). Lastly, a discriminant validity test was measured to verify the extent of difference among concepts with the AVE value for each construct greater than squared correlation (Hair et al., 2014).

Next, the measure the levels of importance by univariate test is suggested before perform IPA. The fourth step is to determine the gaps between importance and performance with paired-sample t-test to show the significance difference (p-value<0.05). Thus, the attributes with p-value higher than 0.05 should be eliminated and not be plotted in I-P mapping (Lai and Hitchcock, 2015). The last step is interpreting the results of IPA with the most common direct measurement method with the data-centered quadrants approach. This can be done by scoring the importance and performance of specific service or product attributes based on the perception of tourists. This data is plotted on a 2x2 matrix that recommends four improvement strategies: (1) concentrate here; (2) keep up the good work; (3) low priority; and (4) possible overkill. Because it is simple and easy to use, the IPA has been used in many industries including tourism and hospitality (Chang et al., 2012). As seen in Fig.3, the vertical axis measures the performance of the slow food attributes whereas the horizontal axis measures the importance of attributes. In this study, the overall importance mean was calculated and used as a point to locate the position of gridline dividing data into high and low importance. Similarly, the overall mean of performance was calculated to divide the high and low performance area.

RESULTS AND DISCUSSION

From the data collected of 385 Gen Y respondents, 67% of the respondents were female (n=258), 26.8% were male (n=103) and 6.2% were LGBTQ+ (n=24). Most of the survey respondents were single (n=366 or 95.1%). Some 64.4% of respondents had bachelor's degree n=248) and 28.1% (n=108) attained educational background below bachelor's degree. The majority of Gen Y respondents travel for leisure purposes (89.3% or n=344) to natural attractions including beach destinations (46.5%) and mountain (27.8%). Most of respondents prefer to stay in hotel and resort accommodation (67.5%). Within one year, 61.3% of respondents travel 1-3 times, 24.2% travel 4-6 times, and only 14.5% of respondents travel more than 6 times a year (see Table 1). In terms of length of stay and number of travel companions, the average duration of each trip is 2.8 days with 3.7 travel companions respectively.

Table 1. Generation Y respondent profile

Variables		Frequency	%
Gender			
	Male	103	26.8
	Female	258	67.0
	LGBTQ+	24	6.2
Highest level of education			
	Below bachelor's degree	108	28.1
	Bachelor's degree	248	64.4
	Master's degree or above	29	7.5
Marital status			
	Single	366	95.1
	Marriage	17	4.4
	Divorce/Separated	2	0.5
Travel purposes			
	Leisure	344	89.3
	Visit friends or relatives	16	4.2
	Historical and cultural visit	6	1.6
	Natural and environmental purposes	19	4.9
Travel destination			
	Beach	179	46.5
	Mountain	107	27.8
	Rural	78	20.3
	Urban	21	5.4
Accommodation			
	Hotel/resort	260	67.5
	Homestay/guesthouse	54	14.0
	Friends and relative	29	7.5
	One day trip (Not stay overnight)	40	10.3
	Other e.g., Camping	2	0.5
Frequency of traveling/year			
	1-3 times	236	61.3
	4-6 times	93	24.2
	More than 6 times	56	14.5

Importance-Performance Analysis Results

As guideline for Tourism researcher, the study of Lai and Hitchcock (2015) was applied for the importance performance analysis (IPA) to measure how GenY tourists perceived about certain attributes of slow food principle connecting with their CBT experience. Five steps of IPA were followed including descriptive analysis, reliability, and validity test with Confirmatory Factor Analysis (CFA), testing the univariate of importance attributes, gap analysis with paired-sample t-test, and I-P mapping and interpreting the results of IPA. Firstly, A multivariate normality test was also performed with the result of skewness and kurtosis values below 3 and 10 respectively (Kline, 2011), resulting in all items are normally distributed and appropriate for further analysis. The mean and standard deviation of all fourteen slow food attributes were calculated both importance and performance aspects (see Table 2). The mean score of important attributes ranged from 4.405-4.078. Gen Y perceived ecstatic natural landscapes as the highest importance attributes followed by fair priced and protecting biodiversity. The results indicated that native and local dish menu, and reminisce and promote healthy food culture were lesser importance to GenY travelers. In terms of the mean performance, the mean score ranged from 4.342-4.174. Reasonable price with its natural landscapes was identified as the attribute that performed the best, followed by ecstatic natural landscapes and fair prices. The lowest score in performance in GenY perception was native and local dish menu, followed by confidence in the quality of food. Figure 1 indicates the mean score of performance and importance by three dimensions of slow food principle. In terms of importance analysis, the results signify clean principle as the highest mean score followed by fair and clean principle, besides clean principle demonstrate the highest performance mean score comparing to fair and good principles. In comparison between importance and performance by dimension, the results determine fair and clan dimensions has performed less than the tourists' expectation. On the other hand, the good principal dimension has achieved their performance more than the tourists' expectation (Figure1).

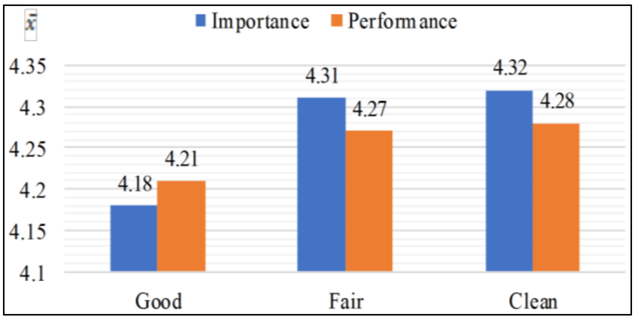

Figure 1. The mean score of importance and performance by slow food dimensions

Based on the results on both importance and performance of slow food principle toward CBT, it implied that there are connections between these two concepts with high level of perceived importance and performance. Hence, CBT food related activities can be promoted toward slow food principle including local food products, services, and experiences place importance to the art of cooking from the selection of raw materials, preparation of ingredients from natural, cooking with care and delicacy, reminiscing back to the traditional way of living, connecting to the local or community food culture. In accordance with the study by Mnguni and Giampiccoli (2016) that local/indigenous food can promote authenticity and tourists' experience follow by the CBT food and beverage standard in which cover with several key indicators that complied with slow food principle such as special cuisine, local ingredients from local farming, hygiene in food preparation, use natural bio-degradable packaging, opportunities for tourists and host to participate in food learning, etc. Secondly, Confirmatory Factor Analysis (CFA) is performed in this study to measure the quality of the factors. In this study fourteen observed variables were analyzed with three latent variables (Good, Fair, and Clean). Reliability and validity analysis of attributes were performed (see table 3). Cronbach's Alpha value ranging from 0.84-0.86 which is greater than the acceptable threshold values of 0.70 reflecting internal consistency reliability. Convergent validity was investigated including factor loading, the average variance extracted (AVE) and construct reliability (CR).

The results indicate a high convergent validity was established to all constructs with factor loading values of items ranging from 0.636-0.830 with above thread hold value 0.60 (Hair et al., 2011). CR and AVE values were measured with CR value between 0.74-0.76 and AVE value between 0.86-0.87 at the acceptance rate of 0.6 and 0.5 respectively (Fornell and Larcker, 1981; Hair et al, 2011). The evaluation of discriminant validity is also measured to verify the free from redundant items. Table 3 illustrates the square root of AVE value with bold value of each construct which significantly larger than the inter-factor correlation values of the constructs thus demonstrating good discriminant validity, each construct assessed distinct and different concepts (Fornell and Larcker, 1981; Gefen & Straub, 2005). Furthermore, the model was tested with the goodness of fit statistic, the results proof of the construct validity of the new attributes (CMIN/DF = 1.87, RMSEA = 0.048, CFI = 0.983, TLI = 0.976) (Figure 2). Thus, the CFA model of the latent variables revealed internal consistency reliability, convergent validity, and discriminant validity.

Table 2. Results of mean, standard deviation, multivariate normality test and paired-sample t-test of importance and performance in slow food principle – as perceived by GenY travelers

Slow food attributes	Importance				Performance				Difference		
	$\bar{X}$	SD	SK	KR	$\bar{X}$	SD	SK	KR	$\bar{X}$	t-Value	Sig.
Q1 Taste of local and traditional cuisine	4.236	.731	-0.520	-0.562	4.231	.693	-0.438	-0.498	0.005	.153	.878
Q2 Feel happy and content with food	4.195	.771	-0.658	0.059	4.265	.709	-0.474	-0.748	-0.070	-2.099*	.037
Q3 Confident in the quality of food	4.299	.744	-0.659	-0.521	4.182	.720	-0.329	-0.880	0.117	3.164**	.002
Q4 Native and local dish menu	4.078	.844	-0.671	0.237	4.174	.710	-0.395	-0.487	-0.096	-2.617**	.009
Q5 Reminisce about healthy food	4.078	.850	-0.584	-0.167	4.184	.746	-0.389	-0.871	-0.106	-2.782**	.006
Q6 Fairer prices for food.	4.200	.777	-0.531	-0.647	4.195	.804	-0.730	0.206	0.005	.140	.889
Q7 Reasonable price with its natural landscapes	4.333	.717	-0.632	-0.674	4.342	.727	-0.751	-0.304	-0.010	-.284	.777
Q8 Fair priced for quiet and relaxed atmosphere	4.392	.692	-0.889	0.588	4.327	.693	-0.587	-0.591	0.065	2.071*	.039
Q9 Enough money to buy food	4.363	.694	-0.676	-0.517	4.255	.724	-0.593	-0.306	0.109	3.185**	.002
Q10 Simple packaging and fair price	4.262	.715	-0.476	-0.782	4.229	.750	-0.513	-0.690	0.034	1.006	.315
Q11 Ecstatic Natural landscapes	4.405	.709	-0.809	-0.443	4.335	.699	-0.568	-0.821	0.070	2.223*	.027
Q12 Wild ingredients carvings	4.177	.753	-0.377	-0.919	4.218	.717	-0.563	0.090	-0.042	-1.308	.192
Q13 Protecting biodiversity	4.387	.710	-0.804	-0.284	4.309	.704	-0.561	-0.664	0.078	2.652**	.008
Q14 Production of recyclable waste	4.301	.738	-0.740	0.080	4.262	.726	-0.529	-0.658	0.039	1.247	1.247

Note: SK = Skewness, KR = Kurtosis, *p>= 0.01, **p>=0.001, ***p<0.001

Table 3. Measurement model, the reliability for convergent validity

Constructs and Items	Loading	Convergent validity			Discriminant validity		
		α	CR	AVE	Good	Fair	Clean
Good		0.86	0.74	0.86	**0.93**		
IMP1	.749						
IMP2	.825						
IMP3	.793						
IMP4	.692						
IMP5	.636						
Fair		0.87	0.75	0.87	0.77	**0.93**	
IMP6	.698						
IMP7	.711						
IMP8	.788						
IMP9	.756						
IMP10	.797						
Clean		0.84	0.76	0.87	0.72	0.81	**0.93**
IMP11	.769						
IMP12	.734						
IMP13	.830						
IMP14	.704						

Note: α = Cronbach's alpha; AVE = Average variance extracted; CR = construct reliability; Bold values represent square root of AVE

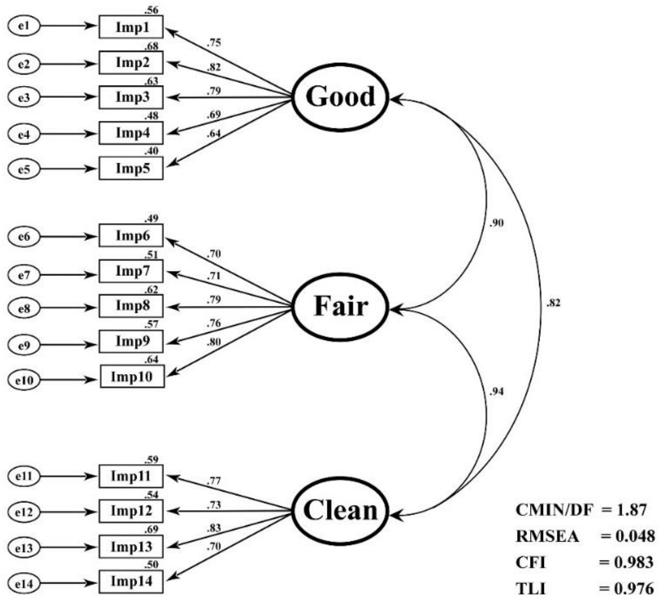

Figure 2. Results of CFA

Next, the measure the levels of importance by univariate test is conducted. The study of Lai and Hitchcock (2015) suggested that the levels of importance of attributes should be significantly difference for the reliability for the IPA. The Mauchly's test of sphericity and Test of Within-Subject effects were applied in this study to test the compound symmetry of covariance and the univariate if importance attributes, demonstrating the level of importance of fourteen attributes are significant difference (p<0.000). In step 4 with the gap analysis, the differences between the level of performance and importance are executed. The results of gap analysis are provided in Table 2 with the mean difference. The existence of a performance gap is identified only when there is significant difference among the levels of importance and performances (p value < 0.05), thus paired-sample t-test is conducted. The results indicate eight attributes (Q2, Q3, Q4, Q5, Q8, Q9, Q11, Q13) with significant importance-performance gap (p-value < 0.05) should be plotted in I-P grid for further interpretation. The results also identified the priority for improvement, mapping in quadrants. The plot is split in to four areas by plotting two axes derived from the mean of all importance attributes ($\bar{X}$ = 4.26) on X-axis, and the mean of all performance attributes ($\bar{X}$ = 4.25) on Y-axis. Figure 3 shows the importance-performance analysis grid that Q3 attribute were identified in the Quadrant 1 (concentrate here), Q8, Q9, Q11 and Q13 in quadrant 2 (keep up the good work), Q4 and Q5 in low priority, and Q2 in possible overkill.

To explain the IPA of figure 3, only one attribute was in Quadrant 1 (Concentrate here) is an area of high importance but low performance. "Confident in the quality of food" could be considered as underperforming and as a threat to connecting slow food concept toward CBT. The study revealed that Gen Y travelers' perception toward quality of food is discontented. In accordance with the study of Jang et al. (2011) that Gen Yers want to be offered quality foods with reasonable prices. The study of Ahlawat et al (2019) and Dimitrovski et al (2021) pointed out that taste and quality of food have the strongest influence on satisfaction, especially younger people. While four attributes in both fair and clean principle were plotted in Quadrant 2 (Keep up the good work), which is an area where both performance and importance represent strengths and high competitiveness. It could be interpreted that in food price in CBT activities relatively reasonable along with its dining experience with ecstatic natural landscapes, since most of the CBT enterprises in Thailand located in rural areas where travelers can experience local way of life with beautiful natural environment (Ministry of Tourism and Sport, 2018). Besides, Gen Y travelers value the protection of the environment and the diversity of rural food. Therefore, its performance must be maintained as Gen Y concerned about environmental issues and demonstrated green behavior (Leerattanakorn, 2017). CBT activities is linked to local food system and authenticity, the used and cultivation of indigenous plants for food impacts positively to tourists' experience since tourists want to experience the region they are visiting as well as maintaining biodiversity (Toledo and Burlingame 2006).

Two attributes related to "good principle" fell into Quadrant 3 (Low priority) which is an area where both performance and importance are low, indicating that improvement is not crucial. These attributes are associated with native and local dish menu, and reminisce about healthy food. The reasons might be that all respondents were domestic Gen Y tourists who relatively familiar with local Thai region and value of their own cuisine as it's connected between people, place, culture, and identity. The results implicit that the nostalgic food with healthy food culture is not set as positioning for Gen Y tourist group. In Quadrant 4 (Possible overkill), only one attribute related to good principle of slow food are situated, feel happy and content with food. It implies that food appreciation is low in importance to the Gen Yers of Thailand but performs strongly.

CONCLUSION AND IMPLICATIONS

Culture plays an increasingly important role in tourism and local food is one of the key factors of touristic experience (Du Rand et al., 2003; Payandeh, 2020). Community-based tourism (CBT) is an alternative tourism that requires active participation of the local community and considers the sustainability of the environment, society and culture of the community. The present study attempts to reveal the connection between CBT and slow food principle as well as extending earlier research (Giampiccoli et al., 2020; Payandeh et al., 2020; Zhang et al., 2018). Understanding the gap between expectations and the performance of CBT toward slow food principle allows managerial implication for the operational improvement. The results clearly inferred that slow food principles; "Good Fair and Clean" associated with CBT food-related activities in the ways that Gen Y travelers consider that all three principles of slow food were expected while traveling to CBT destination. All fourteen attributes of slow food principles were rated as high in importance and performance. To clearly understand the gap between this importance and performance, the results of IPA reveal that the quality of food in CBT destination needs to be urgently managed to create a memorable experience as its underperforming. The strengths of the CBT destination toward slow food principles were the reasonable price with dining experience that incorporates local food with relaxed atmosphere and blissful natural landscape. The Gen Y travelers' engagement toward protecting the environment and the diversity of local food was perceived as strength of CBT enterprises. For the low priority focus for CBT toward slow food principle, the native and local dishes menu and reminisce about healthy food were not crucial for improvement. While the feeling of happiness and content with food was low in expectation, however, perform strongly. Less attention should be paid to the fact that Gen Yers tourist in Thailand have not much concerned in this matter.

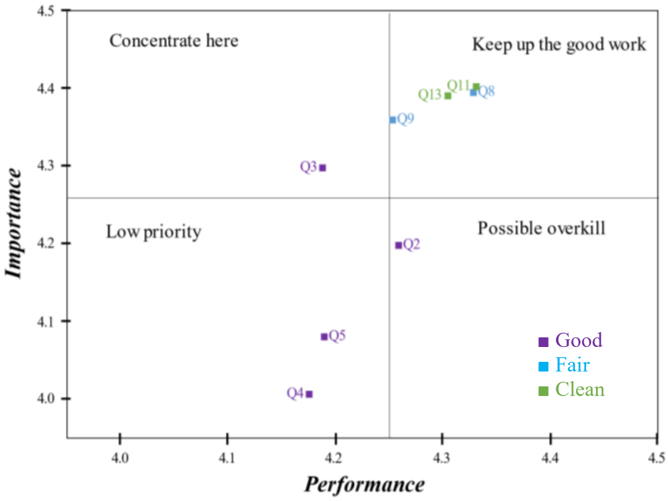

Figure 3. Importance-performance analysis grid

This study makes some important contributions as the fundamental research to link the connection between slow food principle and community-based tourism. First, it is necessary to mention the need for policy formulation to promote local food based on the concept of slow food to attract tourism to various localities. A collaboration among CBT enterprises, government, private sector, and marketers is essential to strengthen public awareness about the connection between the slow food principle and the CBT concept. Highlighting CBT as part of the slow food movement could be one of steppingstone toward sustainable development and healthy food culture. The CBT enterprises in Thailand can applied the slow food principle to their managerial plan as the movement is noticeably linked to authenticity, local food system, dining experience, responsible production, and consumption. Besides, the role of CBT should be emphasized as one of mechanisms to conserve local heritage and biodiversity. The CBT marketing strategy should be focused on developing slow food related products, services, and experience to increase tourist awareness as well as community profitability.

Effective food-related CBT promotional strategies can be initiated such as healthy food themed events, food heritage festivals, healthy and responsible food trail etc. To improve the CBT performance and to achieve with the slow food principle, there are several issues for CBT enterprises to consider; most importantly, the quality of food is the high point of improvement containing many aspects such as the raw materials selection, natural ingredients, cleanliness and hygiene, food nutrition etc. In accordance with the study of Payandeh et al. (2020) demonstrated the main driver of demand for local food is quality in terms of taste, tradition, and sustainability. The five sensory experiences should be improved and promoted to enhance the tourist experience including eyesight, hearing, smell, touch, and taste, as a transition process for healthfully culture connected with local heritage. As such further qualitative studies are needed to explain the in-depth understanding about quality of local food and how to promote slow food with all five sensory to enhance tourist memorable experiences. There are several limitations for this study. Covid-19 pandemic was arisen during the data collection process resulting in temporary access restrictions and social distancing interventions in most CBT enterprises in Thailand.

Instead of face-to-face survey conducting in CBT sites, the online questionnaire was adapted which could enable selection bias for those who familiar with technology and online applications. Moreover, this study focused on Generation Y Thai domestic tourists, therefore, the finding could not be generalized to all tourists. Future research may examine different types of tourists and different generations for profound understanding about tourist perspective toward slow food principle.

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VFR TRAVEL AND COVID-19 IMPACTS: THE SOUTH AFRICAN EXPERIENCE

Christian M. ROGERSON
School of Tourism and Hospitality, College of Business and Economics,
University of Johannesburg, Johannesburg, South Africa, e-mail, chrismr@uj.ac.za

Jayne M. ROGERSON*
School of Tourism and Hospitality, College of Business and Economics,
University of Johannesburg, Johannesburg, South Africa, e-mail jayner@uj.ac.za

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Abstract: COVID-19 had major negative consequences globally for travel for visits to friends and relatives (VFR), which is an under-researched segment of tourism. This paper responds to the need for extended research on VFR travel by examining the impacts of COVID-19 on the VFR sector and its spatial imprint in South Africa. VFR travel sector was second only to business travel in terms of the negative impacts of COVID-19 restrictions imposed in South Africa. An uneven geography is observed of the impact of COVID-19 on VFR travel mobilities. Using data on VFR trips and bednights the analysis discloses the greatest absolute declines in VFR travel occurred in South Africa's major metropolitan areas. By contrast, in terms of the relative decline and local impacts for destinations of the COVID-19 hollowing out of VFR travel a different pattern emerges. The worst affected spaces were remote, mainly rural localities which are in South Africa's poorest and most economically distressed areas.

Key words: VFR travel, COVID-19 impacts, ramification, Africa tourism, South Africa

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INTRODUCTION

The COVID-19 pandemic wrought significant changes across many dimensions of public life, including of tourist behaviour (Kock et al., 2020; Korinth, 2020; Kowalska and Niezgoda, 2020; Bama and Nyikana, 2021; Gössling et al., 2021; Yang et al., 2021; Afroz et al., 2022; Dogramadjieva and Terziyska, 2022). Adey et al. (2021: 1) point out that the pandemic resulted in "many everyday human mobilities brought to an abrupt halt, while others were drastically reorganized". Among its most visible consequences has been the shift in consumer preferences away from mass tourism and towards particular types of niche tourism, for drive tourism holidays and travel for visits to friends and relatives (VFR) (Bieger and Laesser, 2020; Chebli and Said, 2020; Seraphin and Dosquet, 2020; Zenker and Kock, 2020; Perić et al., 2021; Rogerson and Rogerson, 2021a; Zentveld et al., 2022a).

It is stressed that, at least in the short to medium-term, the importance of VFR travel will become more visible to policy-makers as "people staying away from loved ones for a long time and not being able to establish physical contact with them will greatly increase the effort to satisfy this emotional need in future travels" (Koç, 2021, p. 300). In many countries it is suggested also that because many people lost jobs, livelihoods or experienced a decrease in overall income during the pandemic that those with weakened purchasing power may opt for VFR travel on grounds of cost considerations as well as one of the modes of travel posing the least health risk. As Zentveld et al. (2022b, p. 385) aver "people unable to see friends and family due to lockdowns are focused on reconnecting".

The cessation of international travel occasioned by COVID-19 resulted in "huge emotional impacts for diasporas in the COVID-19 era" (Kelly, 2022, p. 635). Within countries COVID-19 lockdowns and travel curbs impacted cultural obligations attached to VFR travel (Zentveld et al., 2022a). In terms of tourism recovery VFR travel has been identified as a suitable "first-mover" market segment (Backer and Ritchie, 2017; Zentveld et al., 2022a). Indeed, it is significant as "a naturally occurring form of social tourism that has important policy implications" (Backer and Morrison, 2017, p. 396). Whilst other types of tourism are considered as a luxury and have been paused with the pandemic, the desire to reconnect with friends and relatives has become a priority for many individuals and households. For example, in Turkey Koç (2021) maintains that longing for friends and relatives has spurred a growth in the demand for VFR travel following the country's relaxation of lockdown and travel restrictions. According to Tham et al. (2022) VFR hosts are critically positioned as potential destination ambassadors for strategically launching post-COVID-19 tourism recovery.

In common with the experiences recorded for the rest of the world, the tourism sector in Africa was devastated by the ramifications of COVID-19 lockdowns and government-mandated travel constraints (Rogerson and Baum, 2020; Bama et al., 2022; Musavengane and Leonard, 2022). It was observed that COVID-19 represents "a trigger event which is changing the complexion of African tourism and the directions of African tourism research" (Rogerson and Rogerson, 2021b, p 1026). One major strand of African tourism research produced in the uncertain times of the COVID-19

* Corresponding author

environment surrounds the theme of 'ramification' and of the pandemic's impacts for the tourism sector (Rogerson and Rogerson, 2021a, 2022a, 2022b). South African tourism experienced among the worst pandemic impacts within the African continent (Bama and Nyikana, 2021). From a supply-side perspective Kruger and Viljoen (2022) examine determinants which can support the regeneration of South Africa's tourism industry following its hollowing out because of the pandemic. Mzobe et al. (2022) focus on the need to unlock the opportunities for expanding domestic tourism. Dube-Xaba (2021) is of the view that in the wake of COVID-19 VFR has the potential to fuel the resurgence of the South African tourism industry and most especially for domestic tourism. In debates about potential directions in African tourism research agendas in the COVID-environment the observed positive benefits of leveraging VFR travel in post-disaster recovery situations reinforces the need to extend the African corpus of scholarship on VFR travel (Rogerson and Baum, 2020). Likewise, Musavengane et al. (2022) identify that it would be worthwhile for researchers to probe in greater depth the impact of COVID-19 on VFR travel in Southern Africa.

This paper responds to these calls for further research on VFR travel by examining the impacts of COVID-19 on the VFR sector and its spatial imprint in South Africa. Two further sections of material are presented. These deal first with the literature context of VFR travel and research on VFR in South Africa and followed by the empirical work on the pandemic's impacts for VFR in the country. In their review of recent tourism geographical literature on South Africa Rogerson and Visser (2020, p. 5) observe "a rich vein of research investigations is emerging around VFR travel in South Africa". This paper offers a modest contribution both to that South African geographical literature as well as to broader discussions concerning the ramifications of COVID-19 for VFR travel, including its impacts.

LITERATURE CONTEXT - VFR TRAVEL AND SOUTH AFRICA

Visits to friends and relatives are described as a "simple, often taken-for granted pleasure" with a rhythm of visits usually organised around birthdays, anniversaries, and public holiday periods (Kelly, 2022, p. 634). In many countries VFR travel is the main driver of domestic tourism (Rogerson, 2015a; Zátori et al., 2019) and can be a significant contributor also to international tourism flows (Backer and King, 2015). The phenomenon of VFR travel continues to expand in a context where households are increasingly geographically dispersed as a result either of migration or lifestyle considerations and yet wish to retain ongoing emotional and friendship connections (Backer and King, 2015; Griffin and Dimanche, 2017). Seaton (2017, p. 455) observes that this situation is unremarkable "since relationships between family, relatives and friends, and visits to or by them, are mainstays of human life for all except the chronically unfortunate, isolated or disaffected". Indeed, Kelly (2022, p. 634) maintains that the action of VFR travel represents "an unspoken network of connection, identity and belonging". Based upon Australian evidence, Backer (2019) highlights the positive quality of life impacts of VFR travel.

Beyond its social significance for tourism destinations the activity of VFR travel confers economic benefits (Trites et al., 1995; Backer, 2007; Asiedu, 2008; Backer, 2010). These benefits are not always appreciated by policy-makers and destination managers as the breadth of VFR expenditures and therefore the impacts for destinations of VFR travellers are underestimated (Jackson, 1990; O'Leary and Morrison, 1995; Chhabra, 2005; Lee et al., 2005; Backer, 2007; Backer and King, 2015; Backer and Morrison, 2015; Yousuf and Backer, 2015; Griffin and Nunkoo, 2016). VFR travel has been shown to be resilient in the context of economic downturns thus making it significant for local economic development programming as well as for overcoming the seasonality issues which commonly are associated with leisure tourism (Backer, 2012; Griffin, 2013). Overall, Backer (2007) stresses that in tourism scholarship the VFR market has been both under-researched and under-respected. This said, Seaton (2017, p. 455) notes the paradox that VFR travel as a marginalized category by tourism scholars and planners "has always been, as a domain of behaviour, more central to human experience than leisure tourism". Although an upturn in research interest occurred in the 2010 decade recently Zentveld et al. (2022b, p. 385) re-stated that "relatively little VFR research has been undertaken". Likewise, Lin et al. (2022, p. 18) point out that notwithstanding the capacity of VFR travel to exhibit strong resilience in the face of global crises "it has been one of the most underexplored tourism contexts in the literature".

For certain observers the lack of popularity of VFR research is an outcome of several difficulties associated with precisely defining what is VFR travel (Munoz, 2018). In a critical commentary Palovic et al. (2014) maintain that the concept is unstructured and chaotic. VFR can be considered variously as a trip purpose, a trip activity and an accommodation use (Griffin, 2016). It was argued by Backer (2007) that use of trip purpose alone is insufficient to capture the extent of VFR and therefore that it is appropriate to incorporate accommodation use in discussion of visits for pleasure. The conceptual definition was advanced that VFR constitutes "a form of travel involving a visit whereby either (or both) the purpose of the trip or the type of accommodation involves visiting friends and/or relatives" (Backer, 2007, p. 369).

Table 1. Backer's typology of VFR (Source: Adapted after Backer, 2012)

	Accommodation: Friends and Family	Accommodation: Commercial
Purpose of Visit: VFR	PVFRs	CVFRs
Purpose of Visit: Non-VFR	EVFRs	Non- VFRs

Backer (2012) proposed a definitional typology that used the two dimensions of 'purpose of travel' and 'form of accommodation' to define more clearly VFR travellers "but also to distinguish which ones are not" (Munoz, 2018, p. 52). Four visitor categories emerge (Table 1). These are as follows: (1) pure VFRs (PVFRs) which are VFR purpose and stay with friends and relatives; (2) commercial VFRs (CVFRs) which are VFR purpose and staying in commercial accommodation; (3) exploiting VFRs (EVFRs) which are for pleasure purpose but stay with friends or relatives; and, (4) non-VFRs which are visitors for leisure purpose and staying in commercial accommodation (Backer, 2012). Arguably, this typology represents a major conceptual advance for VFR studies (Barnes and Rogerson, 2021). This definition of VFR further builds upon the recognition that the phenomenon of VFR is not simply about leisure. It recognises that "there are instead multiple practices within visits that have little to do with tourism such as attending a funeral, child care or visiting an ailing relative" (Munoz et al., 2017, p. 480). For this reason, both Backer (2012) and Zentveld et al. (2022) prefer the use of the term 'VFR travel' to the descriptor 'VFR tourism'.

Despite its minor status in tourism writings by African tourism scholars it has been asserted that VFR travel 'matters' and most especially so within the environment of sub-Saharan Africa (Rogerson, 2017a). As indicated by Dzikiti and van der Merwe (2017) VFR travel in Africa includes a segment of international travellers. By far the largest constituent is, however, domestic travel. In pre-COVID South Africa VFR has been shown as the leading segment of tourism travel as a whole and in the economy of domestic tourism (Rogerson, 2015a, 2015b; Rogerson and Rogerson, 2020b, 2021c). Ordinary or working class South Africans dominate domestic tourism flows and are drivers of a low-density form of tourism which has parallels in many other countries in the Global South.

The activity of VFR travel in South Africa is massively the domain of less affluent Black travellers many of whom are part of split or multi-locational households with both an urban and rural 'home' (Rogerson, 2015b, 2017b). Henama and Apleni (2018, p. 775) assert that the face of Black tourism in South Africa is dominated by VFR travel which takes the form of an informal economy of domestic tourism. Residents of many of South Africa's disadvantaged urban 'townships' are important participants in VFR travel movements (Rogerson and Mthombeni, 2015). As these low income communities are excluded on cost grounds from participating in other forms of tourism VFR travel therefore assumes a vital social function in South Africa (Rogerson, 2017b; Musavengane, 2019). Musavengane (2019, p. 341) re-iterates that the majority of 'poor' Black South Africans engage in VFR mobilities and that Black Africans dominate VFR travel. Likewise, Henama et al. (2022) confirm that the major contours of second homes tourism in South Africa are shaped by working class South Africans who work in the major cities but have 'second homes' in the former apartheid-created (mainly) rural 'homelands' where members of the extended household family are residents.

COVID-19 IMPACTS ON VFR TRAVEL IN SOUTH AFRICA

Two sub-sections of material are presented which relate to the methods and data used in this investigation followed by the findings on COVID-impacts for VFR travel in South Africa.

Methods and Data

For the tourism sector in South Africa no official data is available to monitor tourism flows and the economic contribution of tourism at sub-national level. Reliance is given therefore to the unpublished data base which is maintained by the private sector consultancy IHS Global Insight (now part of S & P Global). This South African tourism data base represents a subset of the IHS Global Insight Regional eXplorer (ReX) which is a consolidated platform of integrated data bases that, in the absence of official establishment and enterprise surveys, provides currently the most useful data at sub-national scale, including the municipal scale. Data is collated regularly and updated from a wide range of sources (both official and non-government) with the primary data reworked to ensure consistency across variables and by applying national and sub-national verification tests in order to ensure that the model is consistent for measuring business activity. In terms of the spatial disaggregation of data, IHS Global Insight apply both a top down approach from questions posed in demand-side surveys as well as a bottom up approach using the supply-side distribution of tourism services. For the most accurate geographic distribution at lower scale regions and local areas the supply-side measures are deemed as the most appropriate. For purpose of travel data, a differentiation is made between holiday/leisure trips, business trips, VFR and other (mainly religious or health) travel.

For the category of VFR travel, trips are distributed according to numbers of non-household members that are present in each household as measured in various census subsets; for domestic tourists the distribution of local non-household members is used whereas for international tourists the distribution of non-local non-households is applied.

Arguably, for tourism geographers the local tourism data base of Global Insight is particularly valuable as it contains details of the tourism performance of all local municipal authorities in the country in respect of *inter alia*, the number of tourism trips differentiated by primary purpose of trip; bednights by origin of tourist (domestic or international); calculation of tourism spend; and, of the contribution of tourism to local gross domestic product (Rogerson and Rogerson, 2021c). From this data base information can be extracted on an annual basis from 2001 for tourism trips as estimated for all local, district and metropolitan authorities in the country. For students of the geography of tourism the IHS Global Insight data base is lluminating as in an international overview it is apparent that tourism geographical scholarship gives only limited attention to exploring spatial variations of the pandemic's impact within countries (Rogerson and Rogerson, 2022a, 2022b). This omission is surprising in light of the facts both that spatial analysis is a vital research tool for tourism geographers (Hall, 2012) and demonstrated as a valued foundation for tourism policy and planning (Popescu and Persu, 2022). The time period under scrutiny for this investigation is between 2019-2020 and represents therefore an analysis of the immediate impacts of COVID-19 upon the landscape of VFR travel in South Africa. Detailed accounts of the various lockdowns and the changing pandemic restrictions which were imposed by the South African government on local and international travel are provided by Rogerson and Rogerson (2020a), Visagie and Turok (2021) and, most recently, by Lekgau and Tichaawa (2022).

Findings

The immediate impacts of COVID-19 for the tourism economy of South Africa are summarised on Table 2 for a range of indicators. Using data for trips and bednights for the period 2019-2020 it is evident that the segment of travel that experienced the greatest downturn in 2020 was business travel. The second most affected travel segment was, however, that of VFR travel. This segment shows losses of 67.5 percent in terms of trips and 69.8 percent in terms of bednights (Table 2). It should be understood that the category 'bednights' includes both paid (commercial accommodation) and non-paid bednights (Rogerson, 2018). In the case of VFR travel in South Africa, which is dominated by poor and working class visitors, the overwhelming share of VFR bednights would not be in commercial accommodation and instead at the homes of host friends or relatives (Rogerson, 2017b).

Table 2. Key Indicators of COVID-19 Impacts on Tourism in South Africa, 2020
(Source: Authors based on unpublished IHS Global Insight data)

Indicator	2019-2020 Net Change (-)	Per Cent Decline
Total Trips ('000s)	30016.1	66.9
Total Bednights ('000s)	16887.8	68.2
Leisure Trips ('000s)	6845.5	64.3
Leisure Bednights ('000s)	44785.5	64.5
Business Trips ('000s)	2283.9	70.3
Business Bednights ('000s)	15469.7	70.6
VFR Trips ('000s)	18260.1	67.5
VFR Bednights ('000s)	96201. 7	69.8
Other Trips ('000s)	2626.6	67.1
Other Bednights ('000s)	12420.9	67.7

Variations in the geographical patterns of VFR travel and associated COVID-19 impacts can be examined for both total trip and total bednight data. The analysis is undertaken for both absolute losses as well as relative change.

The focus is on data for a total of 213 spatial units. These are composed of South Africa's eight metropolitan areas and 205 local municipal areas which encompass a group of secondary or middle-tier centres in the urban settlement hierarchy as well as small town and rural municipalities. Figure 1 maps out the boundaries of South Africa's major metropolitan centres and the country's nine provinces.

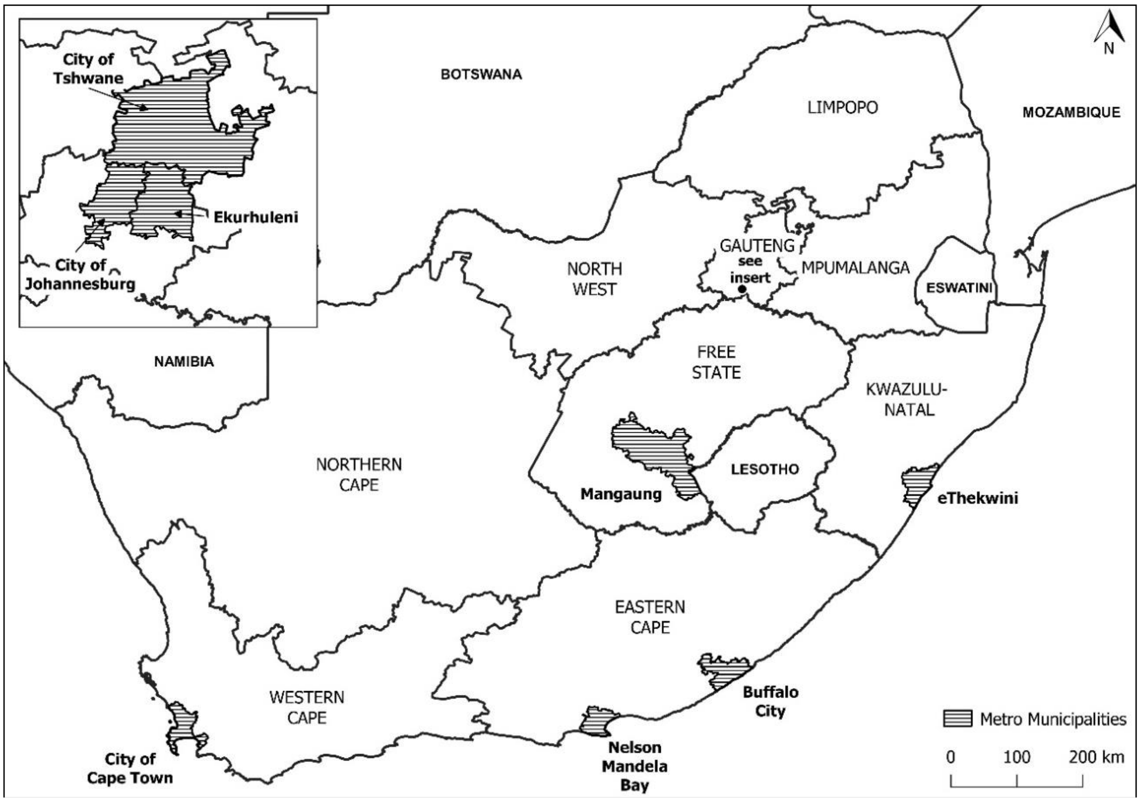

Figure 1. South Africa's Nine Provinces and Eight Metropolitan Areas (Source: Authors)

Table 3 provides a list of the leading 15 municipalities which are ranked for the absolute loss recorded for VFR travel in terms of both numbers of trips and total number of bednights for the period 2019-2020. As a result of South Africa's various COVID-19 travel restrictions and lockdown measures absolute falls in VFR travel were evidenced across *all* of South Africa's local areas. The decline of VFR travel in 2020 was therefore geographically widespread across the country. In total, however, the 15 leading centres on Table 3 accounted for almost 50 percent of the total decline in VFR trips (9 088 000) during the period 2019-2020. Indeed, ten of these 15 areas exhibit relatively greater losses in numbers of VFR trips than the rate (67.5 percent) for South Africa as a whole.

It is evident that the major individual losses were recorded in terms of VFR travel to several of South Africa's major metropolitan centres. This reflects the trend – particularly noticeable in the urban Global South - that large urban centres are traditionally significant destinations for VFR travel (Rogerson and Rogerson, 2021d). The greatest absolute declines occurred for the country's three inland metropolitan areas in the economic heartland of Gauteng province.

Taken together the metropolitan areas of Johannesburg, Tshwane and Ekurhuleni recorded a decline of over 4 million VFR trips. Next, following these declines of the Gauteng metropolitan areas Table 3 demonstrates significant falls in VFR trips occurred in the two coastal metropolitan areas of Cape Town (Western Cape) and eThekwini (KwaZulu-Natal), the secondary city of Polokwane – capital of Limpopo province – the metropolitan areas of Mangaung (Free State), Buffalo City (Eastern Cape) and the city of Mbombela, the provincial capital and major centre of Mpumalanga province. Beyond these centres further significant declines are recorded in three small town and rural municipalities of Limpopo province (Thulamela, Greater Giyani and Fetakgomo/Greater Tubatse), Rustenburg in North West province and for Steve Tshwete and Govan Mbeki local municipalities which are situated in Mpumalanga province. This latter group of local municipalities includes areas which are the location of 'second homes' of large numbers of split Black households, many of which are found in the former Homelands created under apartheid albeit with origins that date back to the earlier segregationist colonial era (Rogerson, 2014, 2017b).

Table 3. Leading South African municipalities: Absolute decline of VFR trips and VFR bednights 2019-2020 (Source Authors construct based on IHS Global Insight data. Note: LIM – Limpopo, NW – North West, MP – Mpumalanga, GP - Gauteng province)

Municipality	No. of Trips ('000)	% National Loss
City of Johannesburg	1 871	10.2
City of Tshwane	1 122	6.1
Ekurhuleni	1 068	5.8
eThekwini	926	5.1
City of Cape Town	909	5.0
Polokwane (LIM)	585	3.2
Mangaung	419	2.3
Buffalo City	370	2.0
City of Mbombela (MP)	324	1.8
Thulamela (LIM)	291	1.6
Fetakgomo/Greater Tubatse (LIM)	280	1.5
Rustenburg (NW)	269	1.5
Greater Giyani (LIM)	248	1.4
Steve Tshwete (MP)	211	1.2
Govan Mbeki (MP)	195	1.1

Municipality	Bed-nights ('000)	% National Loss
City of Johannesburg	12286	7.3
City of Tshwane	7 068	4.2
Ekurhuleni	6 975	4.1
City of Cape Town	6 782	4.0
eThekwini	5 038	3.0
Buffalo City	1 981	1.2
Polokwane (LIM)	1 954	1.2
Mangaung	1 884	1.1
City of Mbombela(MP)	1 543	0.9
Rustenburg (NW)	1 287	0.8
Nelson Mandela Bay	1 172	0.7
Thulamela (LIM)	968	0.6
Fetakgomo/Greater Tubatse (LIM)	864	0.5
Emfuleni (GP)	836	0.5
Steve Tshwete (MP)	834	0.5

The results of the analysis for VFR bednight data discloses a similar set of findings and rankings to that for VFR trips (Table 3). Once again all local municipalities across South Africa experienced losses in terms of numbers of bednights for VFR travel. The losses for VFR bednights are widely dispersed across South Africa as indexed by the finding that the leading 15 centres collectively account for less than one-third of all the national decline in VFR bednights. The highest losses were concentrated geographically in the metropolitan centres with Johannesburg, Tshwane, Ekurhuleni, Cape Town and eThekwini responsible for the greatest falls (see Table 3). Together these five metropolitan centres accounted for a decline of 31.87 million VFR bednights in the period 2019-2020 as an outcome of the immediate impact of COVID-19. The list of leading centres in terms of losses of VFR bednights includes all eight of South Africa's metropolitan areas. Outside of these metropolitan centres notable declines in bednights for VFR travel were evidenced also for the secondary cities of Rustenburg (North West), Mbombela (Mpumalanga) and Polokwane (Limpopo) as well as of the small town and rural municipalities in the former rural homelands which now are part of Limpopo province (Table 3).

The above analysis shows that the absolute losses related to the collapse of VFR travel were uneven geographically across South Africa albeit mainly concentrated in the country's large metropolitan areas. Table 4 turns attention to focus on issues of *relative* decline in terms of identifying the municipalities on the basis of which were worst impacted in terms of relative loss of VFR trips and VFR bednights. This revealed a completely different picture of the geographical impact of COVID on VFR travel. In terms of indicators of both trip losses and decline in bednights the leading relative declines occurred in small predominantly rural local municipalities in the provinces of Eastern Cape, Limpopo and Northern Cape. The list of worst impacted local municipalities are in economically distressed areas and geographically remote from South Africa's major metropolitan areas which recorded the greatest absolute losses in VFR travel mobilities. The impacted municipalities are among South Africa's least visited tourism spaces and most can be described as 'non-tourism' spaces (Rogerson, 2017c). These are local areas which are VFR-dependent as leisure or business travel to those areas is almost non-existent. Arguably, the COVID-19 induced collapse of VFR travel would have worsened the considerable economic and social hardships in such areas following lockdowns and travel restrictions.

Table 4. Leading South African municipalities: Relative Decline of VFR trips and VFR bednights 2019-2020 (Source: Authors construct based on IHS Global Insight data. Note: LIM – Limpopo, EC – Eastern Cape, NC – Northern Cape province)

Municipality	% Trip Loss	No. '000s
Umzimvubu (EC)	88	87
Matatiele (EC)	87	45
King Sabata Dalindyebo (EC)	79	82
Mhlontlo (EC)	79	44
Nyandeni (EC)	79	44
Ingquza Hill (EC)	79	34
Ntabankulu (EC)	79	18
Port St Johns (EC)	78	72
Thulamela (LIM)	76	291
Collins Chabane (LIM)	76	170
Makhado (LIM)	76	169
Ga-Segonyana (NC)	76	45
Joe Marolong (NC)	76	30
Gamagara(NC)	76	22

Municipality	% Bed Night Loss	No. '000s
Umzimvubu (EC)	85	476
Matatiele (EC)	82	267
Ga-Segonyana (NC)	79	204
Gamagara (NC)	79	95
King Sabata Dalindyebo (EC)	78	450
Mhlontlo (EC)	78	240
Ingquza Hill (EC)	78	186
Joe Marolong (NC)	78	136
Port St Johns (EC)	77	408
Sol Plaatje (NC)	77	381
Nyandeni (EC)	77	241
Mbizana (EC)	77	207
Nala (FS)	77	157
Masilonyana (FS)	77	131

CONCLUSION

Although VFR travel represents the largest constituent of tourism flows scholarly attention on VFR remains sparse (Zentveld et al., 2022b). This paper represents a contribution to the small literature which acknowledges the relevance of researching VFR travel mobilities. Our focus has been upon the ramifications of COVID-19 upon VFR travel in the experience of South Africa. It has been shown that the VFR travel sector was second only to business travel in terms of the negative impacts of COVID-19 restrictions imposed in South Africa. There was observed an uneven geography in terms of the impact of COVID-19 on VFR travel mobilities. Using data on VFR trips and bednights the analysis has disclosed that the largest absolute declines in VFR travel occurred in South Africa's major metropolitan areas which have diversified tourism economies. By contrast, a different complexion was shown in terms of the relative decline and local impacts for destinations of the COVID-19 hollowing out of VFR travel. It was evident that the worst affected spaces were remote, mainly rural spaces which are in South Africa's poorest and most economically distressed areas. These findings highlight the potential need for local research investigations in these spaces to examine both the detailed economic and social ramifications of COVID-19 and steps towards recovery from the pandemic

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ASSESSMENT OF TOURISM AND CLIMATE POTENTIAL OF TERRITORIES OF NORTHERN KAZAKHSTAN

Sergey PASHKOV*
M. Kozybayev North Kazakhstan University, Department of Geography and Ecology, Petropavlovsk, Kazakhstan, e-mail: sergp2001@mail.ru

Gulnur MAZHITOVA
M. Kozybayev North Kazakhstan University, Department of Geography and Ecology, Petropavlovsk, Kazakhstan, e-mail: mazhitova_gulnur@mail.ru

Igor SEDELNIKOV
M. Kozybayev North Kazakhstan University, Department of Geography and Ecology, Petropavlovsk, Kazakhstan, e-mail: igor_sko_kz_94@mail.ru

Gaukhar OSPAN
L.N. Gumilyev Eurasian National University, Departament of Physical and Economical Geography, Astana, Kazakhstan, e-mail: gauhara_ast@mail.ru

Yerzhan SAGATBAYEV
Astana International University, Higher School of Natural Sciences, Astana, Kazakhstan, e-mail: sagatbaeve@mail.ru

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Abstract: The purpose of the research was to assess the degree of favorableness of the bioclimatic conditions of the territory of Northern Kazakhstan by calculating the tourist climate index (TCI) and analyzing its spatial and temporal variability. Archival, stock materials and data on the main meteorological and climatic indicators for 63 weather stations for the period 1966–2020 were used. The study used methods of mathematical and statistical analysis, GIS technologies. The level of climatic attractiveness varies from "very unfavorable" in the winter months to "comfortable" in the summer. It was determined that the territory of Northern Kazakhstan as a whole is relatively homogeneous in terms of the average annual TCI index (28-38). Depending on the values of the index, 5 categories of climatic attractiveness of the territory of Northern Kazakhstan were identified (comfortable, moderate, neutral, unfavorable, extremely unfavorable). The most favorable conditions for tourist and recreational activities are formed in the summer months in the northeastern and southwestern sectors of the region. Recommendations are given on the spatial placement of tourist and recreational facilities and types of tourist activities in Northern Kazakhstan, taking into account the favorable weather and climatic conditions.

Key words: bioclimatic potential of the territory, tourist climate index, Northern Kazakhstan, meteorological data, tourist and recreational activities

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INTRODUCTION

Nowadays tourism is an important part of the tertiary sector of the global economy, providing up to 10% of GDP in pre-pandemic years and being the third (7%) most important export category in the world after fuel and chemicals, and the second (28%) in trade in services. According to the World Travel and Tourism Council, the contribution of the tourism industry to the GDP of different countries ranges from 0.5% (Algeria) to 79.4% (Maldives) (UNWTO, 2021). For a number of years now, the Transcaucasian states have been leading in the post-Soviet space, where Georgia is the undisputed leader – 27%, followed by Azerbaijan and Armenia by a wide margin – 15% and 14% of GDP, respectively. Unfortunately, the Republic of Kazakhstan, with its vast territory and the richest natural, historical and cultural attractions, is ranked 129th in the world ranking with a modest share of 6% of GDP. In the recently published (U.S. News Best Countries ranking, 2022), where foreign direct investment and international tourism income were the most important predictors, the country ranked second to last, 84th, ahead of only Iran. Based on the current Concept for the Development of the Tourism Industry of Kazakhstan (The concept of development of the tourism industry…, 2017), as well as in connection with the recovery of the industry from the consequences of COVID-19, modern studies of the tourism and recreational potential of the regions have particular importance. The development of tourism in any territory is based on the attractiveness of the health-improving potential of natural objects of the locality under consideration. One of the most important recreational forming

* Corresponding author

natural components is the climatic factor and, as a rule, weather and climatic conditions are the main limiting factor. The synergistic effect of meteorological (weather) characteristics determines the recreational potential of the climate.

Meteorological parameters (air temperature, atmospheric pressure, wind speed, air humidity, solar radiation intensity, etc.) can have values that both contribute to and hinder the preservation and promotion of health. It is known that the healing effect of the meteorological factor is characteristic only for a certain range of values of its parameters (range of physiological comfort). The action of the factor in other ranges only impairs health. The combination of meteorological parameters determines the climatic potential of the territory for the development of tourist and recreational activities.

The choice of the object of study is not accidental: Northern Kazakhstan is a large natural and economic region - its area is 601 thousand km² and population is 4.2 million people (data on 01.01.2023). The social and economic significance of the region has increased many times since the transfer of the capital to the city of Akmola (the current city of Astana) in 1997. Northern Kazakhstan, being an integral part of the Kazakhstan tourism space (Azhayev et al., 2020; Makhanova et al., 2022; Mazhitova et al., 2018; Ozgeldinova et al., 2020; Sagatbayev et al., 2019; Yegemberdiyeva et al., 2020; Kitaibekova et al., 2023) despite increased domestic demand on the tourism product, stands out among other regions with unjustifiably low indicators of the development of the industry. Located in the far north of the country in the junction zone of the West Siberian lowland and Saryarka (Kazakh low hills), stretching from north to south for almost 900 km (from 49 ° N to 55 ° N) and from west to east - more than 1300 km within the forest and steppe, steppe and desert and steppe natural zones, the area is characterized by a heterogeneous landscape space, which has led to a variety of territories favorable for the development of tourism. However, at present, over 95% of tourist visits are only in three districts - Burabay (with Zerenda), Bayanaul and Shalkar-Imantau (Figure 1). The aim of the study was an integrative assessment of the favorableness of the bioclimatic conditions of the territory of Northern Kazakhstan by calculating the tourism climate index (TCI) to improve management decisions on the scale of both individual destinations and the region as a whole. A review of the publication of recent years shows that in the countries of the post-Soviet space there is no or extremely poorly studied climate impact on tourism, not to mention the impact of climate policy on tourism demand, as well as integrated climate and carbon risks in tourism (Dogru et al., 2019; Steiger et al., 2023), which should be the subject of further research.

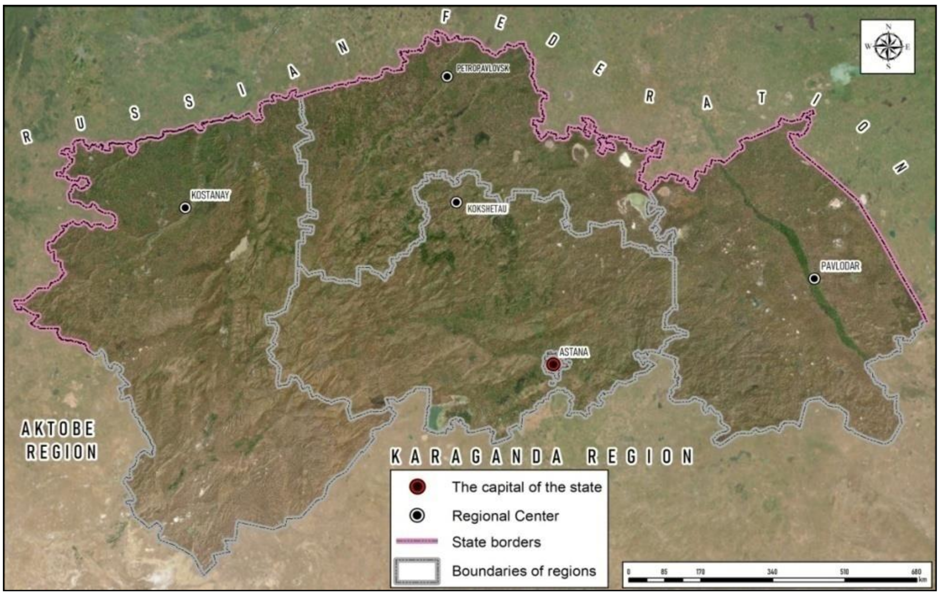

Figure 1. Northern Kazakhstan (open satellite image from Google)

METHODOLOGY

The methodological base of the study is leaned on theoretical and applied publications on bioclimatology, human ecology, medical geography, recreational geography, and balneology. Global climate change has not only caused a shift in seasonality, but has also led to severe weather fluctuations and an increase in extreme weather (Reidmiller et al., 2018). Nowadays more and more researches are focusing on the climatogenic determinism of destination choice and the climatic attractiveness of major tourist areas (Hamilton and Lau, 2005; Maddison, 2001; Lise and Tol, 2002; Scott and Lemieux, 2010). An important place is occupied by works on studying the experience and results of research on the meteorological factor and its parameters from the standpoint of assessing the tourist and recreational potential of various territories, the comfort of the natural landscape environment (Steadman, 1979a, 1979b, 1994).

At the moment, in medical climatology, many bioclimatic indices are known. They are used to assess the comfort of the climate and its potential. Among them, the most famous and actively used in studies conducted at various territorial levels are: equivalent effective temperature (Aizenshtadt, 1964), radiation equivalent – effective temperature (Golovina and Trubina, 1997), weather severity index (Kobysheva et al., 2008), universal thermal comfort index (Universal Thermal Climate Index – UTCI) (Błażejczyk et al., 2010, 2012, 2013). To determine the favorable bioclimatic conditions of the territory of Northern Kazakhstan, we took the Tourist Climate Index (TCI) (Mieczkowski, 1985). Let us make a reservation right away that this index, despite its wide distribution Li et al., 2023; Lukić et al., 2021; Parubova and Perevedencev, 2022,

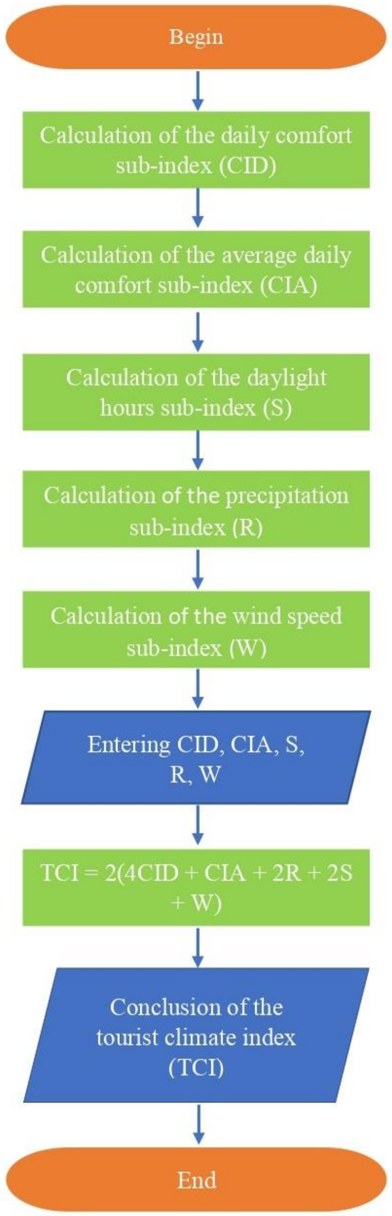

Figure 2. Algorithm for determining the TCI

is subject to active criticism (De Freitas et al., 2008; Rutty and Scott, 2014; Scott et al., 2012). As the main shortcomings, opponents point to the subjective assessment system and the distorted share of climate variables, suggesting abandoning it in favor of the Holiday Climate Index (HCI) developed in opposition to it, later differentiated into urban and beach (Scott et al., 2016), or created based on the TCI Camping Climate Index (CCI) (Rutty et al., 2020; Ma et al., 2020; Fichett and Meyer, 2023). However, despite these shortcomings, TCI is optimal for Northern Kazakhstan, because, due to the sharply continental climate, the tourist potential of the region is determined by temperature variables.

This study included the following stages: collection, systematization and analysis of initial data (basic meteorological indicators); calculation of the TCI index, interpretation of the results obtained; creation of cartographic models and conducting spatio-temporal analysis of the distribution of TCI across the territory of the region; zoning of the territory of the region according to the size of the TCI; development of proposals for the improvement of management decisions and the development of appropriate types of recreation, tourism in the region, taking into account the degree of bioclimatic comfort of the territory.

The flowchart of TCI calculation is shown in Figure 2. The index is calculated using the following formula (Mieczkowski, 1985, 225–228):

$$TCI = 2(4CID + CIA + 2R + 2S + W) \qquad (1)$$

where TCI is the tourist climate index, in points; CID – daily comfort sub-index, CIA – average daily comfort sub-index, S – daylight hours sub-index, R – precipitation sub-index, W – wind speed sub-index.The calculations were carried out by months, which made it possible to assess the bioclimatic conditions of the region for the integrative development of tourist and recreational activities throughout the year. The TCI includes five sub-indices that assess daily thermal comfort, daily thermal comfort, precipitation, sunshine duration and wind speed.

Temperature daily sub-index or daily comfort sub-index (CID) characterizes the conditions of thermal comfort in the season with maximum tourist activity.

Temperature average daily sub-index or average daily comfort index (CIA) shows the temperature comfort during the day. The temperature (thermal) comfort sub-index is calculated from the effective temperature (ET) or the equivalent effective temperature (EET). The latter indicator is a derivative of temperature, relative humidity and wind speed. Effective air temperature (EAT) or equivalent effective temperature (EET), in ºC, was determined using the formula given in:

$$ET\ (EET) = 37 – ((37- Ta) / (0.68-0.0014 \cdot Ra+1/(1,76+1.4 \cdot v\ 0.75))) – 0,29Ta \cdot (1-0.01\ Ra) \qquad (2)$$

where: Ta – atmospheric air temperature, ºC; Ra – relative air humidity, %; v is the wind speed, m/s. To calculate the sub-index SID, data on the maximum temperature per day and the corresponding indicators of relative humidity and wind speed were used, for the sub-index CIA we used average daily data.

The solar or daylight sub-index (S) reflects the duration of the sunshine period per day. This sub-index is calculated as the difference between the time of sunset and sunrise for each day of the year, taking into account the latitude of the area and the declination of the sun:

$$T_s = 12 + \frac{12}{\pi} \arccos\left(\frac{-\sin\varphi \sin\delta}{\cos\varphi \cos\delta}\right), \qquad T_r = 12 - \frac{12}{\pi} \arccos\left(\frac{-\sin\varphi \sin\delta}{\cos\varphi \cos\delta}\right) \qquad (3)$$

where Ts is the time of sunset, Tr is the time of sunrise, φ is the latitude of the area, δ is the declination of the sun.

When calculating the precipitation sub-index (R), daily precipitation figures were multiplied by the number of days in the month. The wind sub-index (W) was determined on the basis of data on wind speed and air temperature using the formula below (Mieczkowski, 1985, 225–228):

$$W = \sqrt{}\,(100v + 10.45 - v) \cdot (33 – Ta) \cdot 1.162 \qquad (4)$$

where: Ta – atmospheric air temperature, ºC; v is the wind speed, m/s. When calculating the TCI index, each sub-index was assigned a climatic attractiveness score, which varies from 5 (optimal) to -3 (very unfavorable). For all sub-indices, the maximum value of the assessment is taken equal to 5 points, the minimum - (-3).

Sub-index estimates of meteorological climate parameters in points are formed on the basis of empirical data from physiological studies, as well as a study of people's tourist preferences. According to these studies, the sub-indices of temperature (thermal) comfort CID and CIA are considered the most significant in terms of the total contribution to the TCI index. At the same time, the share of the daily comfort sub-index (CID) in the formation of TCI is 40%, and the daily comfort index (CIA) is 10. The solar sub-index (S) is 20%, the precipitation sub-index has the same importance, the remaining 10% of the TCI value falls on the wind subindex. The information and factual base of our study was the daily meteorological data of 63 representative meteorological stations in the region with a continuous long-term series of observations for the period 1966–2020. The main meteorological parameters (air temperature, atmospheric pressure, wind speed, relative air humidity, solar radiation intensity) were selected and summarized, which determine the bioclimatic potential of the territory for the development of tourist and recreational activities.

In addition, some meteorological parameters were taken from reference data (Agroclimatic resources of the Akmola region, 2017; Agroclimatic resources of the Kostanay region, 2017; Agroclimatic resources of the North Kazakhstan region, 2017; Agroclimatic resources of the Pavlodar region, 2017). The obtained values of the tourism climate index for the period under review were grouped according to the classification developed on the basis of empirical data (Scott and McBoyle, 2001). The TCI index is calculated for the "average person", not taking into account the individual characteristics of adaptive mechanisms. According to this classification, the maximum TCI score of 100 points characterizes the "ideal climatic attractiveness" of the territory for recreational activities.

RESEARCH RESULTS AND DISCUSSION

Due to the continental position and the associated features of the circulation of air masses, the nature of the underlying surface and the predominance of flat relief, the climate of Northern Kazakhstan belongs to the West Siberian climatic zone of the temperate belt and is distinguished by a number of features: sharply continental, the Palmer index ranges from -0.81 to -1.23, quite sharp intra-day temperature changes are typical, especially in the off-season, uneven distribution of precipitation throughout the year (with a summer maximum and a winter minimum) and from year to year. The region is characterized by abnormally cold climate for this latitude, the absolute minimum (-57 °C, Atbasar) in Kazakhstan is recorded here, the average long-term amplitude of temperature extremums is 85–88 °C.

In the north of the region, throughout the year, the midday height of the Sun varies from 11°36´ to 58°24´, and in the south - from 17°54´ to 64°38´. The length of the day varies in the north from 7 hours 5 minutes to 17 hours 17 minutes, in the south - from - from 8 hours 04 minutes to 16 hours 23 minutes per day.

The duration of sunshine increases from north to south from 2070 to 2562 hours/year. In the south of the region, the average duration of sunshine is 9.9–11.4 hours/day, in the north 9.3–10.1 hours/day. By winter, the duration of sunshine is reduced, reaching a minimum of 7.0–8.4 hours / day in December. The average long-term temperature of the summer period is +19.4 °C. At the same time, this indicator has a clear upward trend from +18.1 °C to +23.6 °C in the north from +18.1 °C in the south. In autumn, the average long-term temperature is +2.7–3.4 °C. In spring, the average long-term temperature is 4.5–6.0 °C. The average long-term temperature for the winter months is -16.8°C. The temperature difference from north to south in autumn is 1.3°C. The average annual air temperature is positive and amounts to 1.9–4.0 °C. Average January temperatures vary within -16–19 °C. The most severe weather and climatic conditions are in the north-eastern regions, the warmest and driest (located in the rain shadow) is the south-west of the region.

The average long-term annual precipitation in the south of the region is 207 mm (st. Ekidyn), increasing to the north to 420 mm (st. Saumalkol). The average annual wind speed in the north is 2.6 m / s, increasing to the south to 5.5 m / s, while in the annual course of wind speed throughout Northern Kazakhstan, 2 maximums are distinguished - in April and December (up to 34 m/s) and minimum in July. At all weather stations in the region, the prevailing wind directions on average for the year and especially in January are south and southwest. The values of the tourist climate index of the territory of Northern Kazakhstan obtained in the course of the calculations are presented in Table 1.

Table 1. TCI values of the territory of Northern Kazakhstan for the period 1966-2020 (Source: calculation is based on data: Kazhydromet, 2023)

Weather station	Months												Year
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Astana	3	2	14	24	39	62	59	62	40	26	14	0	29
Bayanaul	6	5	18	44	52	63	61	65	56	47	16	3	36
Blagoveschenka	4	4	25	37	55	64	62	66	53	37	18	2	36
Bulaevo	5	4	23	43	58	67	69	68	49	30	12	2	36
Burabai	3	5	17	40	54	63	60	62	53	45	19	4	35
Vozvyshenka	9	12	24	41	53	63	66	67	51	37	21	9	38
Imantau	2	4	14	43	59	62	61	62	55	43	23	1	36
Kokshetau	3	3	10	27	36	61	58	61	44	26	9	0	28
Kostanai	4	3	13	22	41	61	60	63	43	20	12	1	29
Kishkenekol	8	7	23	46	64	63	61	61	58	41	21	5	38
Pavlodar	4	4	16	25	49	62	61	64	48	22	15	3	31
Petropavlovsk	6	6	23	44	60	61	63	66	55	38	21	2	37
Ruzaevka	1	4	14	28	39	62	60	63	36	22	13	-2	28
Saumalkol	1	2	18	31	44	62	61	62	42	24	16	-2	30
Sergeevka	6	3	14	28	39	66	65	63	36	22	14	2	30
Taiynsha	6	5	15	38	57	59	60	60	55	35	15	4	34
Timiryazevo	4	4	12	39	53	62	60	63	51	38	18	2	34
Chkalovo	6	6	13	36	55	60	58	61	53	37	15	4	34
Yavlenka	5	3	23	45	61	64	61	61	57	40	21	2	37

The annual TCI chart of representative weather stations is given below (Figure 3). Below we present the categories of climatic attractiveness of the territory of Northern Kazakhstan, depending on the values of the index (Table 2). The main meteorological characteristics, summarized in the form of a tourist climate index, made it possible to determine the bioclimatic potential of the natural conditions of the region for the development of tourist and recreational activities.

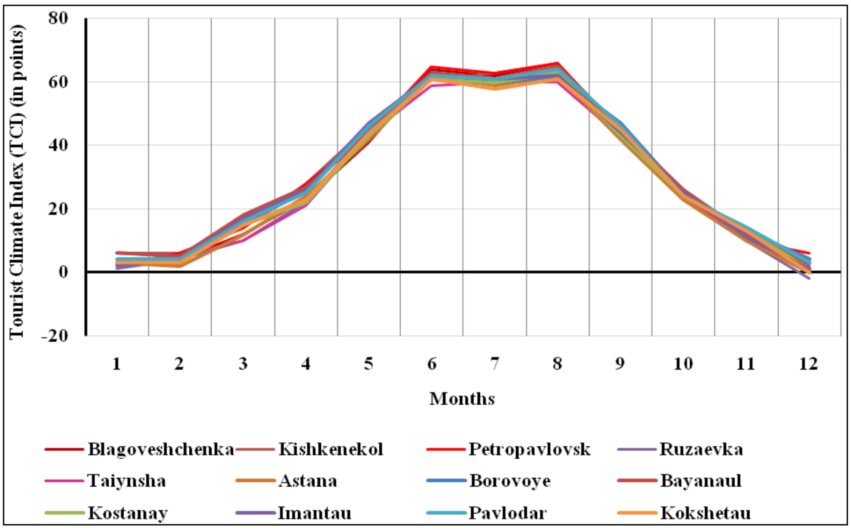

Figure 3. Annual course of TCI for a number of weather stations in Northern Kazakhstan (Source: compose is based on Table 1)

For the territory of Northern Kazakhstan, a correlation series of the dependence of the TCI value on the indicators of the main considered bioclimatic characteristics was revealed. TCI proportionally increases in summer with an increase in air temperature (in the range of +20–27 ° C) and daylight hours. In winter, on the contrary, lowering the temperature below -20 °C reduces the value of the TCI index. The increase in wind speed above 5.0 m/s also contributes to the reduction of TCI. For all seasons, an increase in the number of days with precipitation causes a decrease in the value of the TCI index.

Table 2. Tourism climate comfort index scale (Source: Adapted from Anđelković et al., 2016)

Range TCI	Rate	Meteorological determinants	Purpose
56.1–70	Comfortable	High air temperature, few days with precipitation	Beach tourism (sunbathing, swimming)
42.1–56	Moderate	Warm weather and frequent rainfall	Excursions, sailing, agrotourism, ecotourism
28.1–42	Neutral	Sharp daily temperature and pressure fluctuations	Excursions, agrotourism
14.1–28	Unfavorable	Night frosts, frequent wind	Excursions
less than 0–14	very unfavorable	Prolonged frosts, blizzards, snowstorms	Snow activities in calm days

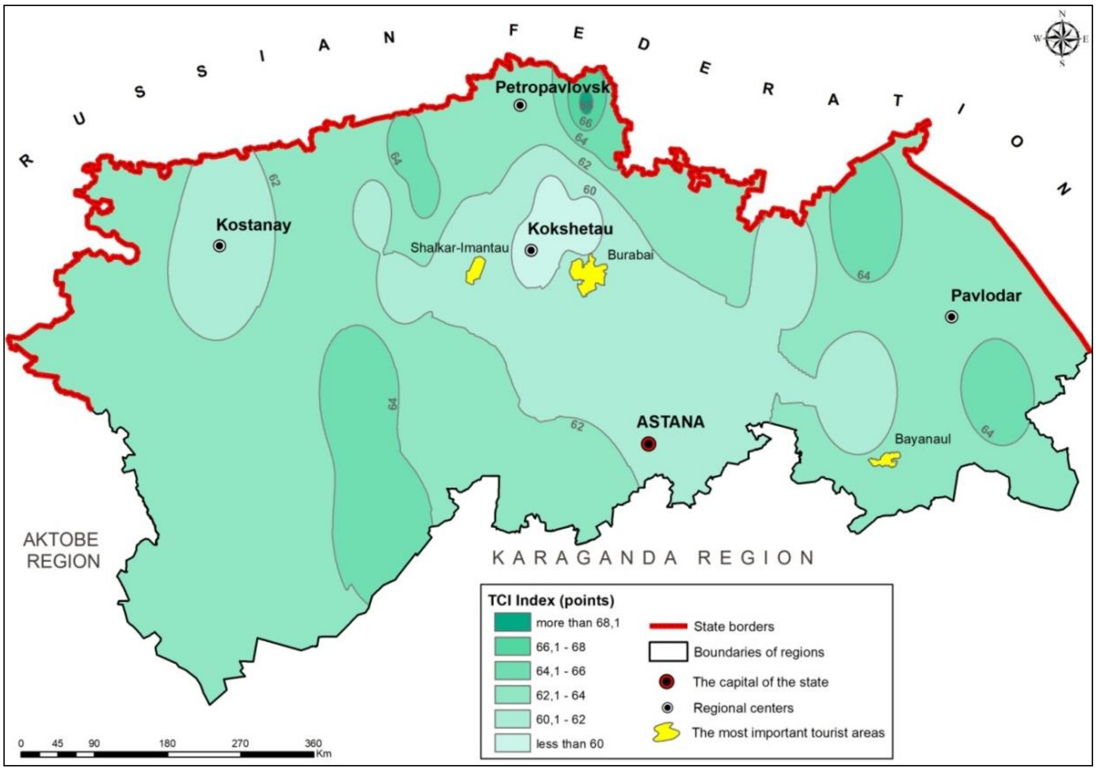

Figure 4. Zoning of the territory of Northern Kazakhstan according to summer TCI
(Source: calculation is based on data: Kazhydromet, 2023)

Thus, the most favorable conditions for tourist and recreational activities in the territory of Northern Kazakhstan are formed in the summer months, when the most comfortable meteorological conditions are observed from the standpoint of human physiology. The formation of these conditions is facilitated by 3 most important predictor factors: high air temperatures and long daylight hours. Due to high solar insolation, elevated air temperature, the underlying surface, the water column of hydro facilities is warmed up. However, the adverse effect of such important climate component as wind is clearly pronounced. In summer, especially in June, there are wind gusts reaching ≥12 m/s. In the warm period of the year, the wind contributes not only to heating the surface of the body, but also to its cooling (due to the acceleration of moisture evaporation). The similar nature of the meteorological parameters of the natural environment makes it possible to develop a wide range of recreational activities in the summer season: swimming, fishing, picking berries, mushrooms and medicinal herbs (wild plants), horseback riding, hiking, etc. A spatial analysis of the summer TCI by extrapolation of meteorological indicators revealed that the most favorable combination of bioclimatic parameters is observed in the northeastern and southwestern sectors of the region, wedges azontally to the north, mostly repeating the orography of the northern outcrops of Saryarka rocks, which makes up 27% of the territory. TCI minima are noted near the years. Kostanay and Kokshetau, which is funded by cold June and frequent winds (Figure 4).

The least comfortable parameters of bioclimatic conditions in the region are characterized by the winter period. Among the unfavorable meteorological parameters, a stable negative thermal regime stands out (on some days the thermometer drops to -40 ºC), which contributes to the shift of the optimal range of air temperature towards its decrease. Among the uncomfortable factors are also a short daylight hours (7–8 hours) and strong winds, frequent snowstorms – wind gusts of 24–34 m/s with a temperature drop to -30 ºC and less. The relatively late sunrise and the rapid onset of dusk limit the duration of a person's stay in nature in winter and his recreational activity. Strong and prolonged wind, usually at the beginning and end of winter, along with low air temperature, affects the ratio of heat accumulation in the human body, increasing its loss to the environment. Although the winter TCI of the entire territory of Northern Kazakhstan corresponds to an extremely unfavorable level, a number of areas with index maxima stand out (Figure 5). These areas are located in the north and northeast of the region, which is explained by the prevailing anticyclonic air masses, which make some types of recreation possible on clear windless days at temperatures not lower than -15–17 ºC. These are such types of recreation as skiing and sledding, horse teams, winter fishing on stocked reservoirs.

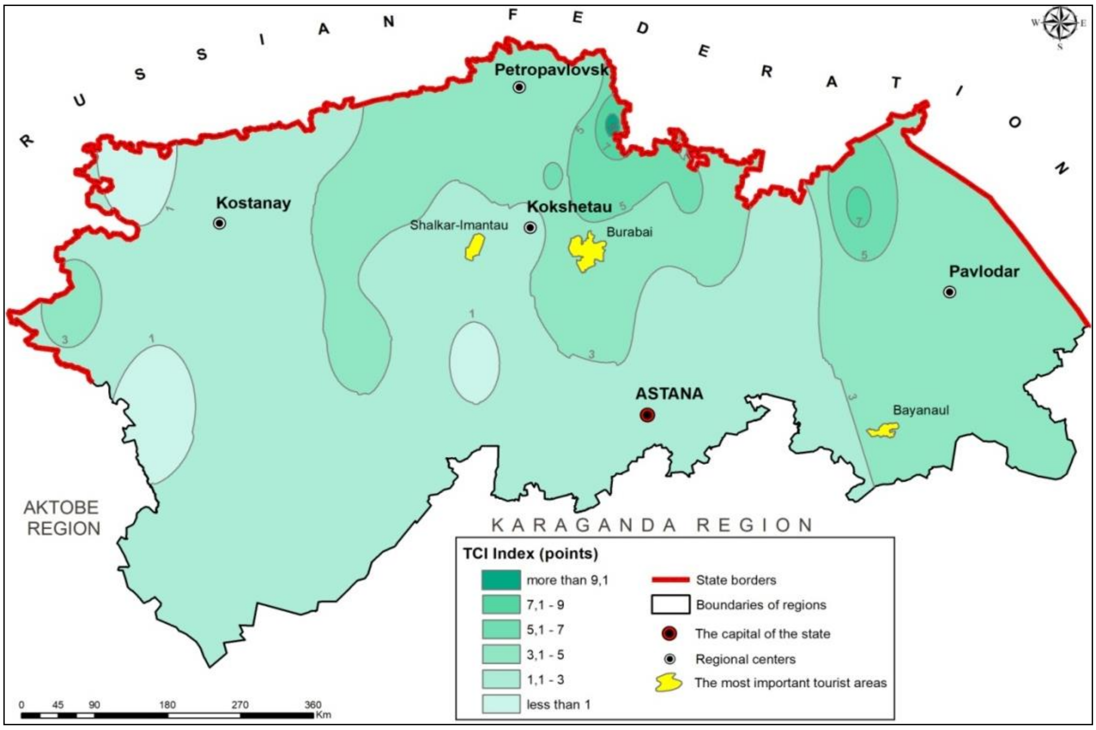

Figure 5. Zoning of the territory of Northern Kazakhstan according to winter TCI
(Source: calculation is based on data: Kazhydromet, 2023)

The conjugated analysis of the zoning of the territory of Northern Kazakhstan according to TCI and the spatial distribution of the main objects of the tourism industry revealed a number of features. Thus, Burabay, which accounts for over 60% of regional tourist sites and 85% of visits (>1 million per year), is characterized by a "comfortable" climatic attractiveness in the summer, while in the autumn, winter and spring periods this territory is characterized by low indices of the index (due to low temperatures). He second most important tourist area, Bayanaul (10% and 5%, respectively), showed a similarly high correlation of TCI values and the temporal dynamics of tourist visits.

The performed studies indicate an excessive concentration of tourist facilities in limited areas, which creates prerequisites for the differentiation of tourist business objects by seasons (winter, summer), taking into account local features of meteorological conditions and the degree of their favorableness, in addition to the formed localization pattern.

CONCLUSIONS

The obtained TCI indicators made it possible to identify the potential of the climate of Northern Kazakhstan for the development of tourist and recreational activities, identify the seasons of the year with its maximum and minimum values, and analyze the spatial and temporal dynamics within the region. As a result of the study on the assessment of the bioclimatic potential of the region based on TCI, the following conclusions can be drawn:

1. Favorable bioclimatic conditions for tourism activities in the territory under consideration are observed only in the summer period, causing a limited development of beach tourism in the lakeside areas of the considered tourist areas.

2. The territory of Northern Kazakhstan is relatively homogeneous in terms of average annual TCI – the variability does not exceed 26% (from 28 to 38). However, the intra-annual distribution of TCI values varies from a "very unfavorable" level of comfort in the winter months to a “comfortable” level in the summer throughout the territory. Spatio-temporal analysis of the intra-annual movement of TCI showed that for 5-6 months a year it corresponds to "very unfavorable" and "unfavorable" levels of comfort, which makes it extremely difficult or impossible to organize any types of tourist and recreational activities on a constant basis.

3. Favorable meteorological parameters that contribute to the tourist attractiveness of the region in the summer include: high temperatures, good insolation, sufficient daylight hours. The unfavorable ones that reduce the TCI index in winter and, accordingly, the level of tourist attractiveness, include: low temperatures and physical climatic parameters - wind and snow.

The results of the research and the collected materials can be used by regional authorities (Department of Entrepreneurship and Tourism) for decentralization and effective planning of tourist and recreational activities in the territory of Northern Kazakhstan.

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BRICS INBOUND AND OUTBOUND TOURISM VERSUS SOCIO-ECONOMIC INDICATORS

Rodrigo V. VENTURA *
UFRJ Federal University of Rio de Janeiro, COPPE Production Engineering Program;
IBGE Brazilian Institute of Geography and Statistics, Rio de Janeiro, Brazil, e-mail: rodrigo.ventura@ibge.gov.br

Elton FERNANDES
UFRJ Federal University of Rio de Janeiro, COPPE Transportation
and Production Engineering Programs, Rio de Janeiro, Brazil, e-mail: tglcoppe@gmail.com

Ndivhuho TSHIKOVHI
Durban University of Technology, Faculty of Management Sciences, Durban, South Africa, e-mail: ndivhuhot@dut.ac.za

Reshma SUCHERAN
Durban University of Technology, Department of Hospitality and Tourism,
Faculty of Management Sciences, Durban, South Africa, e-mail: reshma@dut.ac.za

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Abstract: BRICS assemblies focus on politics and security, economics, and finance, and cultural and people-to-people exchange. Since these areas depend on global air transit and tourism, seamless movement is essential. Tourism fosters cultural proximity and human encounters, benefiting nations and businesses. This study aims to analyse tourism and socio-economic dynamics considering globalisation and socio-economic structural factors. The study examines economic growth, travel, and financial success in BRICS nations. The panel data regression method is applied to highlight the relations between tourism and socio-economic indicators among BRICS and G7 countries. Temporal and territorial aspects and all regression studies were performed using the statistical modelling programme EViews 11. The study found inbound and outward connections between globalisation, dynamic socio-economic indicators, and each country's structural indicators. These tripartite aspects explained BRICS inbound and outward travel, but both are in constant change over time. Results show that the actual globalisation paradigm favours developed nations in the tourism sector, emerging BRICS nations show hopeful socio-economic structures, however they need to find new unique strategies to achieve a fair share of the new emerging world middle class tourism market. The old one is already taken by developed countries and they will fight to expand it.

Key words: BRICS, tourism, air transport, inbound, outbound, socio-economic, economies

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INTRODUCTION

In 2009, emerging nations formed the BRIC multilateral cooperative arrangement with the aim of promoting their development and sustainability. The participating countries included Brazil, Russia, India, and China. Later, in 2011, South Africa joined the group, which then became known as BRICS. BRICS is a significant multilateral cooperative framework that unites the foremost emerging economies worldwide, encompassing 42% of the global population, 24% of the global GDP, and more than 16% of involvement in global trade (Ambardar, 2017). BRICS nations have served as the primary drivers of worldwide economic expansion in recent years, and since their inception, these countries have convened to discuss significant matters under three fundamental pillars, namely political and security, economic and financial, and cultural and people-to-people exchanges. The present research is centred on the final two pillars, with a particular emphasis on interpersonal interactions that occur between individuals, not solely for the purpose of fulfilling business or educational obligations, but also for fostering a cultural approach that promotes closer ties between nations in a sustainable manner over the long term. Tourism is a crucial element that facilitates cultural proximity and fosters interpersonal interactions, which yield benefits for both nations and corporations. Congruently, air transportation plays a vital role in facilitating international travel within the tourism sector (Mishra et al., 2021).

The most important air routes in the world connect North America, Europe, and Asia in the northern hemisphere. Middle Eastern nations have also been investing heavily in the region over the past several years to revive its former status as a commercial crossing point between the West and the East, with most of the funding going towards tourism. Several attempts have been made to develop new routes to what was formerly known as the "Silk Road" (Syed et al., 2021). Geopolitical concerns, however, impede or even block these alternatives from transferring people and products. The BRICS coalition possesses a relative advantage in the realm of tourism, as there is a consistent growth in the quantity of tourists arriving in the

* Corresponding author

individual BRICS nations. According to a report by the World Bank (2019), the rise in BRICS tourists can be attributed to the hosting of the 2010 soccer World Cup in South Africa, the 2014 soccer World Cup in Brazil, and the 2018 Russia World Cup.

Moreover, India has played host to numerous cricket tournaments, while China has organised several Olympic games. In addition to the comparatively relaxed travel regulations in these countries, the bloc is a popular destination for tourists who are drawn to the stunning landscapes of its constituent countries. This is evidenced by the fact that all member states rank within the top 20 countries for tourist attractions (United Nations World Tourism Organisation, 2019). The rise in tourist arrivals has contributed to the enhancement of international trade among the BRICS nations. Therefore, effective utilisation of international trade in these nations has the capacity to enhance economic progress in individual countries.

The presence of a robust tourism is known to have a positive impact on economic expansion and progress. The prospective economic advantages of tourism hold considerable appeal for developing nations. Several emerging nations are opting for or receiving recommendations to prioritise the development of tourism as opposed to conventional industries like agriculture and manufacturing (Mishra et al., 2021). Empirical research has predominantly concentrated on the body of literature that posits tourism as a catalyst for fostering economic development. Despite the economic importance of BRICS countries in the tourism industry, there is a noticeable lack of research investigating the relationship between tourism and poverty reduction in the collective context of the BRICS nations. This gap highlights the need for further research on the topic within the context of the group of nations. The contemporary literature presents contradictions that sustain the absence of agreement regarding the impact of tourism on poverty reduction. This highlights the possibility of diversity in the effects of tourism on poverty across BRICS countries. This research, therefore, investigates the correlation between tourism and a nation's socio-economic dynamics, the global trend of globalization, and the socio-economic structural indicators of countries, contingent upon air travel. This study explores the potential connections between economic growth and tourism in BRICS countries, while also examining the significance of financial development within this framework. The goal was to provide additional evidence supporting the existence of a nexus between these factors. Tourism is an integral element in the BRICS framework for international collaboration, and comparisons between the BRICS and G7 countries in this study, in terms of tourism, sheds light on potential growth prospects for these nations.

LITERATURE REVIEW

The emerging middle class (Clément et al., 2022), mainly from developing countries like the BRICS, has become a significant driving force in the tourism market (WEF, 2013, 2015). Their growing purchasing power, changing travel patterns, and diverse interests have reshaped the industry, creating new opportunities and challenges for destinations, businesses, and policymakers alike (OECD, 2018). Comerio and Strozzi (2019) show a review on the tourism economic impact in all aspects. They show several lines of research underway for the future. None of them approach the developed countries battle to retain preference of tourism destination, which is a challenge for emerging countries to overcome.

Given the palpable economic value of the global tourism industry, tourism has thus far been propagated as a catalyst for both the economic development and rapid global value-chain integration of most emerging and developing countries (Garidzirai and Matiza, 2020; Garidzirai, 2022). The advancement of tourism within an economy has the potential to make a significant contribution to long-term human development (Biagi et al., 2017; Croes et al., 2020, 2021). Tourism is a highly integrative economic activity - contributing to the socio-economic development of host economies through employment creation, tax base expansion, infrastructure improvement, public resource development, and export earnings. Moreso, the role of tourism as a vector of poverty alleviation/reduction has emerged as a critical debate within the tourism economics discourse (Rasool et al., 2021). Tourism is a crucial factor in addressing macroeconomic challenges such as reduced income and output, elevated unemployment rates, inadequate capital, insufficient foreign exchange, fiscal deficits, and imbalances in the balance of payments (Belke et al., 2021), and it can contribute to the eradication of poverty in developing nations (Henama, 2013). To guarantee that tourism is pro-poor, however, concerted efforts must be made to ensure that the advantages of tourism flow effortlessly to poor and vulnerable groups of people at a destination. Since widespread poverty may result in economic prosperity, pro-poor tourism is essential. Traveling to a destination area for the purpose of consuming a product related to tourism is known as tourism. This means that to get to the tourism destination region, travellers must take a journey, or at least a portion of a trip, from the region that produces tourists and pass through a transit area. Aviation is crucial for tourism and an important engine of economic growth, particularly in developing countries. Therefore, by enabling the free movement of goods and people, the liberalisation of air services may be advantageous to a country's economy.

Majority of BRICS countries share two traits: first, they are long-haul destinations, and second, they provide a small market with significant development potential. The integration of nations through socioeconomic, political, and cultural means, commonly referred to as globalization, has a favourable impact on the advancement of tourism. This, in turn, contributes to the growth of the economy. Within this framework, the amalgamation of the BRICS countries (Brazil, Russia, India, China, and South Africa) can be perceived as a significant illustration of global economic integration that has the potential to stimulate international tourism and propel their economic advancement and progress. During the BRICS Xiamen Summit of 2017, which took place in China, the significance of tourism as a catalyst for economic growth within these nations was acknowledged (Rasool et al., 2021). In 2019, the tourism industries of BRICS nations exhibited remarkable standings in global competitiveness (Pop, 2020). The advancement of the tourism industry plays a significant role in fostering sustainable economic growth in the long-term for the BRICS nations (Danish and Wang, 2018), and the impact of inbound tourism on the economic growth of BRICS nations is noteworthy and affirmative (Rasool et al., 2021). Tourism within the BRICS economies has the potential to serve as a catalyst for achieving global competitiveness (Usmani et al., 2020; Ambardar, 2017). Moreover, rising incomes, a growing middle class, and better living circumstances are all associated with the BRICS countries' rapid economic growth (Pop et al., 2016; Hieu and Hai, 2022). The tourism literature thoroughly analyses the possible contributions for emerging countries economic growth, it explores the weaknesses of emerging countries, but it fails to consider the possible advances of developed countries to continue expanding their tourist market, not allowing the emerging ones to advance. The confrontation of data from BRICS and G7 highlights some of the challenges.

Data and analytical methodology

Due to the time dependence of the explanatory variables and considering that information is available for a range of units in a cross-sectional data format, the panel data technique was applied. Also referred to as longitudinal data, this approach deals with a time series of cross-sectional observations on a specific group of units. The panel thus reports cross-section data for the same units over time. In this approach, the variables are all collected at different points in time, usually over the entire analysed period, for the same element. In longitudinal studies, an individual's observations are correlated over time, requiring statistical techniques that consider this dependence (Twisk, 2013). The advantages of panel data analysis include the potential to study dynamic relationships over time and modelling individuals' differences (Frees, 2004).

For panel data, the standard linear model can be denoted by: $Y = X\mathrm{B} + \mathrm{E}$ (1)

Where: $$Y_{NTx1} = \begin{bmatrix} Y_1 \\ \vdots \\ Y_N \end{bmatrix},\ X_{NTxk} = \begin{bmatrix} X_1 \\ \vdots \\ X_N \end{bmatrix},\ \mathrm{E}_{NTx1} = \begin{bmatrix} \mathrm{E}_1 \\ \vdots \\ \mathrm{E}_N \end{bmatrix},\ \mathrm{B}_{kx1} = \begin{bmatrix} \beta_1 \\ \vdots \\ \beta_N \end{bmatrix}. \quad (2)$$

And: $$Y_i = \begin{bmatrix} Y_{j1} \\ \vdots \\ Y_{jT} \end{bmatrix},\ X_i = \begin{bmatrix} X_{j11} & \cdots & X_{jk1} \\ \vdots & \ddots & \vdots \\ X_{j1T} & \cdots & X_{jkT} \end{bmatrix},\ \mathrm{E}_i = \begin{bmatrix} \mathrm{E}_{j1} \\ \vdots \\ \mathrm{E}_{jN} \end{bmatrix},\quad \begin{matrix} i = 1, \dots, N, \\ j = 1, \dots, n. \end{matrix} \quad (3)$$

The model's assumptions follow those established by the classical multiple linear regression model, except that the latter does not use panel data structure. Thus, the errors should be independent and identically distributed (*aid*), as well as homoscedastic - that is, for a particular individual, the observations are uncorrelated and, between individuals and time, the error variance is constant. Nevertheless, the benefit of employing the panel data frame is to analyse the individuals' patterns over time, revealing any differences they may have (Frees, 2004). Such differences between individuals arise from the similarities observed in the data compiled for a particular unit. The non-inclusion of this factor in the model could result in biased estimators. So, an upgraded model is introduced in which there is a structure to the error term, assuming that differences between the units can be absorbed through differences in the constant term:

$$\begin{aligned} Y_{it} &= X_{it}\mathrm{B} + \varepsilon_{it}, \\ \varepsilon_{it} &= \alpha_i + \mathrm{N}_{it},\quad \mathrm{N}_{it} \sim iid(0, \sigma^2). \end{aligned} \quad (4)$$

Equation 4 is summarised as: $Y_{it} = \alpha_i + X_{it}\mathrm{B} + \mathrm{N}_{it}$. (5)

Where, in Equations 1 to 5, Y_{it} is the dependent variable for each individual i at period t, B is the angular coefficient of the j-th explanatory variable X_{it} for j =1,...,n and ε_{it} is the idiosyncratic error since it varies with the cross-section (that is, the individual) and also over time. Within this mathematical expression, α_i denotes the individual effect (with variation across individuals and constancy over time), and N_{it} varies independently of individual or time. With this new model, the heterogeneity among the panel individuals can be better reflected (Johnston and DiNardo, 1963).

Based on the assumed individual effects, the model can still be divided into various parts. The first is the random-effects model, in which each individual effect is independent of the explanatory factors, suggesting that it is random and unaffected by the covariates of the model. The second is the fixed-effects model, which considers the possibility of a relationship between the individual effect and the explanatory factors in the model. The effect is fixed based on the variables and does not happen arbitrarily. Because they consider the variations in airline connections, the models that consider the individual impact provide a great deal of versatility. We solely take the fixed-effects model into consideration in this working paper. Figure 1 summarises the methodological approach employed in the study.

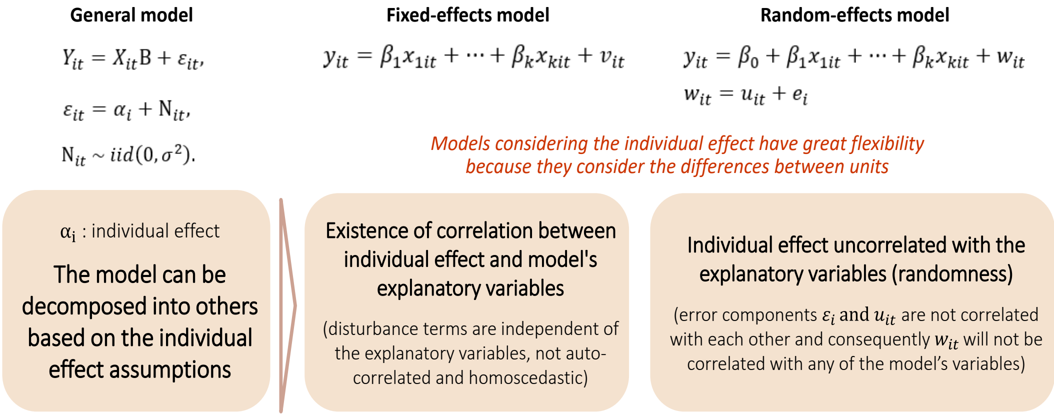

Figure 1. Panel data models

Given the panel data approach, it is necessary to assume the possibility of such effects for both the cross-section and the period. Thus, the general model applied for estimating the regression parameters is presented below in Equations 6 and 7.

Firstly, the analytical model for inbound tourism:

$$\log(inbound) = \log(income\ level) + \log\ (currency\ power) + \log\ (transport\ cost) + \log\ (trade\ openness) + c \quad (6)$$

Furthermore, the model for outbound tourism is described as:

$$\log(outbound) = \log(income\ level) + \log\ (flight\ departures) + \log\ (currency\ power) + c \quad (7)$$

Variables definition:

Data sources: World development indicators (World Bank -https://data.worldbank.org/) and United Nations World Tourism Organization data (UNWTO https://www.unwto.org/tourism-statistics-database)

Log (inbound) – inbound tourism, indicating the number of tourists arriving from other countries.

Log (outbound) – outbound tourism, indicating the number of tourists travelling to other countries.

Log (openness) – share of tourism receipts and expenditure in the country's GDP indicating the country's level of tourism openness.

Log (income level) – GDP per capita constant US$ 2015, indicating the country's economic development level.

Log (flight departures) – number of regular flight departures, indicating the country's level of air travel mobility.

Log (currency power) – exchange rate for the constant value of GDP in PPP 2017 less exchange rate for the constant value of GDP in US$ 2015 indicating the purchasing power of the local currency (a negative value indicates a strong country currency; a zero value indicates equivalence to the dollar, and a positive value indicates a weak currency relative to the dollar).

Log (transport cost) – participation of transport costs relative to revenues (inbound) in the country.

Log (trade openness) – participation of imports and exports in the country's GDP, indicating the country's openness to international trade. Regressions were conducted for the BRICS countries and the G7 countries to construct comparative analyses in the temporal and territorial dimensions. The econometric software for statistical modelling, EViews 11, was the tool applied to run all the regressions (Eviews 11, 2019).

CASE STUDY

During a gathering of tourism ministers from BRICS nations on July 13th, 2021, a consensus was reached to engage in collaborative efforts with the tourism industry to fully realise the potential of BRICS countries. Nonetheless, a clear definition of effective measures to accomplish this objective was not provided. Table 1 displays a representative selection of the world's most heavily populated countries, along with information regarding the number of international tourists who have visited each country. According to the ITurArr index, which measures the number of tourist arrivals (TurArr) per capita, India and Brazil exhibit the weakest correlation among the countries included in the sample. This indicator illustrates the relatively low standing of these nations in terms of global tourism. Except for Mexico, emerging and developing countries exhibit a low level of IT utilisation and adoption, suggesting a lack of development in this crucial economic domain. A distinct scenario is revealed when comparing the metrics of the BRICS countries to those of the five G7 nations, which constitute the block of the world's wealthiest countries.

Table 1. Population (Pop), international tourism arrivals (TurArr) and Intensity of TurArr (ITurArr) by country in 2019 (Source: World Bank, 2019)

Country Name	Country Code	Pop	TurArr	ITurArr*
China	**CHN**	**1,397,715,000**	**162,538,000**	**0.12**
India	**IND**	**1,366,417,756**	**17,914,000**	**0.01**
United States	USA	328,329,953	166,009,000	0.51
Indonesia	IDN	270,625,567	16,107,000	0.06
Brazil	**BRA**	**211,049,519**	**6,353,000**	**0.03**
Russian Federation	**RUS**	**144,406,261**	**24,419,000**	**0.17**
Mexico	MEX	127,575,529	97,406,000	0.76
Japan	JPN	126,264,931	31,882,000	0.25
Philippines	PHL	108,116,622	8,261,000	0.08
Egypt, Arab Rep.	EGY	100,388,076	13,026,000	0.13
Vietnam	VNM	96,462,108	18,009,000	0.19
Turkey	TUR	83,429,607	51,747,000	0.62
Germany	DEU	83,092,962	39,563,000	0.48
Iran, Islamic Rep.	IRN	82,913,893	9,107,000	0.11
Thailand	THA	69,625,581	39,916,000	0.57
United Kingdom	GBR	66,836,327	40,857,000	0.61
Italy	ITA	59,729,081	95,399,000	1.60
South Africa	**ZAF**	**58,558,267**	**14,797,000**	**0.25**
Tanzania	TZA	58,005,461	1,527,000	0.03
Myanmar	MMR	54,045,422	4,364,000	0.08
Kenya	KEN	52,573,967	2,049,000	0.04
Korea, Rep.	KOR	51,709,098	17,503,000	0.34
Colombia	COL	50,339,443	4,529,000	0.09
Spain	ESP	47,133,521	126,170,000	2.68
Argentina	ARG	44,938,712	7,399,000	0.16

*ITurArrr=TurArr/Pop. In red are G7 countries, and in bold are BRICS countries

Table 2 presents the influx of visitors in BRICS countries during the year 2009, which marks the inception of the organization, and represents the latest data accessible for the current investigation. Except for India, the tourist movements of the BRICS nations exhibited varying rates of increase. China and South Africa experienced a positive shift in their international tourist balance, with China and Russia receiving the highest volume of inbound tourists. The remaining flows exhibit a relatively moderate magnitude. Brazil's tourism industry lags behind that of its BRICS counterparts, largely due to its geographical distance from major international markets in the Northern Hemisphere, particularly the Asian market. The quantity of inbound tourists to India experienced a significant increase.

Table 2. Arrivals of non-resident tourists at national borders, balance between inbound and outbound 2018, and growth by country (Source: UNWTO - United Nations World Tourism Organization, 2019)

Country	2009	2018	Balance 2018	Change 2018-2009
Brazil	4,802,217	6,621,376	- 4,565,579	1.38
Russia	21,338,650	24,550,910	- 19,090,543	1.15
India	5,167,699	17,423,420	- 1,971,775	3.37
China	126,475,923	158,606,390	80,929,046	1.25
South Africa	9,531,615	15,004,384	8,471,754	1.57

The tourism flows of the BRICS nations exhibit notable disparities, prompting several critical questions. What strategies can be employed to promote tourism growth within the BRICS countries despite existing barriers? What measures can these countries take to improve their international tourism status? What is the impact of socioeconomic indicators and globalisation on tourism in both developing and affluent countries? While it is true that neighbouring countries tend to engage in more trade and commerce with each other due to their proximity, significant trade flows can still be observed between geographically distant nations, particularly in the context of tourism.

Consequently, it is imperative to re-examine the tourism industry and assess the dynamics of inbound and outbound tourism in every nation. The present research opted to utilise a collection of variables that were made available through the World Development Indicators and the United Nations World Tourism Organization with the aim of evaluating the aforementioned concerns. Alternative variables could conceivably be employed in this investigation; however, the authors have elected to emphasise three methodological facets: the socio-economic dynamics of the nation, globalization, and socio-economic structure. The present investigation examines the panel data regressions of BRICS and G7 nations with the aim of elucidating possible future trends in these facets.

RESULTS AND DISCUSSION

The first model showcases the regression estimation of panel data for inbound tourism in both the BRICS and G7 nations. The four explanatory variables pertaining to inbound tourism signify the underlying dynamics of countries in relation to their income, currency purchasing power, air transportation costs, and trade openness. The present model solely considers income level as the elastic variable, exhibiting a coefficient greater than 1 for the BRICS nations.

Model 1. Inbound tourism BRICS and G7
Dependent variable: log(inbound)
Method: Panel Least Squares
Sample: 1995 2018 Periods included: 24

	BRICS		G7	
Variable	Coefficient	Prob.	Coefficient	Prob.
log (income level)	1.612167	0.00	-0.116929	0.69
Log (currency power)	0.150289	0.09	1.378725	0.10
log (transport cost)	-0.276255	0.00	-0.144363	0.15
log (trade openness)	0.489155	0.01	1.320593	0.00
C	-0.169159		13.21927	
Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
Adjusted R-squared	0.97		0.96	

The variable in question pertains to the mean income of the nation's residents, rather than the income of the tourist. This may be construed as a measure of their socio-economic status. The positive income evolution of the BRICS countries is perceived as a factor that enhances their appeal to international tourists. The variable in question did not accurately reflect the G7 nations, as it was assumed that visitors were already cognizant of encountering a society that is more advanced. Despite exhibiting an inelastic coefficient of less than 1, trade openness remains the second most significant determinant that positively contributes to the development of inbound tourism in the BRICS nations. The escalation in trade volume with foreign nations indicates a strengthening of the country's trade relations, potentially leading to an upsurge in commercial partnerships and a corresponding increase in the inclination of visitors to travel to the country. The elasticity of trade is a crucial variable for G7 nations, highlighting the necessity of maintaining open trade policies even in the context of tourism expansion in developed economies. The third variable under consideration pertains to the impact of transportation costs on the total expenses incurred by tourists visiting BRICS countries. This factor poses a significant constraint on the tourist's itinerary, as it curtails the financial resources at their disposal for availing other services during their trip.

The typical tourist is constrained by a limited budget while on vacation, and as a result, any rise in transportation expenses diminishes the financial resources that can be allocated towards other leisurely pursuits. The aforementioned variable exhibits analogous behaviour in both G7 and BRICS nations. However, the statistical examination indicates a lack of significance. The fourth variable indicates that a decrease in the value of a country's currency has a positive effect on the number of tourists visiting that country. A devaluing currency may enhance the purchasing power of tourists, enabling them to acquire a greater number of goods and services during their stay in the host country, thereby contributing to a more gratifying travel experience. The variable in question appears to hold significant importance and flexibility for the G7 nations.

However, in Model 2, it was observed that some of the variables utilised in Model 1 were insufficient in explicating the intricacies of the expansion of BRICS outbound tourism. A variable that was deemed insignificant in Model 1 was found to be significant in the context of outbound tourism among the BRICS countries. The chosen indicators pertaining to the BRICS nations did not exhibit a noteworthy influence on the G7 nations. Several studies suggest that international travel ranks as the second most sought-after aspiration among the expanding middle-income demographic. The present study's experiments investigated the potential correlation between a country's air mobility and the frequency of aircraft departures. The aforementioned variable exhibits statistical significance in the G7 nations regression estimate, despite its unexpectedly adverse effect. Despite the inelasticity of income, it exhibited the highest coefficient in the regression analysis, indicating the importance of income growth in relation to outbound tourism. The increase in income levels among the middle class in developing countries may lead to an expectation of increased foreign tourism. The coefficient in G7 nations exhibits no statistical significance, suggesting that the income level is adequate and unlikely to have a discernible impact. The analysis conducted on BRICS tourists identified the evolution of air transportation as the second most noteworthy factor. Paradoxically, it has been observed that the purchasing power of a country's currency has a positive correlation with the tendency for foreign tourism in BRICS nations. Specifically, as the currency weakens, the inclination for foreign tourism in these nations tends to increase. The concept of a devalued currency within a nation implies that foreign visitors would be able to procure goods and services at a lower cost in other countries, thereby fostering a positive inclination towards such a prospect. In terms of income level, the strength of currency holds minimal significance for visitors from the G7 nations. The aforementioned components serve to exemplify the diverse aspects of outbound tourism with regards to socioeconomic factors.

Model 2. Outbound tourism
Dependent variable: log(outbound)
Method: Panel Least Squares
Sample: 1995 2018 Periods included: 24

	BRICS		G7	
Variable	Coefficient	Prob.	Coefficient	Prob.
log (income level)	0.764022	0.00	0.151397	0.38
log (flight departures)	0.435334	0.00	-0.184540	0.07
Log (currency power)	0.135103	0.00	0.307126	0.40
C	3.735494		18.72957	
Effects Specification				
Cross-section fixed (dummy variables)				
Period fixed (dummy variables)				
Adjusted R-squared	0.97		0.96	

The regression equation provides an estimation for the second component of the variation in tourist indicator variables that is dependent on the period. The period fixed effect in Figure 2 illustrates the observed variance. The observed difference can be ascribed to the impact of globalisation on the inbound and outbound tourism trends of the BRICS and G7 nations. Although there is a positive trend in the impact of outbound tourism, it is evolving at a faster rate than the impact of incoming tourism in both cases. Both phenomena, namely stagnation and the commencement of a new phase, have been observed. The latter is expected to occur in 2020, because of the COVID-19 pandemic. These trends suggest that the BRICS nations are primarily recognised as sources of tourists rather than as destinations for tourism. The task of redirecting the inclination of tourists from developed nations towards emerging countries is a challenging one, as it is shaped by factors such as education, media representation that is subject to scrutiny or may be inaccurate, and the promotional endeavours of the tourism industry in these nations. In contrast, developing countries are actively establishing and advancing fundamental components necessary for educating their populace, while simultaneously imparting knowledge regarding optimal practises and standards. The process of globalisation is a significant aspect of the project. The fixed impact of the period on inbound tourism for G7 countries was 0.42, whereas for BRICS nations it was 0.32. The G7 countries exhibited a variance of 0.55 in outbound tourism, while the BRICS countries demonstrated a variance of 0.86.

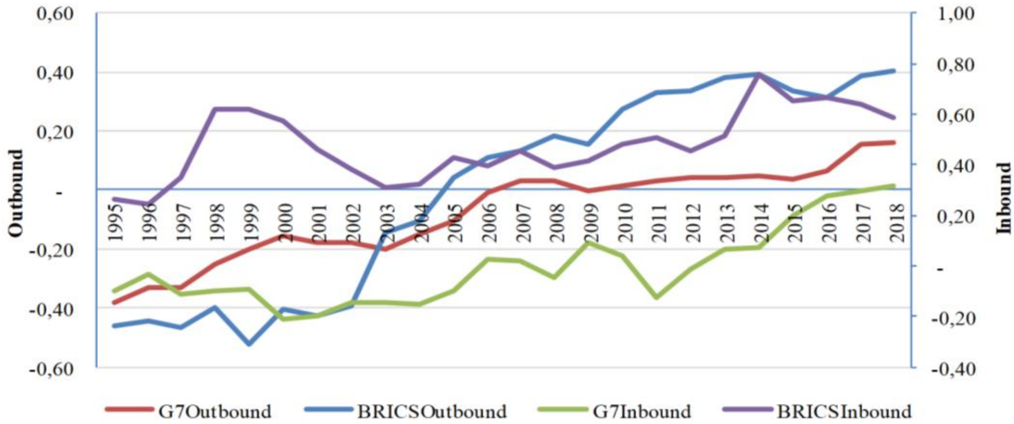

Figure 2. Inbound and outbound period fixed effect

The cross-section fixed effect, which this study defines as the demographic and economic structure of the nations with reference to the arrival and departure of tourists, is the third part of the panel data regression analysis. Tables 3 and Table 4 provide the coefficients of these impacts for each BRICS and G7 nations. The most reliable indicator for receiving and departing BRICS visitors is China, whereas the most reliable indicator for G7 visits is the United States. India, although having a slightly lower level of reception, has the second-best structure among the BRICS countries.

In terms of the structural level of tourist arrivals, South Africa and Russia are comparable, although Russia is better positioned in outbound tourism. Brazil has the lowest tourist arrival and departure indices, and an even lower inbound tourism indicator. France is a prominent member of the G7 countries in Europe. In addition to other factors that need to be considered, the nations each have unique structural characteristics, such as population, territory, and levels of import and export. Indicators at the structural level show that there is an imbalance between these indicators, even within the BRICS countries. This imbalance may be addressed in relation to the rest of the world and among these countries, especially by bolstering intra-BRICS ties and emerging country interactions in general. The socioeconomic structural gap between the BRICS and G7 countries widens when the cross-section fixed effect is combined with the constants from Models 1 and 2. This distinction gives G7 countries a considerable tourism competitive advantage over BRICS economies.

Table 3. Inbound and outbound cross-section fixed effects on BRICS

Acronym	Country	Inbound	Outbound
CHN	China	2.66	0.92
IND	India	0.66	0.89
RUS	Russian Federation	-0.75	0.37
ZAF	South Africa	-0.75	-1.05
BRA	Brazil	-1.82	-1.13

Table 4. Inbound and outbound cross-section fixed effects G7

Acronym	Country	Inbound	Outbound
USA	United States	2.04	1.12
FRA	France	1.15	- 0.64
ITA	Italy	-0.13	- 0.29
GBR	Great Britain	-0.24	0.25
CAN	Canada	-0.54	- 0.02
JPN	Japan	-0.85	- 1.14
DEU	Germany	-1.41	0.73

CONCLUSION

This report is part of continuing research on tourism in emerging nations. The findings demonstrate substantial variations between developing and developed economies. In terms of socioeconomic structure, developed economies in North America and Europe have a considerable advantage over emerging economies in attracting visitors. Actual elements of globalisation support prosperous economies. However, rising economies have more dynamic socioeconomic traits, resulting in modest tourist advantages for them. This is an undesirable condition for developing economies to compete in the arena of advantaged economies. A paradigm shift is necessary to achieve more stability in the global tourist landscape. Instead of attempting to attain North American or European norms to catch up with established economies, developing nations should concentrate on their rising middle-class market, which will drive the expansion of the global economy in the future years. Cost-effective improvements must be made to the transit routes between emerging nations.

Based on their ideals, they must promote inter-people exchange and cultural integration. There is a great amount of research to be conducted on this topic; nevertheless, we must grasp what is most essential for this significant portion of the globe, considering its values and expectations. To conserve national cultures and establish a balance of cultural integration, education and the media in rising and underdeveloped countries must be enhanced. Worth mentioning that the two-stage least squares (2SLS) method could be appropriate to correct the possible endogeneity of some variables (for example: price). Nevertheless, a limitation of the study is finding a same instrumental variable suitable for geographic regions that are notably heterogeneous. Considering a constant year-to-year effect is another study limitation, since it is known that the globalisation process presented distinct dynamics throughout the considered period: more intense at the beginning and moderate after the effects of the global financial crisis that erupted in 2008. Nevertheless, we consider the estimate presented here already acceptable as the model presents a high determination coefficient (adjusted R-squared).

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- original draft preparation, R.V. and E.F.; writing - review and editing, N.T. and R.S.; visualization, R.V. and E.F.; supervision, E.F.; project administration, N.T. All authors have read and agreed to the published version of the manuscript.

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STUDY OF THE EFFECTIVENESS OF TOURISM AND LOCAL LORE ACTIVITIES OF GEOGRAPHY TEACHERS IN KAZAKHSTAN

Yerlan ISSAKOV
Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Department of Geography and Ecology, Almaty, Kazakhstan, e-mail: erlan.issakov@gmail.com

Bagdagul IMANBEKOVA
Al-Farabi Kazakh National University, Department of Geography, Faculty of Geography and Environmental Sciences, Land Management and Cadastre, Almaty, Kazakhstan, e-mail: saulet.78@mail.ru

Ardak BEISEMBINOVA
Al-Farabi Kazakh National University, Department of Geography, Faculty of Geography and Environmental Sciences, Land Management and Cadastre, Almaty, Kazakhstan, e-mail: ardak_bs@mail.ru

Aitolkyn MOLDGALIYEVA
Al-Farabi Kazakh National University, Department of Geography, Faculty of Geography and Environmental Sciences, Land Management and Cadastre, Almaty, Kazakhstan, e-mail: moldagaliyeva.aitolkyn2016@gmail.com

Zarema ABISHEVA
Al-Farabi Kazakh National University, Department of Geography, Faculty of Geography and Environmental Sciences, Land Management and Cadastre, Almaty, Kazakhstan, e-mail: abishevazarema@gmail.com

Nurbol USSENOV
Abai Kazakh National Pedagogical University, Institute of Natural Sciences and Geography, Department of Geography, Environment and Services, Almaty, Kazakhstan, e-mail: nurik_88_kaznpu@mail.ru

Lóránt Dénes DÁVID[*]
John von Neumann University, Faculty of Economics and Business, Kecskemét, Hungary; Hungarian University of Agriculture and Life Sciences, Institute of Rural Development and Sustainable Economy, Gödöllő, Hungary, e-mail: david.lorant.denes@gtk.uni-neumann.hu

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Abstract: Tourism and local lore activities in the system of geographical education are the leading direction of learning the history, natural features, ethnography and cultural heritage of the region and shaping the local image of the region. The aim of the research was to determine the effectiveness of organisation and implementation of tourism and local lore activities by geography teachers in the Republic of Kazakhstan. The research started with a review of research and literature of Kazakh and world scientists who studied tourism and local lore, and a questionnaire survey was developed that included 16 questions. The survey was distributed to geography teachers via Facebook and WhatsApp, and responses were received from 73 respondents. The survey responses were analyzed based on the coding of the respondents (P1 to P73). As a result of the survey, it was found that 47.9% of respondents have not organized tourism and local lore activities, lack of necessary equipment, lack of funds from school administration and a big number of commitments to teachers from district education department. The results of this survey will help to effectively plan and organize tourist and local lore activities of geography teachers, to manage, methodologically provide and be competent in this direction.

Key words: Tourism, local lore, geography teachers, efficiency, Kazakhstan

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INTRODUCTION

At present, the organization of tourism and local lore activities and the development of local knowledge in the geographical education system is one of the leading areas in geography teaching (Honcharuk, et al., 2021). Hiking and local lore activities enable pupils to learn the basics of tourism and local lore outside school hours, to explore their land and native land and to equip themselves with cognitive skills (Braslavska and Roghi, 2019). However, it is very important that geography teachers are competent in organising and carrying out tourism and local lore activities (Rozhi, et al., 2022). Therefore, tourism and local lore activities are seen not only as an activity, but also as one of the conditions for teaching social geography based on real-life material (Ayzhan, et al., 2021). Tourism and local lore activities aim directly at full recognition of the local area (Issakov, et al., 2021). It is also one of the most effective means of shaping students' personalities in a holistic way. Here,

[*] Corresponding author

thanks to the teacher's correct decision-making, the foundations of education are formed: the moral, political, aesthetic, labour, physical, mental and thinking abilities of the pupils are enlarged (Ivleva, 2006; Kulueva, 2021). As a form of active learning activity, hiking and local lore activities can be useful to every student. First and foremost, for the pupil, the activity is an exciting activity filled with a sense of getting to know a unique and new way of life. And for teachers, it is a way to get to know the souls of their pupils better and more deeply. However, hiking and local lore activities at school are not just fun, but a special kind of activity between leisure and work, and active life is the basis of ritual (Demeuov, et al., 2021; Rozhi, et al., 2023).

The stage of organising tourism and local lore activities for geography teachers is closely connected with the study of local history material. Tourist and local lore activities are a form of getting to know the region. The instructors of the tourist and regional studies stations or geography teachers at the school design trips, excursions, excursions and expeditions of various content, which allow the students to get to know their native land in a comprehensive way. The main types of hiking and local lore activities include hikes and excursions, tours (Daurenbaeva, 2008; Ozerov, 2021; Gubarenko, et al., 2020). Hiking and local lore activities enable pupils to get to know their historical image, the region as a place of national identity and the customs of the people living in the region, to get a general and holistic view of the history, culture, industry and science of the regionin a short period of time (Abisheva and Abdreeva, 2019).

However, it is expedient to begin preparation for tourism andlocal lore activities of a geography teacher by studying the reference literature, guidebooks, encyclopaedias, geographical, biographical, statistical data and materials. In this connection among the Kazakh scientists who studied local lore studiesthe most valuable research are Mazbayev (1993), Musaeva (1995), Mazhenakova (2004), Ivleva (2006), Omarov (2008) and Serikova (2009). Also foreign studies aimed at the development of tourism and local lore include those by Benedyuk (1999), Konstantinov (2003), Timko (2009), Volkov (2010), Matveeva (2011) and Smirnov (2012). However, there are still a lot of unresolved issues in tourism and local lore. There is no definite consensus or common methodology in relation to the organisation of tourism and local lore activities.

As a result, the level, qualification and quality of organization and implementation of tourism and local lore activities by geography teachers is not taken into account. In addition to this, the state programme for development of tourism industry in the Republic of Kazakhstan for 2019-2025 "insufficient level of qualification of teachers and specialists familiar with technologies of tourism and local lore. The need for professional development of teachers in tourism and local lore direction is 69.2%", which indicates the importance of this study (Resolution of the Government of the Republic of Kazakhstan dated May 31, 2019). Therefore, the aim of this study is to investigate the effectiveness of organization and implementation of tourist andlocal lore activities of geography teachers in the Republic of Kazakhstan.

The object of the research was geography teachers who organize tourism and local lore activities in secondary schools of the Republic of Kazakhstan (17 oblasts and 3 cities of republican significance). The research was conducted on the basis of methods of analysis, description, systematization and questionnaire data taking into account the absence of reliable data on effectiveness of tourist andlocal lore activities of geography teachers. The questionnaire was aimed at making appropriate decisions with determining the role of tourist and local lore activities of geography teachers, improving the methodological system of tourist and local lore research at school and organisation of tourist activities in education. This will help to evaluate the effectiveness of modern tourism and local lore activities of geography teachers in Kazakhstan, identify the research significance and contribute to the popularisation and improvement of knowledge about their native land. Moreover, it will be worth looking at teachers' views on cross-border activities at a later stage (Dávid, et al., 2008; Dávid, et al., 2011; Dávid and Szűcs, 2009; Bujdosó, et. al., 2011; Bujdosó, et al., 2015).

BACKGROUND

Tourism and local lore activities are an optimised tool for coordinating the education, upbringing and development of young people through tourism and local self-government and a set of tourism and local lore activities organised by educational institutions to ensure pedagogically appropriate use of learning and leisure time (Iskander, et al., 2016). Also tourism and local lore - the process of developing a sustainable cognitive interest in geography teachers, a valued attitude towards the study of the peculiarities of the native land, the acquisition of a set of knowledge for carrying out practical local lore tasks and a system of actions aimed at the implementation of cognitive, research activities of teachers and pupils (Issakov, 2022a). Summarising the concepts of "tourism", "local lore","region", "native land" and " tourism. Tourism and local lore activities are considered not only as an activity, but also as one of the conditions for teaching geography on real-life material. "Local lore" is a complex of scientific disciplines, differing in content and individual research methods, but together leading to a scientific and comprehensive knowledge of the region (Konstantinov, 2014). Tourism is local lore, but local lore is not tourism. Tourism, as an active learning activity, can be useful to every pupil (Zueva, 2017). School tourism is not just fun, but a special activity between recreation and work. It is the basis of the ritual of hiking and local lore and of active life in the school. The tourism and local lore activities are characterised by their multi-purpose character, a variety of forms (Sadykov and Gizzatzhanova, 2022). In accordance with the topic of the research, during the literature review, we found that a significant amount of research

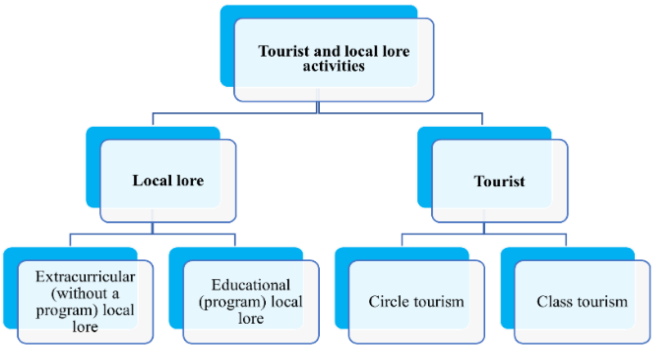

Figure 1. Interrelation of components of tourism and local lore activities, (Source: compiled by the authors on the basis of Ermolovich, 2020)

aimed at tourist and local lore activities of geography teachers has been accumulated. For example, from the Kazakh scientists: Mazbayev (1993). Dwelled on the process of preparing future teachers to manage tourism and local lore activities with students; and Musaeva (1995). Pedagogical basis allowed to form local lore activity of students in the educational process at school; Mazhenakova (2004). Dwelled on the direction of developing cognitive interest of students in the educational process of school based on local lore materials; Ivleva (2006). Considered tourism and local lore activities as means of forming moral persona in addition, Serikova (2009). Made a contribution to the Kazakh science by her dissertation research on upbringing Kazakh patriotism through tourism and local lore activities of students. And those who conducted dissertation research from foreign scientists: Konstantinov (2003). Theoretical basis of the programmatic and methodological support of institutions of additional education for children in tourism and regional studies, Volkov (2010). Tourism and regional studies resources of additional education for students with hearing loss, Matveeva (2011). The basis of the programmatic and methodological support of institutions of additional education for children in tourism and regional studies tourism and regional studies in a secondary school as a factor of socialization (Smirnov, 2012). The system of additional professional tourism and local lore education of a teacher on the basis of the cluster approach, Benedyuk (1999). Physical geography of 5-9 grades school possibilities to organize students' local lore work in the educational process and Tymko (2009).

Integration of general and additional education in the process of tourism and local lore activities of children. Thus, tourism and local lore activities play a very important role in the professional activities of geography teachers, which should be prepared for during in-service training, taking into account the needs of the present day (Danilina, 2001). In the context of the above-mentioned studies we consider the notion of tourism and local lore activities as a process of acquiring a permanent cognitive interest of future geography teachers, the characteristics of their native region, a set of knowledge for performing practical local lore tasks (analysis of sources of tourism and local lore information, mapping the region under study, presentation of collected local lore material, report preparation, formation of an idea of the nature, developing a route, mastering various tasks and tasks). In order to better understand the significance of tourism and local lore activities, it is necessary first of all to know the components of tourism and local lore activities. Tourist activities are seen not only as an activity, but also as one of the conditions for teaching geography on real-life material (Tursynova, et al., 2019).

This is first and foremost their knowledge of the physiological characteristics of children: their importance for their development, growth and mental abilities, physical exercise, tempering; the ability to behave in nature, to take care of it (Mazbayev, et al., 2020). The extracurricular activities in tourism and local lore are very varied in terms of content, form of organisation and methods of implementation. Honcharuk et al (2021) consider geography, tourism or local lore clubs as the main type of extracurricular activities in schools. The circle is an amateur association of students. The cognitive meaning of the work of the club is that it expands and deepens the children's knowledge, develops their interest in science, technology, art, nature, environmental protection and events enriches students with a range of practical skills and abilities, and develops the students' abilities and creativity (Dávid, 2009; Duda-Gromada 2010, Dávid, et al., 2012a; Dávid, et al., 2012b). Circle brings together students with a common interest and work according to a certain plan. Unlike other types of extracurricular activities, the clubs consist mainly of a system of classes with a permanent body of students. Circle activities are carried out using different methods (Golovanov, et al., 2008). All extracurricular activities in tourism and local lore contribute to the development of children's thinking, team building, and are aimed at expanding and refining their knowledge and skills. The choice of the particular form depends on the content of the material, general development of children, teacher's interests, local conditions and school possibilities (Maslova, et al., 2020).

MATERIALS AND METHODS

Expressing geography teachers' motivation to learn, their actions are not only a condition, but also a means of achieving the goal of tourism and local lore (Coll-Ramis, et al., 2023). The school's self-development is a prerequisite for tourism and local lore activities. It is an independent work of the pupil to shape and develop his or her spiritual, mental, physical and other abilities and aptitudes (Gadzhiev, 2021). In the present study we set a goal to investigate this issue based on the lack of reliable information on effectiveness of organization and implementation of tourist and local lore activities of geography teachers in the Republic of Kazakhstan (for 17 regions and 3 cities of national importance). In order to determine the relevance of the problem, the literature published in the journals indexed in Scopus and WOS were analysed (Golubchikov, 2015).

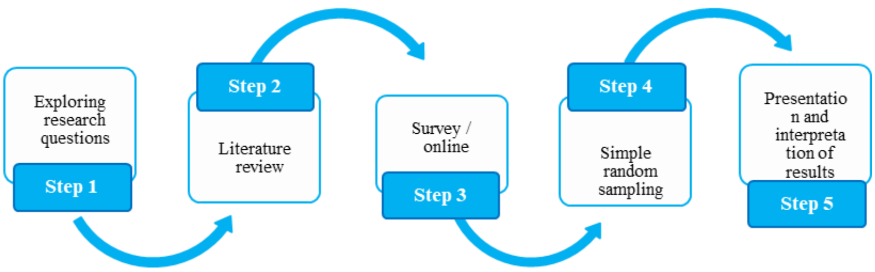

Figure 2. Research methodology flowchart, (Source: compiled by the authors)

Based on the results of the analysis, questionnaires consisting of 16 questions were developed. There were 73 voluntary respondents for Kazakhstan (R – geography teacher) who answered questions related to tourism and local lore activities in the survey. Responsible for survey questions https://docs.google.com we got it with the help of. The questionnaire was disseminated widely across Kazakhstan through announcements on specific secondary school geography teacher forums using Facebook and WhatsApp social media. The survey was conducted between February and March 2023 and analysed for all responses received between 20 and 25 March. The analysis was conducted based on the coding of the respondents (P1 to P73). This phase of the survey was chosen deliberately because before the summer holidays, tourism and local lore activities are gaining momentum in schools, and teachers will be as prepared as possible for tourism and local lore questions. Thus, the teachers from Almaty City (15.1%), Zhambyl region (15.1%), Turkestan region (12.3%) and East Kazakhstan region (8.2%) responded to the questions aimed at determination of the efficiency of organization and implementation of tourist and local lore activities of geography teachers. The questionnaire was taken only from Kazakh language geography teachers and aimed to identify the motivation of the Kazakh environment for tourism and local lore activities.

RESULTS AND DISCUSSION

A total of 73 respondents (geography teachers) from 3 cities of Kazakhstan and 16 regions volunteered to participate and answered the research questions of geography teachers in Kazakhstan aimed at studying the effectiveness of tourist and local lore activities. To the first question of the questionnaire "In which city or region do you live?", 4.1% of respondents from Astana city, 15.1% from Almaty city, 4.1% from Shymkent city and 5.5% from Almaty region, 12.3% from Turkestan region, 8.2% from East Kazakhstan region, 6.2% from Pavlodar region (Figure 3).

Nevertheless, the limited possibility of distributing the survey questions did not cease to restrain its barrier. Teachers from Mangistau, Karaganda, Kostanay, West Kazakhstan and Atyrau regions had only 1 respondent per region. And from Abay region no one participated. However, the greatest contribution to the organization of tourism and local history activities was made by teachers of the regions with the greatest number or popularity of tourist sites (Almaty city, Turkestan region, Zhambyl region, East Kazakhstan region, etc.), who demonstrated their capabilities.

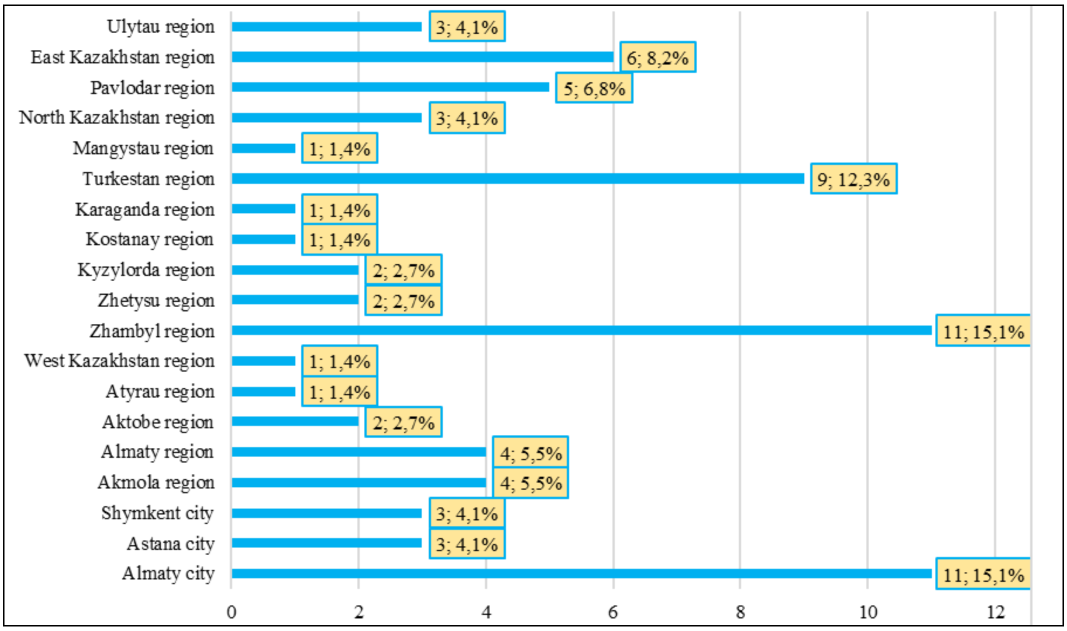

Figure 3. Cities and regions participating in the survey, number of respondents and percentage, % (Source: compiled by the authors)

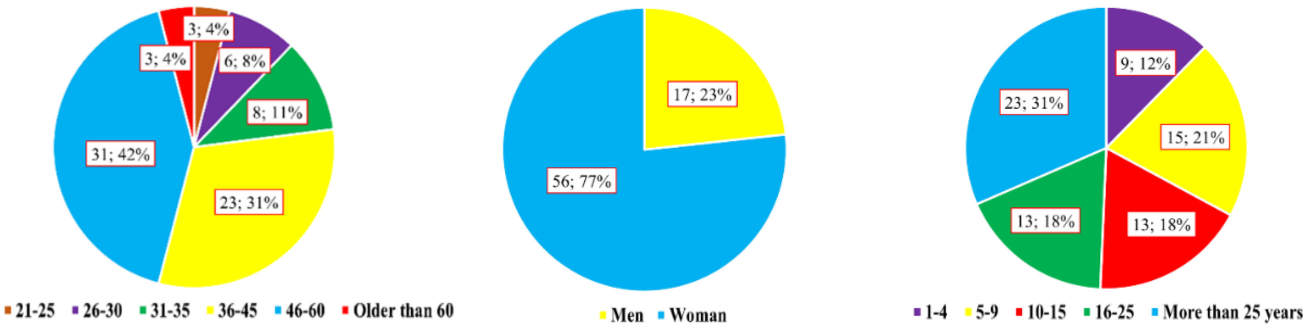

Figure 4. Age (a), Gender (b), Length of service as a geography teacher (c). Profile of respondents, % (Source: compiled by the authors)

For the second question of the survey the "age" of respondents was as follows: the share of teachers under 25 years old is 5%, 26-30 years old is 10%, 31-35 years old is 15%, 36-45 years old is 20%, 45-60 years old is 25% and 60 and over is 12% (Figure 4a). Judging from the responses, we noticed that many geography teachers are older. Even teachers of retirement age are not missing. Conversely, the share of young teachers under 25 years of age was very low, which can probably be explained by the low salaries of geography teachers. Respondents also answered the third question - what is your "gender" - 81.5% "female" and 18.5% "male" - teachers revealed that male teachers do not stay in schools because of low salaries or the number of hours allocated per year (Figure 4b). Respondents answered the fourth question as follows: "How many years of teaching geography?" when asked, 10.9% had 1-4 years, 23.6% had 5-9 years, 16.4% had 10-15 years, 16.4% had 16-25 years and 32.7% of respondents reported more than 25 years of experience (Figure 4c).

The fifth question, "How do you understand the concept of tourist and local lore activities?" to the question, the respondents answered as follows: R3: research on their regions, R4: recognition of the region, study, knowledge of recreational resources, definition of tourism development possibilities, R5: familiarity with the nature of their region, R7: familiarity with historical places of Kazakhstan cities, R12: journey around their native land, R13: acquaintance with nature of native land knowledge of tourist zones, R14: activities for development of tourism in native land, R15: acquaintance with beautiful works of nature of the country, disclosure of significance of recreational places for tourism, consideration of ways of tourism development, R16: conducting research work on the development of touri sm in their native land, R17: visiting the tourist and recreational centres of their region and making hikes, R19: familiarity with the nature of their native land, R20: developing students' feelings towards their native land with the compilation of touris t routes to their native land, R22: activities for the development of tourism activities, R23: studying the tourism potential of the region, R24: geographic location of their native land, R27: enhancing the young generation's cognitive knowledge of nature, history and culture, comprehensively characterizing the formation and development of their native land, the concept of nurturing respect and reverence for country values, R30: promotion of tourism in the native land, R33: acquaintance with the history of historical, cultural and landmarks of their native region, R36: learning and knowing our region with a field trip, R37: studying the history of the region, the sphere of tourism, R40: excursions and research works on the study of the region, R41: knowledge of the tourist objects of the region, R47: publicity of natural and cultural objects in the area through learning, R48: acquaintance of schoolchildren with remarkable places and history of the region through travel, R51: familiarity with the history of the region, R54: local lore-knowledge of nature of the native region observance of safety rules when going out into the nature, R55: visiting historical and cultural sites in their country, R56: knowledge of the geographical position, physiographical specificity, natural resources and toponomy, history of their country, R57: knowledge contributes to the knowledge of their country, awakening patriotic feelings and R64: knowledge of the history of the whole region of our republic, travel.

To the sixth question "Do you support that extracurricular tourist and local lore work should be conducted by geography teachers?" 72.6% of respondents answered fully support, 23.3% - do not mind, 4.1% - do not support, there are other teachers. To the seventh question, "What kinds of tourism and local lore activities are used in the school where you work?", the answers are shown in Figure 5. In general, to the seventh question, 19.2% (14) respondents stated that they have tourism and local lore clubs; 4.1% (3) respondent reported that the school where they work will organize tourism competitions; 4.1% (3) respondent will have tourism and local lore gatherings at school; 4.1% (3) respondent will engage in archaeological and ethnographic expeditions; 8.2% (6) respondents say that the school organises hiking trips; 37% (27) respondents attend excursions; 19.2% (14) respondents attend local lore competitions and quizzes; 8.2% respondents say that the school has intellectual clubs, while 37% (27) respondents answered that they are difficult to answer. Only the answer option "tourist camp" no one indicated (0%). Also, the eighth question "What equipment does the school where you work need for tourism and local lore activities?" was answered below (Figure 6).

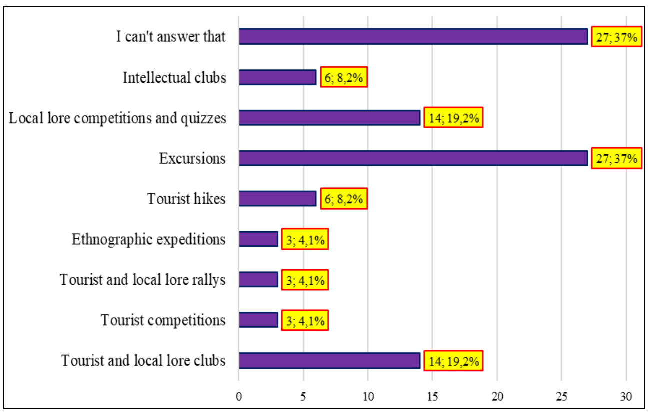

Figure 5. Tourist and local lore activities at school types, number and percentage, % (Source: compiled by the authors)

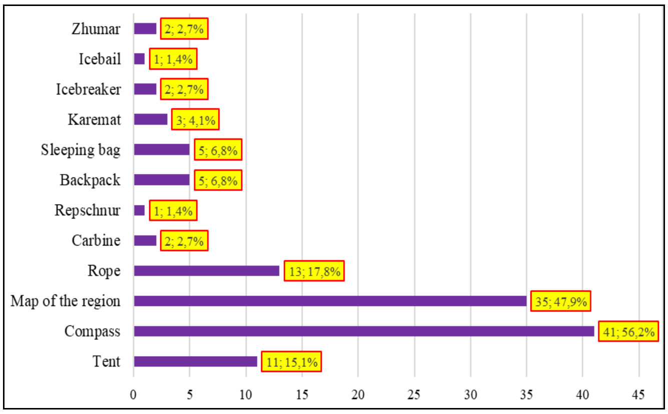

Figure 6. Equipment, quantity and percentage needed for tourism and local lore activities at school, % (Source: compiled by the authors)

To the ninth question "Have you personally (at your place of residence) organized extracurricular tourist or local lore activities (excursions, trips, hikes, local lore events, etc.) for pupils?" 52.1% answered Yes and 47.9% answered No. Judging from the answer, 47.9% of geography teachers are those who have not engaged in tourist or local lore activities. And to the tenth question, "What were the obstacles in the process of organising, planning and managing tourism activities?", the respondents answered as follows: R1: there are no obstacles, R3: transport is needed to organize tourism and local lore activities, R10: lack of necessary funds, R6: lack of permission from the administration, R11: bureaucracy, R16: necessary things and funds are needed, R17: what hinders the situation is big, I only did 1 hour of elective classes for a year, does not give geographers hours for local lore, R18: the tourism sector is not developed, so making a plan is problematic, R22: did not plan. R22: only in Akmeshit we took pupils with their parents, R22: 1) itinerary, 2) security for tourist group, 3) fixation of travel result (in city tourism department), R30: lack of transport provision for school. Lack of equipment, R35: funds from teacher's own pocket: compass and map, etc., R36: did research work in my area and defended about 10 research projects. Did not see any support. And removing all obstacles and finances came out of my pocket, R39: in a small school the financial side suffers, it is very difficult to organize and take students out.

In answer to the eleventh question "what equipment can be used (in the course of hiking and local lore activities)?", it was found that 45.6% of respondents could use the creation of a tent, 80.9% could use a compass, 69.1% a map of the region, which is understandable. And the methods of rope fixing required for real hiking and local lore activities (minimum: knowledge of 7 different types of rope fixing in 1 minute) 20.6% of respondents, carabiner 5.9%, repsleeping rope 1.5%, sleeping bag 29.4%, karemat 5.9%, and it turned out that only respondents can use ice-breaker 2.9%. The saddest thing is that there was no respondent who relied on the survey results and knew ice-bike and jumar.

Question twelve of the questionnaire "What tourist sites have you visited in the city or region where you live? If possible, write in full!" - Respondents mentioned the following tourist and local lore objects in Kazakhstan: R3: Lake Issyk and Ayuly Falls, R4: Furmanov Peak, Kolsay Lakes, R6: Akyrtas, Merke, R7: Monument of Kozhabergen zhyrau, R11: visited Kambash village, R13: Near Merke Radon sanatorium, R14: went to Burabay mountain, visited Bayanaul, R15: museums, Turkestan, Otyrar, Ukash ata, Kazygurt mountain, Sayram-Ugam national park, Kaskasu, Nurtau, etc. R19: Akbaur, Zhidebai, Katon-Karagai, R21: Mausoleum of Khoja Ahmed Yassawi, R23: Almaty city museums, city attractions, R24: We visited the local lore museum of our district, R26: Khoja Shayan gorge, R27: Berel necropolis, Katon-Karagai national natural park, R29: Mausoleum of Arystan Baba and Yassawi, R30: Atyrau oblast, Zhyloi district, Akmeshit and to museum, R31: Abay museum, Akbaur, Bukhtarma, difficult Kerish, R32: Big and Small Almaty River Basin, Tereshkova Pass, Kok-Zhailau Dome, Yussai, Furmanov, Butakovka, Turkestan, Shymkent, Almaty, Nomad City, Kolsay, Charyn Gorge and Altynmel National Parks, R36: Tamgaly Tas, Zhambyl Museum, MUZ. Suyunbai Aronulu museum, R39: Alasha khan, Zhoshy khan, R40: Kokzhailau, R41: Ural river, R42: Tamshaly, Sayram, Senek village, R45: Zhusup Zhulik mausoleum, R47: Charyn gorge, Turgen waterfall, Issyk str: Botai culture complex, R56: Altynemel National park, R1, 5, 10, 20, 59: went nowhere and R61: confirmed visits to local museums.

To the thirteenth question "how many times in the academic year 2022-2023 did you visit popular tourist and local lore sites in your city or region?" to the question"17 teachers answered that 1-2 times, and 8 teachers 3-4 times, 1 teacher 5-6 times, 1 teacher 7 and more and 41 teachers did not go at all (Figure 7a). Fourteenth, "do you know the safety rules for organizing and conducting extra-curricular tourism and local history activities?" the answer to the question was low (Figure 7b).

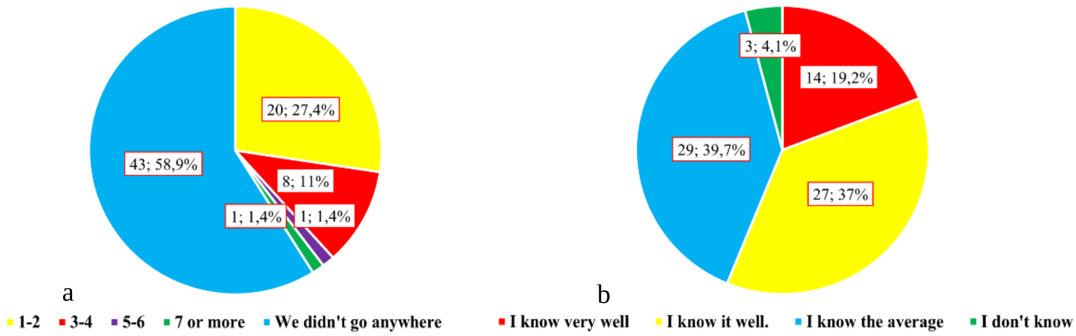

Figure 7. a) The number of student visits to tourism and local lore sites in the school year 2022-2023, b) Level of respondents' knowledge of safety rules for the organisation and conduct of tourism and local lore activities (Source: compiled by the authors)

To the fifteenth question "Do you know the route (Way) of visiting popular tourist and local lore sites in the city or region where you live? Are you confident that you can accompany students to these sites?" to the question: Yes, I know, I am confident, there were 35 (47.9%) respondents, and Yes, I know, but I am a little unsure - 15 (20.5%). Respondents who answered: Yes, I know, I am afraid of getting lost, I cannot take students - 4 (5,5%), No, I cannot take - 8 (11%), No, I do not know, if there is a need, I can go by using 2GIS or Google Maps - 15 (20,5%).

The last sixteenth question of the questionnaire asked "What skills do you think can be developed or improved in students through tourism and local lore activities?" the answers of the respondents to the question were as follows: P1: cognitive, P2: interest, love for the subject, for the land, P3: love for the native land, P5: teaching responsibility, P6: promotion of the history of the native land, P7: demanding, P8: study of nature, environment, P11: knows the native land well, R14: respectful attitude to the nature of the native land, the ability to use the knowledge obtained at school in life, R16: nationality, love of nature, the ability to take care of, etc, P17: research skills are formed, P18: critical thinking, P19: calmness, cognition, responsibility volunteering, P20: love for Motherland, patriotic education, P21: Faith, P22: improves functional literacy, P27: grows love for native land, gets to know our Earth, learns hard work, grows patriotism, joins togetherness, teaches brotherhood, R30: gets to know nature, R34: think will acquire love for native land, courage, organisation, patience and environmental skills, R35: native land is well kept in memory with vision, R38: visual memory, outlook widens critical thinking develops, R39: responsibility + co gnition + research skills, R42: algorithm during the journey, safety knowledge, responsibility for one's land, sense of patriotism, R50: patriotism, nationality, R57: functional literacy, R58: environmental protection, fostering love for the native land, R 59 the ability to independently replenish the need for nature, discern the horizon, rescue and first aid skills are formed, R60:patriotic feeling, self-improvement, respect for nature and the environment, etc. etc., R61: teamwork, knowledge building, R68: instils in the pupils confidence, full knowledge of their own region.If we discuss the results of questionnaires for geography teachers, aimed at studying the effectiveness of the organisation of tourism and local lore activities, 73 voluntary respondents from 3 cities and 16 oblasts of the Republic of Kazakhstan gave their answers. 15.1% of respondents were teachers in Almaty city, 15.1% in Zhambyl region, 12.3% in Turkestan region and 8.2% in East Kazakhstan region. Although there are obstacles to the dissemination of the survey questions, a large part of the republic is covered. However, of the teachers in Mangistau, Karaganda, Atyrau, West Kazakhstan and Kostanay regions only 1 respondent from each region participated, and unfortunately no teacher from Abay region attended.

However, teachers in Almaty city, Turkestan region and Zhambyl region contributed greatly to the organisation of tourism and local lore activities and were able to demonstrate their capabilities. Of the respondents, the proportion of teachers under 25 years of age was only 5%, making it the lowest proportion. Teachers aged between 45 and 60 accounted for 25 per cent, reflecting the relatively high age of geography teachers across the country. Aldybayev et al. (2021) and Kozbagarova et al. (2022) warned of this, but the problem is not solved in practice.

Also in the survey, when respondents were asked about their geography teaching experience, 31% of respondents answered that they had been working more than 25 years. It was also found that there is a teacher who knows the concept of tourism and local lore activities (P27) as field practice. 37% of respondents to the question: "What kind of tourism and local lore activities are used in the school where you work?" found it difficult to answer, indicating that very few or no tourism and local lore activities are conducted in schools. Issakov et al. (2022b) who conducted research in this direction, arguing that subjects forming tourism and local lore competences of future geography teachers are not taught, determined that the use of mobile GIS applications will be effective in organizing tourism and local lore activities in the future. Questionnaire "what were the obstacles in the process of organising, planning and managing tourism and local history activities?" most respondents identified the main obstacle as lack of road to tourism and local lore sites and poor quality of existing road, lack of organisational transport facilities, lack of financial support from school and a large number of problems with documentation or lack of permission from the district education department. In this direction, domestic researchers Aktymbayeva et al. (2020), Aktymbayeva A. et al. (2020), Baiburiev et al. (2018), Allayarov et al. (2018) and Mukhambetov et al. (2014) despite the fact that the country has proposed solutions to improve tourism infrastructure, it is not taken into account by authorities. The application of local lore activities also contributes to regional competitiveness and maintain cultural heritages (Dávid, et al. 2003; Dávid, 2004; Dávid, et al., 2007; Herman, et al., 2020).

In this regard, in this study, the respondents ' knowledge of the types of equipment used in the course of tourist and local history activities: 81.7%-compass, 69%-map of the region, 45.1%-tent sewing and 22.5% - rope tying - increases the motivation to organize tourist and local lore activities and allows them to organize an effective tour, trip or hike. To do this, the teacher must be well versed in the technique and tactics of tourist activities (Batyrbekov, et al., 2022; Bujdosó and Dávid, 2013). However, the fact that 47.9% of respondents had not organised extra-curricular tourism or local lore activities for students once again highlighted the importance of the topic of our study. This is due to the fact that in school geography teaching there are no topics related to the organisation of tourism and local lore activities, explanation of the current state of the small tourism business and the development of smart tourism, and the programme has not covered this issue at all (Issakov, et. al., 2023). Most of the curricula developed by the regional tourism and area studies centres do not contain full content. Therefore, we can say that the quality and effectiveness of local lore education activities in secondary schools is extremely low. Although the school geography curriculum had the opportunity to adapt some topics in a tourism and local lore context, 58.9% of respondents in the academic year 2022- 2023 did not visit popular tourism and local lore sites or organise local lore activities. The reason was the lack of funds for students and exaggerated demands of the District Education Department. It was also noted that school administration does not consider funds for organization of tourist and local history activities of geography teachers in the Republic. Respondents were asked: "Have you personally organized excursions, trips, trekking, local lore activities for pupils? while 52.1% responded Yes, 27.4% of respondents visited tourist and local lore objects only 1-2 times in the academic year 2022- 2023. This is a very low indicator, so there is a need to systematise the programmes for the organisation and implementation of tourism and local lore activities by region and develop a common methodology by city and region. This is due to the fact that it promotes the attractions of the country and increases the recognition of students. The development of school tourism and local lore is now an important social order for modern society (Vukolov and Nazarchuk, 1997). The role of a teacher in the formation of a socially active modern personality through tourism and local lore activities cannot be underestimated. Modern pedagogical science and practice have proved that teacher training in tourism and local lore is a highly effective tool for the education and upbringing of the younger generation. Teacher training in tourism and regional studies for higher education institutions is not only a personnel problem, but also an integral system, a way of life, providing knowledge, skills and ideology in the education and upbringing of the future generation (Mazbayev, et al., 2006). This is very important for preserving the identity of our native land, preventing the falsification of history, and preserving the shared history of our homeland.

CONCLUSIONS

Thus, as a result of the analysis of the results of the study aimed at determining the effectiveness of organization and implementation of tourist and local lore activities of geography teachers in Kazakhstan, the knowledge and skills of today's geography teachers about tourism and local lore activities are not challenged, and it is very sad that schools are not methodologically, materially and financially prepared for these activities. Therefore, we make the following conclusions to improve the effectiveness of organization and implementation of extracurricular tourism and local lore activities of geography teachers in the Republic of Kazakhstan:

1. The geographical education system's tourism and local lore activities are a leading area for shaping the local image of the region. Therefore, extracurricular tourism and local lore activities broaden the moral and aesthetic outlook of students.

2. Showing tourism and local lore sites to students outside school hours will help them learn about the history of the country, the natural features of the region, ethnography and archaeology.

3. In order to organise and carry out tourism and local lore activities, geography teachers should know tourism techniques and tactics, the basics of excursions, the principles of topography and safety. For this purpose, higher education institutions training geography teachers should introduce special subjects providing the above competencies into the teaching process.

4. Throughout Kazakhstan, there is a need to provide schools with the necessary equipment for hiking and local lore ac**tivities. This is due to the fact that many respondents in the above survey know that they only use a compass and a map** of the area, in addition, there are no hiking tools or equipment available.

5. Training of geography teachers in tourism and local lore activities and professional development in this direction. Higher education institutions should develop a special methodology and organize courses. In fact, in general 47.9% of respondents did not organise tourism and local lore activities.

6. Geography teachers should be allocated funds to organise extracurricular tourism or local lore activities, eliminating the need for approval from the district education department. Also, the planning, organisation and management of tourism or local lore activities should be the responsibility of the geography teacher.

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EVALUATION OF CITIZENS' SATISFACTION WITH THE QUALITY OF PUBLIC ADMINISTRATIVE SERVICES IN THE MEKONG DELTA, VIETNAM

Nguyen Chi HAI[*]
An Giang University, Vietnam National University Ho Chi Minh City, An Giang Province, Vietnam, e-mail: nchai@agu.edu.vn

Vu Thi Phuong LE
Vinh University, College of Social Sciences and Humanities, Faculty of
Politics and Journalism, Nghe An Province, Vietnam, e-mail: levtp@vinhuni.edu.vn

Nguyen Thai SON
Vinh University, College of Pedagogy, Faculty of Political
Education, Nghe An Province, Vietnam, e-mail: ntsdhv@gmail.com

Phan Van TUAN
Vinh University, College of Social Sciences and Humanities, Faculty of
Politics and Journalism, Nghe An Province, Vietnam, e-mail: phanvantuan94@yahoo.com

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Abstract: Citizen satisfaction is one of the essential factors reflecting the quality of public administrative services provided by state administrative agencies. The study aims to assess citizens' satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. Research data were collected from survey results using questionnaires from 792 survey samples in the Mekong Delta, Vietnam. Research results have shown that citizens are satisfied with the quality of public administrative services in the Mekong Delta, Vietnam. At the same time, there are six factors affecting citizens' satisfaction with the quality of public administrative services, including (1) Reliability; (2) Service capacity of staff; (3) Service attitude of staff; (4) The service level of staff; (5) Infrastructure; (6) Administrative procedures. Research results show no difference in citizen satisfaction in gender, age and education groups. Besides, the survey area group has a difference in citizen satisfaction. The research results have theoretical and practical significance for public administration in Vietnam. From the research results, several contents are discussed and proposed to improve citizens' satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam.

Key words: satisfaction, citizen, public administrative service quality, Mekong River Delta, Vietnam

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INTRODUCTION

Public administrative service is a type of service associated with the state management function to meet the requirements of the people (Lapuente and Van de Walle, 2020). General administrative services are designed to meet the community's needs, improve the quality of life, and ensure the rights and obligations of citizens. At the same time, the public administrative service clarifies the transparency, accountability and efficiency in the operation of public administrative agencies (Lakovic, 2021). These services can be provided in person at public administration agencies or online (Reddick et al., 2022). General administrative services include licensing, certificates, registration papers, notarization, visas, and civil status (Moteki, 2022). Characteristics of Vietnam's public administrative services include, firstly, providing general administrative services is always associated with legal authority and the activities of state administrative agencies in the country (Pribadi and Kim, 2022). The issuance of licenses; birth certificates; notarized; administrative handling and sanctioning; administrative inspection. State administrative agencies can only perform this type of service. The second serves the management activities of the State (Quang, 2022). The public administrative service does not belong to the state management function, but this activity is intended to serve the management function (Nor et al., 2022). Third, public administrative services are non-profit activities. Fourth, all citizens have equal rights in accessing and using public administrative services as subjects the State serves (Ngo et al., 2019).

Over the years, the Government of Vietnam has stepped up administrative reform, improving the state apparatus's management's effectiveness and efficiency. The Vietnamese government has focused on renewing and improving the quality of public administrative services, considering it a critical stage in implementing the state administrative reform program towards modernity and professionalism. Many ministries, branches, and localities have applied electronic and information technology means to improve the quality of public services (Rey-Moreno et al., 2018). Consider eliminating unnecessary administrative procedures and permits that make it difficult for citizens and businesses to access public

[*] Corresponding author

administrative services, shortening service delivery time (Liu et al., 2020). In particular, the downsizing of payrolls and the merger of administrative units in a lean direction. People and businesses are facilitated in matters that need to be resolved with state agencies (Na et al., 2022). Besides the achieved results, public administrative services in Vietnam still have many limitations and weaknesses. General administrative services need to be more efficient. Necessary information about managerial procedures and the process of performing public administrative services has yet to be made public and transparent (Park and Blenkinsopp, 2011). Legal documents regulating the administrative functions of state agencies from central to local levels still need to be explained (Miyeon et al., 2021). The assignment and decentralization in the provision of public services need to be clarified. Inequality and discrimination in accessing public administrative services are still quite common. The professional capacity of civil servants providing services is still weak, and the civil service ethics of some civil servants directly dealing with public administrative services are not experienced (Zhang et al., 2022).

To improve the quality of public administrative services, the State should pay attention to solutions to improve efficiency (Yuguo and Hindy, 2018). The general administrative services are recognized as the responsibility of the State to serve the community, which is an expression of the State's role towards organizations and citizens (Phuong et al., 2022). Public administration service reform is becoming an important content in reforming the operation of the state apparatus in Vietnam and renovating public administrative services to improve the efficiency and effectiveness of the State's operations to meet citizens' needs better (Noda, 2019). They are assessing citizens' satisfaction with the quality of public administrative services for the government to develop a strategy to improve them (Alawneh et al., 2013). The improvement and enhancement of the quality of public administrative services will always be carried out. It will enhance citizens' confidence in the State. The study aims to assess citizens' satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. In addition, several discussions have suggested governance implications to improve the quality of public administrative services to increase citizen satisfaction.

LITERATURE REVIEW

1. Public administration and public administrative services

1.1. Public administration

Public administration is the activities of the State and State agencies. It carries state power and uses State power to manage to serve the common interests or legitimate private interests of citizens. Public administration can be understood as a form of state activity that does not belong to legislative or judicial actions (Yu, 2021). Public administration is promulgating administrative documents and performing administrative acts for the common good and purpose (Gaurav and Ram, 2020). Public administration is not for profit and is served by public authorities at all levels and voluntary organizations not part of the state apparatus but established and operated by the law (Wirtz and Kurtz, 2016).

Therefore, Public Administration is defined as the activity of the state; it has state power. Public administration uses state power to manage society to serve the common interests of everyone or the legitimate privacy interests of citizens (Gregg, 2015). Public administration appeared with the birth of the state. It is the management of the state's public affairs, ensuring balance, correctness, openness and citizen participation (Suzuki and Demircioglu, 2021).

1.2. Public administrative services

Public administrative service is a type of service associated with the state management function to meet the requirements of citizens. Therefore, the entity providing public administrative services is established by the State authorized to offer public administrative services. Public administrative service is a service to meet the general needs of society; it comes from the requirements of state management to perform the service function of the State (Denhardt and Denhardt, 2015). Public administrative service is a type of service it is provided by state administrative agencies or by organizations that are not part of state administrative agencies authorized by the State.

Public administrative services in this study are understood as services provided by state administrative agencies to individuals and organizations. General administrative services are associated with the authority of state administrative agencies (Tran and Dollery, 2023). It fulfils organizations' and citizens' legal rights and obligations, such as issuing licenses, birth certificates, notarization, and civil status (Wang and Ma, 2022). Organizations other than state administrative agencies cannot authorize these activities. The people's demand for public administrative services comes from the mandatory regulations of the State. The State obliges and encourages everyone to comply with these regulations to ensure social order and safety and perform the state management function in social life. Public administrative services to serve state management activities. General administrative services themselves do not belong to the state management function, but they are activities to help the state management function (Bland et al., 2021). Therefore, in legal and scientific research, problems have been raised around the separation of administrative procedures and management functions in the operation of state administrative agencies. Public administrative services are non-profit activities that do not directly benefit from the revenue. All citizens and organizations have equal rights in receiving and using public administrative services (Andrews and Van de Walle, 2013). Citizens are the subjects to be served; the State is responsible and obligated to do citizens on the principle of fairness, ensuring social management activities' stability, equality and effectiveness (Hai and Ngan, 2022).

2. Service quality and customer satisfaction with service quality

2.1. Service quality

Service quality is defined in many ways depending on the object of study and the research environment. Service quality is the degree to which a service meets the needs and expectations of customers. *Service quality* is a service that meets customers' expectations and satisfies their needs. According to Parasuraman et al. (1988), service quality is the gap between customer expectations and their perception when using the service (Parasuraman et al., 1988). For a long time, many researchers have tried to define and measure service quality. Service quality must be assessed on the service delivery process and service results (Hai et al., 2023). Parasuraman et al. (1988) have developed a five-component service quality model: the SERVQUAL model, including Reliability; Response; Service capabilities; Empathetic; Tangibility.

2.2. Satisfaction

Satisfaction is the degree to which a person's sensory state results from comparing the perception of a product with the person's expectations. According to Zeithaml and Bitner (2000), customer satisfaction is the customer's evaluation of a product or service in terms of whether the product or service meets needs and expectations (Zeithaml and Bitner, 2000).

In public administration, citizens' satisfaction with this service is the satisfaction that what it provides can meet their expectations above or below. Service quality, the level of citizen satisfaction required by administrative agencies, is to shorten the gap between citizens' expectations and the actual ability of administrative agencies to meet them (Hai, 2022). In addition, people's satisfaction is subjective, not quantifiable, so the measurement will be inaccurate, requiring sampling and statistical analysis (Alemán et al., 2018).

2.3. The relationship between satisfaction and service quality

Service quality and satisfaction, although two different concepts are closely related in service research (Parasuraman et al., 1988). Zeithaml and Bitner (2000) argue that customer satisfaction is affected by many factors, including product quality, service quality, price, situational factors, and personal characteristics (Zeithaml and Bitner, 2000). Service quality is related to service delivery, and satisfaction can only be assessed after using the service. Thus, service quality is the cause of satisfaction and satisfaction. Service quality and customer satisfaction are related; high-quality service increases customer satisfaction (Badri et al., 2015). Measuring service quality should consider customer satisfaction (Cronin and Taylor, 1992). Research by Cronin and Taylor (1992) shows that service quality leads to customer satisfaction. Customer satisfaction has a more substantial impact on purchase intention than service quality.

This implies that managers should focus on customer satisfaction more than service quality. Cronin and Taylor (1992) proposed the SERVPERF model, a successor to the SERVQUAL model, to study service quality about satisfaction. In this study, the author will use the SERVPERF model to measure people's satisfaction expressed through their perceived value for the quality of public administrative services.

THEORETICAL FRAMEWORK AND RESEARCH STRUCTURE

1. Theoretical framework

Currently, many studies are using the SERVQUAL and SERVPERF models to measure service quality. Parasuraman et al. have also tested the SERVQUAL scale in many different services, and the results are similar when recording the impact of the components in the SERVQUAL scale on customer satisfaction. According to Buttle, the SERVQUAL scale is one of the most reliable and widely used scales in research on service quality. To overcome the difficulty in measuring the customer's expected value before using the service, the SERVPERF scale shows the same results as the SERVQUAL scale.

In the public administration sector, measuring citizen satisfaction with the services provided by the government system at all levels is one of the essential bases. It helps the state apparatus perform better and better its functions, to better meet the needs of the people. In the public sector, people are considered customers; they are people who directly use services provided by state agencies or organizations authorized by the state. Some studies show that the SERVPERF scale factors significantly impact people's satisfaction when using public sector services.

Many studies have shown citizen satisfaction with the quality of public administrative services. According to Hyun (2006), in the study "Measuring citizen satisfaction with contracted-out public service quality: An application of servqual measures", according to the author, the increasing use of private contractors to provide public services requires public organizations to develop and use tools to measure contractor performance. The study was based on the SERVQUAL model that classifies service quality into five components: intangibles, reliability, responsiveness, assurance and empathy (Hyun, 2006). Structural equation modelling (SEM) was used to test the measurement accuracy of the five service quality components and the predictive power of each for the overall service quality. The results confirm the applicability of SERVQUAL to measure the service quality of public services in Korea. According to Mai et al. (2016) in the study "Citizens' Satisfaction with public administrative services at the grassroots level case study of Tay Ho District". This study systematically investigates the distinctive features of public administrative services and their impact on people's satisfaction with public administrative services. The measurement scales in this study are adapted from the SERVPERF model with seven components of public administrative services, including (1) Reliability, (2) Competency of civil servants, (3) Service attitude of public servants, (4) Empathy, (5) Facilities, (6) Implementation process and (7) Time and cost (Mai et al., 2016). The findings of the study help in understanding the relationship between citizens' perceptions of components of public administrative services and the citizens' satisfaction with the public administrative services.

In the study "People's Satisfaction with public service quality when exercising land rights in Cao Lanh City, Dong Thap Province" by Ngo et al. (2019). The study uses the exploratory factor analysis method to determine the factors affecting the satisfaction of land users with the quality of public administrative services on land in Cao Lanh City, Dong Thap Province. The results show that three factors affect people's satisfaction with the quality of public administrative services on the ground, including civil servants, procedures and trust. In particular, the factor of civil servants has a significant influence on people's satisfaction (Ngo et al., 2019). According to Dung (2021), in the study "How do the quality dimensions of public administration services affect citizen satisfaction in Chau Phu District, An Giang

Province?". The author believes customer satisfaction is essential to service providers' success. The study aims to examine the quality of services provided at the Receiving and Outcomes Department and identify the service quality factors that influence people's satisfaction. The results show that five elements of the SERVPERF scale are valid to measure service quality in Chau Phu district; There are five factors of service quality, including Competence, Facilities, Trust, Service Attitude, and Empathy, all of which have a strong influence and increase satisfaction (Dung, 2021).

In the study "Factors affecting people's Satisfaction with the Quality of public administrative services at the Office of the People's Committee of Bao Loc City, Lam Dong Province" by Xuan (2021). The author believes that administrative reform and improving the quality of public administrative services are essential policies of the Government to build a democratic, clean, robust, modern and integrated administration. Quantitative research methods were used to evaluate factors affecting people's satisfaction with the quality of public administrative services at the Office of the People's Committee of Bao Loc City, Lam Dong Province. Research results show that there are six factors affecting people's satisfaction with the quality of public administrative services, including (1) service attitude; (2) administrative procedures; (3) publicity and transparency; (4) reliability; (5) facilities; and (6) service capacity (Xuan, 2021).

According to Manh et al. (2023) in the study "Establishing satisfaction objectives for public administrative services at the people's committee of Ninh Hoa Town, Khanh Hoa Province to 2025". The author believes that administrative reform must come from the interests of people and organizations; choose citizen satisfaction to evaluate state administrative agencies' service quality. The scale offers five factors, including "Access to services", "Administrative Procedures", "Civil servants directly handle work", "Service Results", and "Receiving and handling comments, reflections and recommendations", and 24 observed variables. The findings from the study have provided information to implement solutions to improve administrative services for people and organizations (Manh et al., 2023). Local governments view improving executive service satisfaction as central to local administrative reform.

2. Hypotheses

Hypothesis on the relationship between public administrative service quality and citizen satisfaction in the Mekong Delta, Vietnam. The author formulated the following research hypotheses:

Hypothesis H1: Citizens' perception of the trustworthiness of public administrative services has a positive relationship with citizen satisfaction. This means the more citizens trust the public executive service, the higher their satisfaction.

Hypothesis H2: Citizens' perception of staff's service capacity positively correlates with people's satisfaction. This means the more citizens appreciate the service capacity of public administrative staff, the higher the citizen's satisfaction with it.

Hypothesis H3: Citizens' perception of the service attitude of employees has a positive relationship with citizen satisfaction. This means the more citizens rate the employee's service attitude as better, the higher their satisfaction.

Hypothesis H4: Citizens' perception of Empathy has a positive relationship with citizen satisfaction. This means the higher the citizen perceived care from the administrative staff, the higher the citizen's satisfaction with it.

Hypothesis H5: Citizens' perception of facilities positively correlates with citizen satisfaction. This means the better the condition of the facilities at the service provider, the higher the citizen's satisfaction with the service.

Hypothesis H6: Citizens' perception of public administrative service procedures positively correlates with citizen satisfaction. This means citizens feel that the faster and more straightforward the process is, the higher the citizen's satisfaction with the service.

3. Research structure

Based on inheriting the SERVPERF service quality measurement model. We propose a model of citizen satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam, with six factors including (1) Reliability; (2) Service capacity of staff; (3) Service attitude of staff; (4) The service level of staff; (5) Infrastructure; (6) Administrative procedures. The research structure is in Figure 1.

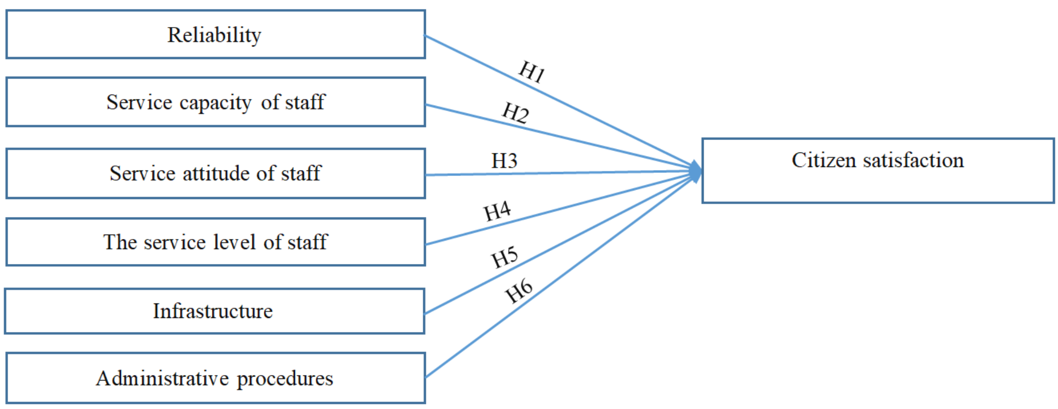

Figure 1. Overview of Research Structure

The factors in the research structure of citizen satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam, include (1) Reliability; (2) Service capacity of staff; (3) Service attitude of staff; (4) The service level of staff; (5) Infrastructure; (6) Administrative procedures. It is shown in Table 1.

Table 1. Observed Variables in the Research Structure of citizen satisfaction with the quality of public administrative services

Factors in the research structure	Encode	Observed variables
Reliability	REL	(1) The administrative procedures are public and transparent; (2) The records are not erroneous or lost; (3) Citizens do not have to travel many times to process dossiers; (4) The application is handled on time; (5) The locality is a reliable place to handle administrative procedures.
Service capacity of staff	SCS	(1) The employee receiving the application has good communication skills; (2) Staff who receive dossiers are proficient in relevant expertise; (3) The employee receiving the application has relevant knowledge and skills to deal with the work; (4) Reception staff handle and satisfactorily settle citizens' problems.
Service attitude of the staff	SAS	(1) The staff receiving the application has a polite attitude; (2) Reception staff have a friendly attitude when answering citizens' inquiries; (3) The staff receiving documents enthusiastically answered citizens' questions; (4) Receptionists serve fairly and equally for all citizens; (5) The receiving staff has a high responsibility for the records; (6) Employees do not have a troublesome or harassing attitude when receiving dossiers.
The service level of staff	SLS	(1) Citizens can easily contact and communicate with the officer who handles the application; (2) The employee handles the application flexibly and in a timely manner; (3) The reasonable requests of the people are taken care of; (4) People's questions were answered satisfactorily by officials; (5) Citizens can communicate and express their opinions with the top leaders.
Infrastructure	INF	(1) The place to receive and return documents is reasonable and convenient for communicating and contacting employees; (2) The place to receive and return documents has full facilities; (3) A modern place to receive and return documents; (4) The instructions, forms and procedures are posted and pasted fully and conveniently; (5) The information instructions, forms, procedures are designed to facilitate the search; (6) Location and convenient way to park the car to come to the transaction.
Administrative procedures	ADP	(1) The procedure is transparent, clear and convenient for the transaction process; (2) Requesting all kinds of documents and procedures to be lawful; (3) The dossier is returned to the people without errors; (4) Time to return documents is not late compared to the appointment letter; (5) The meeting schedule is public and convenient for transactions.
Citizen satisfaction	CIS	(1) Citizens are satisfied with local public administration services; (2) Citizens are satisfied with the staff's service; (3) Citizens are satisfied with local administrative procedures; (4) In general, Citizens are satisfied with the performance of public administrative services in the locality.

RESEARCH METHODS

Evaluate citizen satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. The methods used include descriptive statistical analysis, exploratory factor analysis, and regression analysis to check the research structure. The steps of the research method are shown in Figure 2.

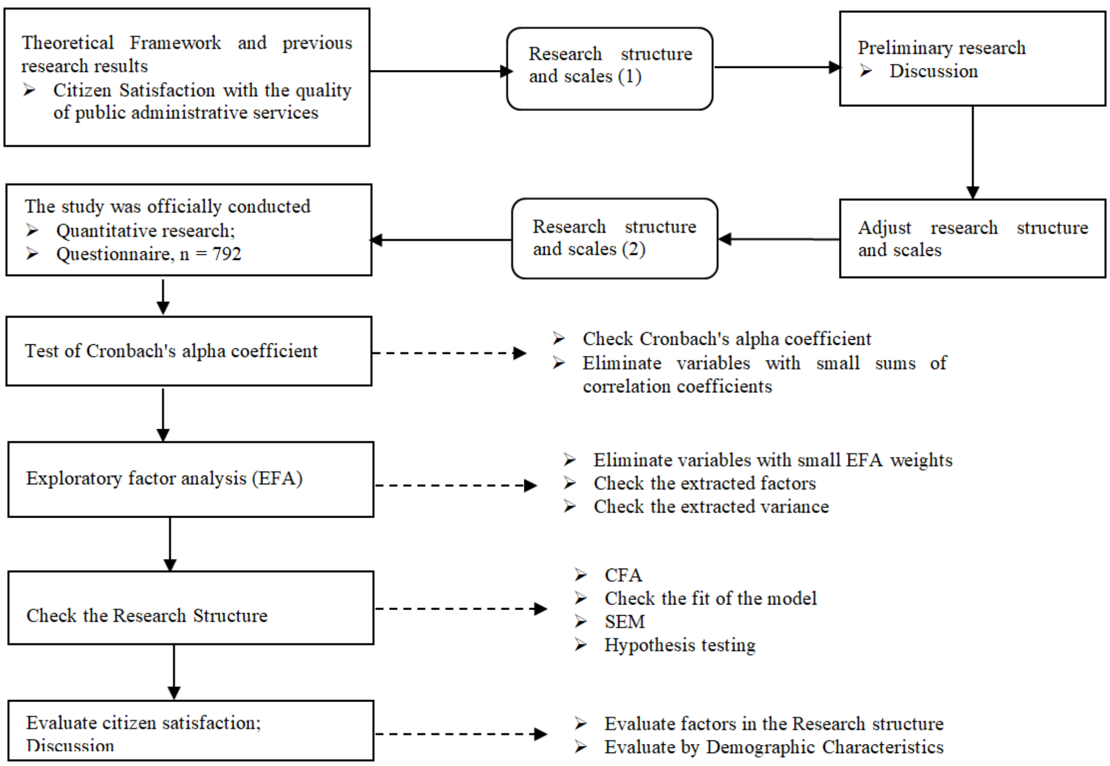

Figure 2. Flowchart of research methodology steps

1. Take a research sample

Based on preliminary discussion results from the research group, a questionnaire was developed on citizen satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. The questionnaire has 39 Likert items, including demographic questions about the survey area, gender, age, and education level in the Mekong

Delta region, and seven scales of citizen satisfaction with the quality of public administrative services. Data collection took place from October 2022 to March 2023. The Mekong Delta is a peninsula with three directions to the East, South and Southwest bordering the sea, the West is adjacent to Cambodia, and the North is adjacent to Ho Chi Minh City. According to the General Statistics Office of Vietnam, by 2019, the Mekong Delta has a natural population of 17,282,500 people. The Mekong Delta has 13 administrative units, including one city directly under the Central Government (Can Tho City) and 12 provinces (Long An, Dong Thap, An Giang, Tien Giang, Ben Tre, Vinh Long, Tra Vinh, Hau Giang, Kien Giang, Soc Trang, Bac Lieu và Ca Mau) (Nguyen, 2022). According to the principle of random selection, the study sample was taken from 8 localities in the Mekong Delta, including Tien Giang, Dong Thap, Can Tho, Vinh Long, An Giang, Tra Vinh, Ca Mau, and Kien Giang. The study area is shown in Figure 3.

2. Data Analysis

The Likert scale is used with a range of values from 1 to 5 to measure the perception of survey subjects (1) totally disagree, (2) disagree, (3) neutral, (4) agree, (5) totally agree. Respondents answered directly on the questionnaire. The study was conducted with the subjects' citizens in the Mekong Delta, Vietnam. Questionnaires were distributed to 800 citizens. There were 792 valid answer sheets collected. It is shown in Table 2. Responses from the survey were coded and analyzed using SPSS software version 20 and AMOS version 24. Evaluation of citizen satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam, with four steps to carry out the analysis, including Assessing the scale's reliability using Cronbach's Alpha. The alpha coefficient was developed by Cronbach (1951) to measure the internal consistency of variables within the same group. Accordingly, Cronbach's Alpha coefficient can be used to evaluate the reliability of the scale and remove inappropriate variables from the research model; the Exploratory Factor Analysis (EFA) to assess the convergent and discriminant value of each variable in the factor groups; the Confirmatory Factor Analysis (CFA) to check the representativeness of observed variables; evaluated through criteria including reliability; convergence; and distinctiveness. Hypothesis testing by the linear structural model (SEM) citizen satisfaction with the quality of public administrative services and evaluating the citizen satisfaction with the quality of shared administrative services in the Mekong Delta, Vietnam.

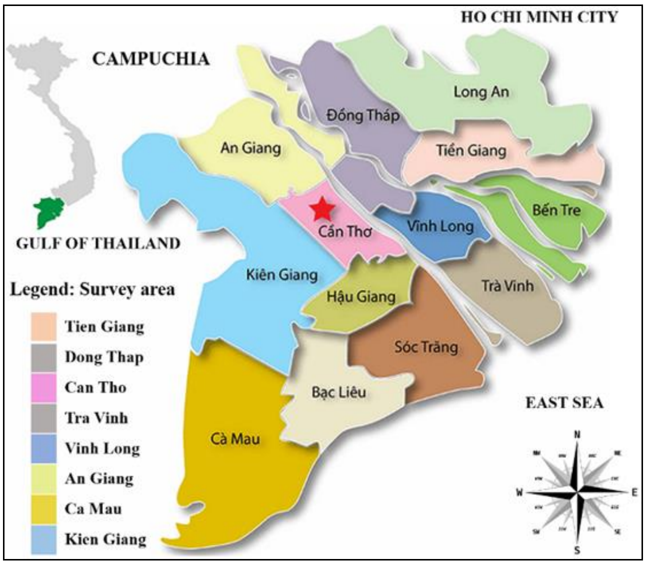

Figure 3. Survey area in the Mekong Delta, Vietnam

Table 2. Demographic Characteristics of the Survey Sample

Characteristics and Survey Area	Number of citizens	Percentage
1. Survey area	**792**	**100%**
Tien Giang	66	8.3
Dong Thap	115	14.5
Can Tho	60	7.6
Vinh Long	145	18.3
Tra Vinh	90	11.4
An Giang	138	17.4
Ca Mau	73	9.2
Kien Giang	105	13.3
2. The gender	**792**	**100%**
Male	403	50.9
Female	389	49.1
3. Age (years)	**792**	**100%**
< 30	222	28.0
30 - 40	203	25.6
40 - 50	156	19.7
> 50	211	26.6
4. Education	**792**	**100%**
Master	94	11.9
College	315	39.8
High school	177	22.3
Other	206	26.0

RESULTS

1. The results of testing the reliability of the scales

Cronbach's Alpha coefficient was used to check the close correlation of the scales. According to researchers on the scale that can use Cronbach's Alpha coefficient > .6, the best scale ranges from .8 to 1. In addition, the variables that have a variable correlation coefficient < .3 will be excluded from the research model (Nunnally and Bernstein, 1994). The data processing results in Table 3 show that all seven scales have high reliability. Cronbach's Alpha coefficient is> .8, and the total correlation coefficient is> .3 (Cronbach, 1951). It represents the appropriateness of the scale.

Table 3. Results of testing Cronbach's Alpha scales

Scales of measurement	Encode	No. of items	Cronbach's Alpha	Corrected Item-Total Correlation range	Mean
Reliability	REL	5	.860	.603 - .804	3.695
Service capacity of staff	SCS	4	.926	.775 - .866	3.120
Service attitude of the staff	SAS	6	.914	.688 - .853	3.033
The service level of staff	SLS	5	.900	.693 - .821	3.961
Infrastructure	INF	6	.886	.629 - .828	3.384
Administrative procedures	ADP	5	.944	.764 - .907	3.646
Citizen satisfaction	CIS	4	.951	.794 - .943	3.773

2. Exploratory Factor Analysis (EFA) for the scales

The results of the KMO and Bartlett tests in the KMO and Bartlett test tables show that the KMO value = .868 proves that this discovery coefficient is consistent with the scale. Bartlett test, Sig.= .000 (< .05) value shows that the variables are correlated in terms of factors.The eigenvalue parameter ≥ 1 is kept in the analytical model. The analysis showed that Eigenvalue = 1.304 (≥ 1), and seven factors were extracted with the best information synthesis meaning. The sum of squares of the cumulative factor loading (Cumulative) is 74.338% (≥ 50%), showing that the EFA model is suitable (Hair et al., 2010). Therefore, the research model keeps all seven factors unchanged, as shown in Table 4. The results of the rotation matrix in Table 4 show that 35 observed variables are classified into seven factors, all observed variables have factor loading coefficients greater than .5, and there are no terrible observed variables. Therefore, all seven factors are kept in the research model (Baumgartner and Homburg, 1996).

Table 4. Rotated component matrix

	Component						
	1	2	3	4	5	6	7
SAS5	.875						
SAS6	.844						
SAS3	.795						
SAS4	.790						
SAS1	.752						
SAS2	.743						
ADP4		.947					
ADP5		.931					
ADP3		.916					
ADP2		.863					
ADP1		.812					
INF6			.890				
INF5			.819				
INF4			.818				
INF2			.740				
INF1			.719				
INF3			.709				
SLS5				.882			
SLS4				.864			
SLS1				.814			
SLS2				.794			
SLS3				.773			
SCS3					.905		
SCS4					.897		
SCS2					.864		
SCS1					.827		
REL5						.840	
REL3						.779	
REL2						.766	
REL1						.742	
REL4						.688	
CIS2							.852
CIS4							.851
CIS1							.721
CIS3							.665

3. Confirmatory Factor Analysis (CFA) in the research structure

Confirmatory Factor Analysis (CFA) is a statistical technique of linear structural modelling (SEM). Confirmatory factor analysis was used to check the scales and the appropriateness of the research structure. Confirmatory factor analysis results are evaluated through the following criteria: reliability, Convergence, and distinction.

We tested Composite Reliability, Convergence, and Discrimination. It is shown in Table 5. Convergent validity tests include Composite Reliability and Average Variance Extracted. The test results show that Composite Reliability (CR) > (.7) means that the reliability of the scales is guaranteed; All Mean Variances are extracted Average Variance Extracted (AVE) ≥ (.5), and both indicators show guaranteed Convergence. We then tested Discriminant Validity, including Maximum Shared Variance (MSV); The square root of the mean-variance is extracted from the Square Root of AVE (SQRTAVE). The test results in Table 5 show that all Maximum Shared Variance (MSV) < Average Variance Extracted (AVE).

In addition, we tested the Discriminant Validity shown in the Square Root of AVE (SQRTAVE) > Inter-Construct Correlations. Thus, Discriminant Validity is guaranteed (Doll et al., 1994). Thus, the test results of convergence and discriminant validity shown in Tables 5 have shown the combined reliability; discriminant validity is guaranteed at all scales.

Table 5. Results test model validity

Factors construct	CR	AVE	MSV	MaxR(H)	SAS	ADP	INF	SLS	SCS	REL	CIS
SAS	.915	.645	.219	.932	**.803**						
ADP	.941	.763	.065	.972	-.014	**.874**					
INF	.888	.573	.116	.918	.257***	.018	**.757**				
SLS	.901	.647	.120	.910	.274***	.096*	.191***	**.804**			
SCS	.927	.760	.137	.933	.317***	-.021	.138***	.205***	**.872**		
REL	.862	.558	.197	.892	.406***	.141***	.262***	.265***	.252***	**.747**	
CIS	.950	.827	.219	.999	.468***	.255***	.341***	.346***	.370***	.444***	**.909**

Significance of Correlations: † p < .100; * p < .050; ** p < .010; *** p <.001

4. Structural model testing (SEM)

To check the suitability of the research structure, the results of analysis of the linear structural model (SEM) in Figure 4 shows that it has Chi-square = 3.399; CFI = .952; GFI = .889; RMSEA = .055; TLI = .945; PCLOSE = .002, the coefficients just shown are acceptable (Doll et al., 1994). The results of the linear structural model analysis (SEM) in Figure 4 show the appropriateness of the research structure. The results of testing the linear structure of the model citizens' satisfaction with the quality of public administrative services are shown in Figures 4 and Table 6. The data show the Sig values of the scales REL = .000 (<.05), SCS = .000 (<.05), SAS = .000 (<.05), SLS = .000 (<.05), INF = .000 (<.05), ADP = .000 (<.05) (Hu and Bentler, 1999). The Sig values it has been shown that there is an impact relationship between the independent variable and the dependent variable. The results of testing the impact of factors in the research structure are shown in Table 6. It shows that the larger the normalized regression coefficient, the stronger the independent variable. It strongly impacts the dependent variable, citizens' satisfaction (CIS). Factors affecting citizens' satisfaction in the Mekong Delta, Vietnam, include REL = .173, SCS = .191, SAS = .252, SLS = .137, INF = .175, and ADP = .228.

The results of testing the linear structure of the research model have R2 (Adjusted R Square) of CIS = .429, which means that the research model is suitable. The regression model explains that the independent variables affecting 42.9% of the variation of the dependent variable are citizen satisfaction (CIS) in the research structure. Testing the linear structure of the research model shows that the scales are reliable and valid for model evaluation. The findings of the study show that there are six factors affecting citizen satisfaction, including (1) Reliability; (2) Service capacity of staff; (3) Service attitude of staff; (4) The service level of staff; (5) Infrastructure; (6) Administrative procedures.

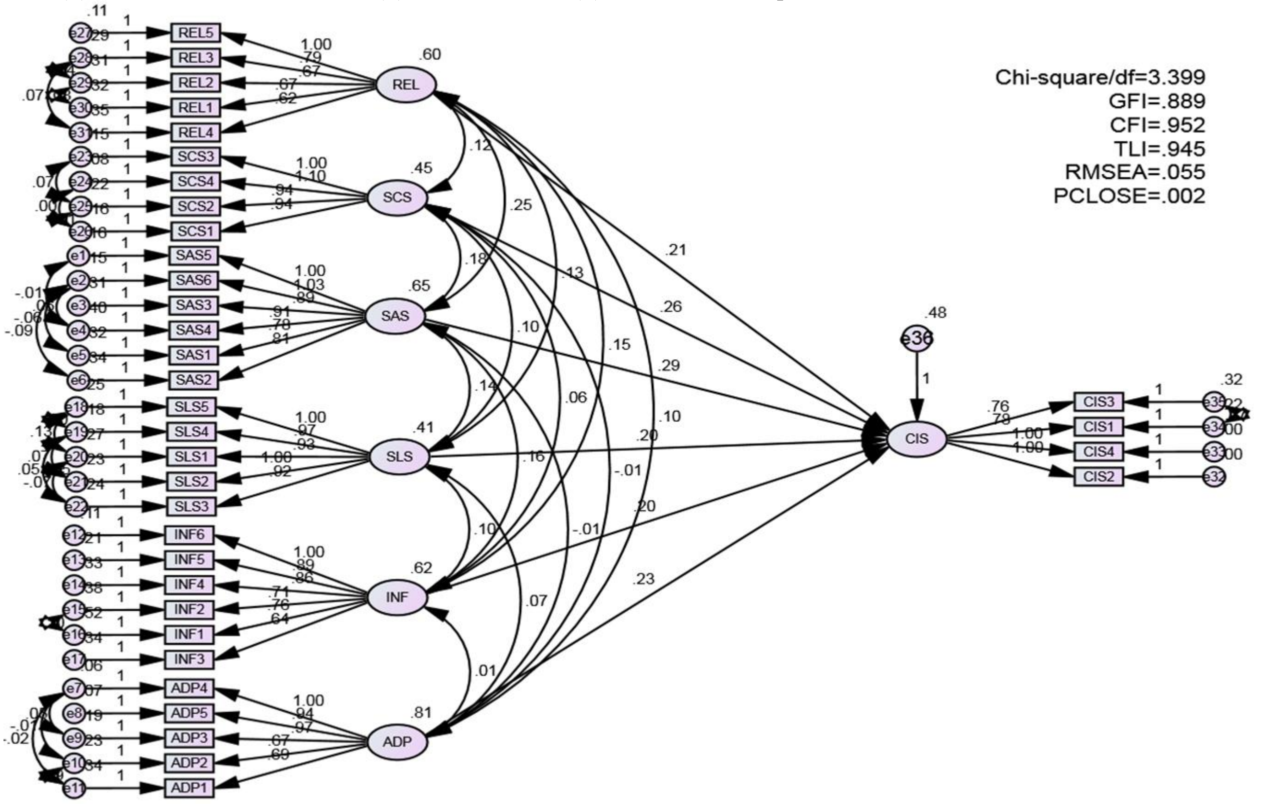

Figure 4. Results of the research structure citizens' satisfaction with the quality of public administrative services

Table 6. Factors affecting citizen satisfaction

The impact of independent variables on the dependent variable	Estimates	Sig	Standardized estimates
REL -----> CIS	.205	.000	.173
SCS -----> CIS	.261	.000	.191
SAS -----> CIS	.287	.000	.252
SLS -----> CIS	.196	.000	.137
INF ------> CIS	.205	.000	.175
SDP -----> CIS	.234	.000	.228

5. Assessment of citizen satisfaction by demographic group

Assessment of citizen satisfaction by gender group. We performed the Independent-Samples Test to assess the difference in citizen satisfaction between two groups of men and women. Citizen satisfaction has Sig test = .082 (>.05); there is no difference in variance between the two groups of men and women. We will use the test results of Equal variances assumed Sig test = .732 (>.05). Thus, satisfaction with the quality of public services is the same between male and female groups in the Mekong Delta. It shows in Table 7.

Table 7. Analysis of differences between male and female groups' citizen satisfaction

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean difference	Std. Error difference	95% Confidence interval of the difference	
									Lower	Upper
Citizens satisfaction	Equal variances assumed	3.036	**.082**	-.342	790	**.732**	-.02039	.05963	-.13744	.09665
	Equal variances not assumed			-.343	787.400	.732	-.02039	.05953	-.13724	.09646

Assessment of citizen satisfaction by age group. We perform a One-way ANOVA test to assess the difference in citizen satisfaction by age groups. Based on Table 8. Test of Homogeneity of Variances. There is a Sig Levene Statistic of .040 (<.05), meaning there is a difference in variance between age groups. We used the Welch test results in the Robust Tests of Equality of Means Table 9. The Welch test sig is .535 (>.05), meaning there is no difference in citizen satisfaction between age groups. Thus, there is no difference in citizen satisfaction with public administrative services at different ages.

Assessment of citizen satisfaction by education group. We perform a One-way ANOVA test to assess the difference in citizen satisfaction among education groups. Based on the Test of Homogeneity of Variances, there is a Sig Levene. Statistic of .333 (>.05), meaning there is no difference in variance between educational groups. We have used the results of the citizen satisfaction test in the ANOVA table. The ANOVA test sig is .069 (>.05), meaning there is no difference in mean citizen satisfaction between different educational groups. Thus, citizen satisfaction among citizens with varying levels of education is the same.Assessment of citizen satisfaction by survey area group. We perform a One-way ANOVA test to assess the difference in citizen satisfaction by Survey area groups. Based on Table 10. Test of Homogeneity of Variances by Survey area group. There is a Sig Levene Statistic of .000 (<.05), meaning there is a difference in variance between survey area groups.

We used the Welch test results in the Robust Tests of Equality of Means by Survey area group in Table 11. The Welch test sig is .003 (<.05), meaning there is a difference in citizen satisfaction between survey area groups. Thus, there is a difference in citizen satisfaction with public administrative services in other survey areas.

Table 8. Test of Homogeneity of variances by age group

Levene Statistic	df1	df2	Sig.
2.782	3	788	**.040**

Table 9. Robust tests of equality of means by age group

	Statistica	df1	df2	Sig.
Welch	.730	3	424.255	**.535**

Table 10. Test of homogeneity of variances by survey area group

Levene Statistic	df1	df2	**Sig.**
4.240	7	784	**.000**

Table 11. Robust tests of equality of means by survey area group

	Statistica	df1	df2	**Sig.**
Welch	3.201	7	293.405	**.003**

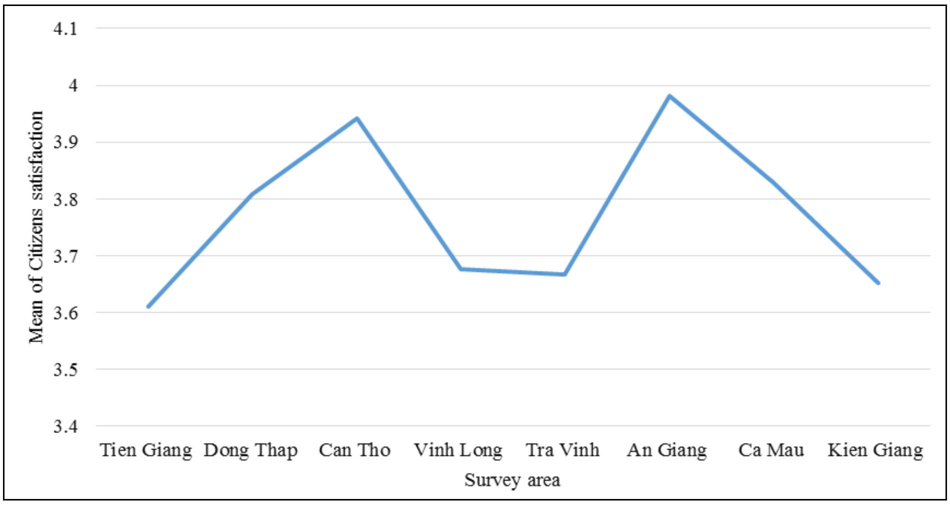

Figure 5. Mean value citizen satisfaction in survey areas

In addition, Figure 5. shows that the average value of citizen satisfaction in the provinces, including Tien Giang is 3.6098, Dong Thap is 3.8087, Can Tho is 3.9417, Vinh Long is 3.6759, Tra Vinh is 3.6667, An Giang is 3.9819, Ca Mau is 3.8288, Kien Giang is 3.6524. The findings show that citizens in the Mekong Delta provinces have different average satisfaction with the quality of public administrative services.

DISCUSSION

Research results show that the scales are reliable and valid for model evaluation. The study's findings show that six factors affect citizens' satisfaction with the quality of public administrative services, including Reliability; Service capacity of staff; Service attitude of staff; The service level of staff; Infrastructure; Administrative procedures.Reliability affects citizens' satisfaction is .173. Administrative procedures involve citizens' satisfaction is .228. According to the survey results, executive functions are listed publicly and transparently. We should build a process to handle managerial procedures so employees follow the working process (James and Moseley, 2014). Regulations on binding responsibilities between the agency and each employee ensure that records are circulated safely, and descriptions are not lost (Giannoccaro et al., 2008). The output is the correct administrative documents. At the same time, we should closely coordinate between specialized departments and regularly review and improve procedures from receiving, accepting, circulating and returning results on time.

The service capacity of staff affects citizens' satisfaction is .191. The survey results showed that citizens rated the staff's service capacity on average and the level of satisfaction with the service capacity. Improving knowledge and professional skills for employees is essential and rewarding (Saich, 2007). We should regularly organize professional training and communication skills for employees (Steppacher et al., 2021). In addition, selecting competent and dedicated employees with professional ethics is advisable for serving citizens.

The service attitude of staff affects citizens' satisfaction is .252. When performing administrative procedures, employees should have a cheerful attitude. Dedicated staff guides facilitate citizens to carry out the functions easily. Employees must deal with citizens' cases on time to feel secure (Bostanci and Erdem, 2020). Citizens think that trust in administrative procedures and the quality of administrative agencies is increased. In addition, we should implement the form of "apologizing directly, writing a letter of apology, going to the house to apologize" to organizations and individuals when we handle administrative procedures not on time. We should implement a "thank you "

letter for organizations and individuals who contribute (Song et al., 2017). Regularly conducting staff quality assessments will contribute to human resource development and management and help arrange employees in the right places and with the exemplary forte (Na et al., 2022).

The service level of staff affects citizens' satisfaction is .137. Employees should be aware that people who come to transact at the application reception and return the results have different educational and professional qualifications (Tanny and Zafarullah, 2023). Staff should guide by the citizen's understanding. Ensure that the instructions are easy to follow for citizens, strictly comply with the regulations and working hours of the agency, and do not cause difficulties for citizens (Beuermann and Amelina, 2018). We should improve and make reasonable changes to public administrative services and reduce unnecessary managerial procedures in transactions. Flexible document processing offers improvements and best practices, reducing excessive transaction administrative procedures (To, 2023).

Infrastructure affects citizens' satisfaction is .175. We should arrange and rearrange each department reasonably, create a friendly environment for communication between employees and citizens, and equip more cabinets so that records are stored neatly (Besfat, 2022). The department that receives documents and returns results should have a screen to look up administrative procedures, necessary facilities and materials to serve people while waiting for transactions. We continue to apply information technology to state management and provide public administrative services to reduce people's travel costs and save costs for executive agencies (Sirgy et al., 2000). We should install a system to evaluate people's satisfaction with public administrative services at the department of receiving dossiers and returning results.

CONCLUSION

Based on the theoretical model that has been built, the research has built and tested the reliability of the scale of citizens' satisfaction with the quality of public administrative services in the Mekong Delta, Vietnam. The results of the analysis of the linear structural model (SEM) showed that the research model explained 42.9% of the overall relationship of the variables, including (1) Reliability; (2) Service capacity of staff; (3) Service attitude of staff; (4) The service level of staff; (5) Infrastructure; (6) Administrative procedures.

Assessment of citizen satisfaction by demographic group. The results show that there is no difference in mean satisfaction between groups by gender, and by age, by education. In addition, when analyzing ANOVA, the results show that citizens by area group have differences in average satisfaction with public administrative services. The limitation of the study is that the research sample is selected according to the traditional method; the collected data may be affected in part because the model needs to have general significance. Implementing research with a larger sample is an open direction for further studies in this field.

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ANALYSIS AND QUANTITATIVE ASSESSMENT OF GEODIVERSITY AT KARYA MURNI, GORONTALO, INDONESIA

Yayu Indriati ARIFIN*
Gorontalo State University, Geological Engineering Study Program, Earth Science and Technology Department, Faculty of Mathematics and Natural Science, Indonesia, e-mail: yayu_arifin@ung.ac.id

Widya Meifi PATTIRO
Gorontalo State University, Geological Engineering Study Program, Earth Science and Technology Department, Faculty of Mathematics and Natural Science, Indonesia, e-mail: patirowidya@gmail.com

Intan Noviantari MANYOE
Gorontalo State University, Geological Engineering Study Program, Earth Science and Technology Department, Faculty of Mathematics and Natural Science, Indonesia, e-mail: intan.manyoe@ung.ac.id

Siti Suhartini S. NAPU
Gorontalo State University, Geological Engineering Study Program, Earth Science and Technology Department, Faculty of Mathematics and Natural Science, Indonesia, e-mail: sitinapu4@gmail.com

Hisanari SUGAWARA
Gunma Museum and Natural History, Gunma, Japan, Research Institute for Humanity and Nature, Kyoto, Japan, e-mail: sugawaragmnh@gmail.com

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Abstract: Karya Murni is one of the areas in the northern arm of Sulawesi that has been tectonically influenced. Tectonic processes have implications for the formation of rocks and geological features that have the potential to be developed into geodiversity sites. The development of geological features as a geodiversity site in aspiring geopark Gorontalo can protect valuable geological features from frequent degradation. This research aims to analyze and conduct quantitative assessments of geological diversity in Karya Murni, Gorontalo. The research method used is field observation, laboratory analysis, and geodiversity assessment. Field observations included observing landform, collecting rock samples, and measuring geological structures. Field observations were also carried out to observe aspects of the geodiversity assessment which included science, education, tourism, and risk degradation. Laboratory analysis consists of geomorphological analysis, petrographic analysis, and geological structure data analysis. Geodiversity assessment uses the Geological Survey Center of Indonesia assessment. The results suggest that the geomorphology of the study area can be divided into four geomorphic units - the volcanic hills, denudational hills, Karst hills, and fluvial plain units. The stratigraphy of the research area is divided into four units from the age of the early Eocene to the Holocene - the andesite lava, volcanic breccia, reef limestone, and alluvial deposit units. The geological structure of the study area is a trending northeast–southwest to northwest–southeast. Active faults at the location of the study area consist of the Apitalawu normal fault. At recent states, generally geosites of the Karya Murni have moderate scientific values, the low educational and touristic values and high risk of degradation. The geodiversity potential of the research area can be utilized for further research and education.

Key words: Geodiversity potential, andesite, volcanic breccia, reef limestone, normal fault

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INTRODUCTION

The geological diversity and uniqueness of Indonesia generates the potential of immense geological heritage in the area. Geological diversity can be identified and analyzed in rocks, landscapes and their constituent materials and active tectonic processes. This potential is very strategic and supports the geological resource conservation program and the development of the geological-based tourism sector through the geopark concept. An integrated management system is required so that it can be utilized for community welfare (Garcia et al., 2022; Pusat Survei Geologi, 2017). Geodiversity is defined as the diversity of geology, geomorphology, and soil features. Geological diversity includes rocks, minerals, and fossils. Geomorphological diversity includes landforms and processes (Gray and Gordon, 2020; Gray, 2013; Li, 2021). Geodiversity is the basis for geoheritage, conservation (Crofts, 2018; Ibáñez et al., 2019; Németh and Gravis, 2022), geopark, and geotourism (Koh et al., 2014; Kubalíková, 2013; Louz et al., 2022; Sallam et al., 2018). The assessment of the feasibility of geological diversity into a geological heritage is based on its internationally, national, or local ranking.

* Corresponding author

This ranking is based on the determination and assessment of the main aspects of geological diversity in the form of rocks, fossils, geological structures, landscapes, and geological evolution processes (Louz et al., 2022; Pusat Survei Geologi, 2017). The Gorontalo region is included in the northern arm of Sulawesi. Based on the lithotectonic structure of the Gorontalo area, it is included in the West Mandala as a magnetism route at the eastern end of the Sunda Shelf.

Gorontalo is part of the volcanic-plutonic belt of north arm of Sulawesi Island in Eastern Indonesia, which is controlled by tectonics, Eocene-Pliocene volcanic rocks, and intrusion rocks (Tolodo et al., 2019; Zhang et al., 2022). The active magmatic and tectonic route causes this area to have a complex geology both in structure and lithology, resulting in the potential of geological diversity (Andri Kurniawan et al., 2020; Manyoe et al., 2021; Thumkaew et al., 2022).

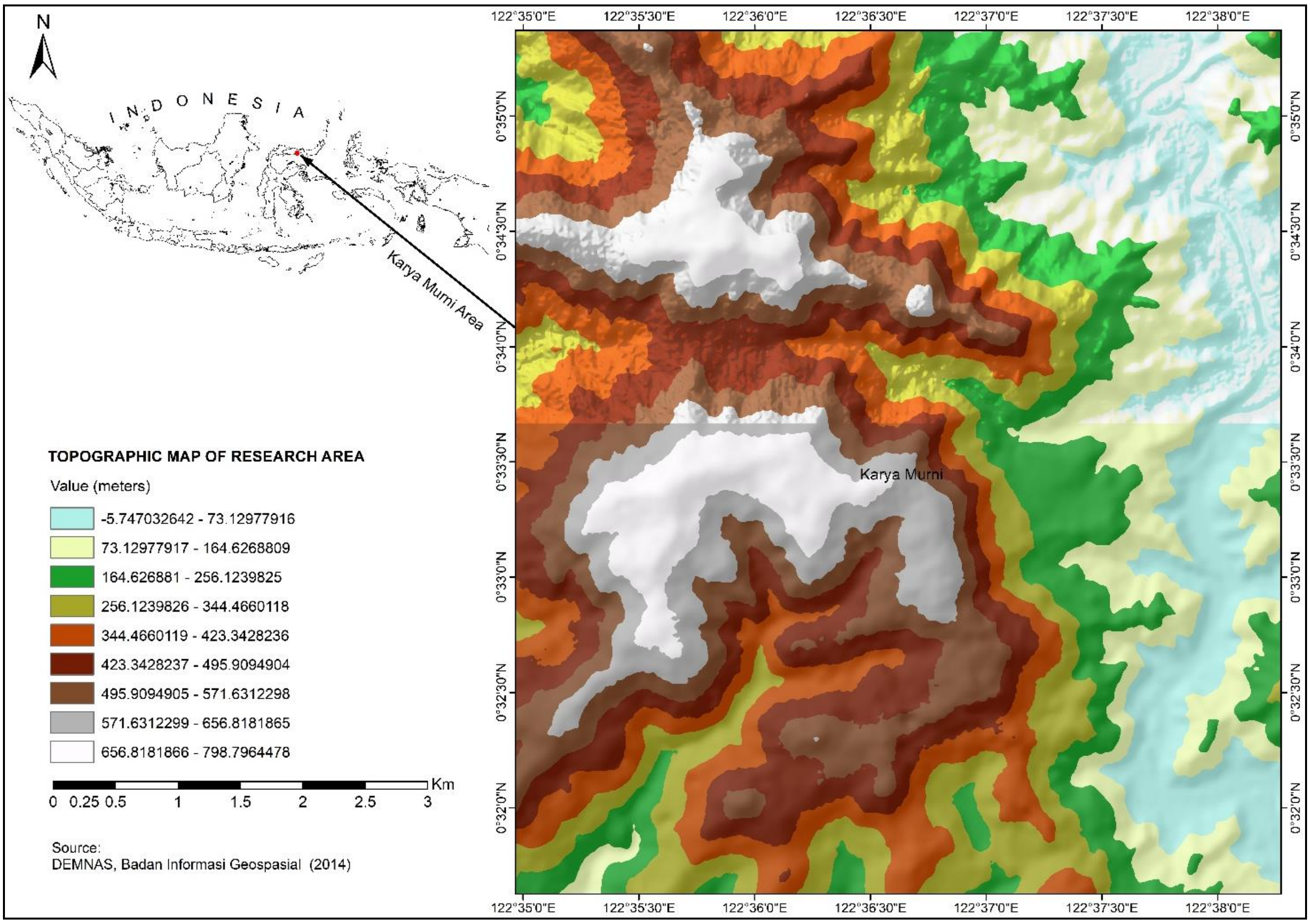

Figure 1. Research locations

Geological research in the Karya Murni area of Boalemo regency with a regional scale of 1:250,000 conducted by (Bachri et al., 1993). Several areas namely Saripi (Rusdi et al., 2022) and Dimito (Badaru et al., 2019) in Boalemo regency has been studied. The Karya Murni area has a varied topography, flat, undulating, and hilly (Figure 1). Each unit has distinctive characteristics and appearance both from the shape of mountains, hills, slopes, and flow patterns. The Karya Murni area has a stratigraphic arrangement with the oldest formation being the Tinombo formation.

This geological condition causes Karya Murni to have geodiversity potential which can be developed into a potential site for a geopark or for geotourism purposes. However, this development cannot be carried out due to a lack of detailed geodiversity information in the Karya Murni area. Therefore, the purpose of this research is to analyze and carry out a quantitative assessment of geodiversity in the Karya Murni area, Gorontalo, Indonesia. Geodiversity analysis includes analysis of geomorphology, stratigraphy, geological structures, and geological history.

METHODOLOGY

Geological diversity survey, laboratory analysis, and quantitative assessments were used in this study. Geological diversity survey was conducted in the form of observations of geomorphology, observations of lithology, and a measurement of the elements of the geological structure of the landscape (Brilha, 2015, 2018). Analysis of geological diversity was then followed by a quantitative assessment (Pusat Survei Geologi, 2017). The analysis of geological diversity and the stages of the quantitative assessment carried out at Karya Murni can be seen in Table 1.

Geomorphological observations were used to determine the slope, valley shape, ridge shape, river genetic type, river stage, and controlling factors such as lithology and structure (Van Zuidam, 1985). The observation of outcrops was undertaken to determine the characteristics and types of lithology, distribution and thickness, the environment of deposition or formation, and their relationship with other lithologies that can be observed in the field (Travis, 1955).

The observation of geological structures includes structural elements in the form of three-dimensional images that must be examined for their type and their position (Rickard, 1972). Rock samples gathered at each observation station were analyzed in the geological laboratory to determine the type of lithology, thickness, and the depositional environment present. Data processing and analysis includes paleontological analysis, petrographic analysis, and sedimentological analysis. Paleontological analysis was undertaken to determine the age and environment of deposition. Petrographic analysis was undertaken to determine rock composition and the type of lithology of the rock samples. Sedimentological analysis was performed to determine the mechanism and environment of deposition. An analysis of structural data was undertaken to determine the deformations that have occurred in the study area. The following stage was a quantitative assessment of the geological diversity within the Karya Murni area. The quantitative assessment of geological diversity included the assessment of the values of science, education, tourism, and the risk of degradation in the study area (Arifin et al., 2021; Manyoe et al., 2021). The quantitative assessment refers to the assessment of the Pusat Survei Geologi (2017). The research flowchart can be seen in Figure 2.

Table 1. Geological diversity analysis and quantitative assessment stages carried out at Karya Murni (Brilha, 2015, 2018; Pusat Survei Geologi, 2017)

Geological Diversity	
Field observation	- Geomorphology - Lithology - Geological structure
Laboratory analysis	- Geomorphology - Petrography - Sedimentology - Paleontology - Geological structure
Quantitative Assessment	
Assessment criteria	- Scientific values - Education values - Tourism values - Risk degradation values

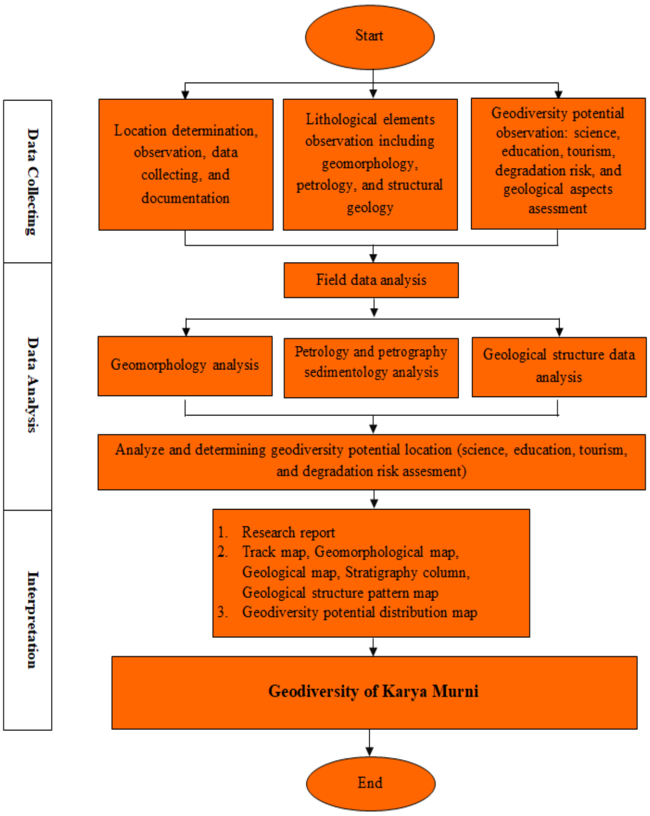

Figure 2. Research flow chart

RESULTS AND DISCUSSION

Geological Diversity

Geomorphology

The geomorphology of the study area includes a landscape dominated by mountains, hills, and plains. The lowest elevation is in the eastern region, while the highest elevation is in the western region. Landscapes are generally controlled by lithology, structure, and erosion processes (Chevigny et al., 2014; Gonnet et al., 2023; Medina-Cascales et al., 2021). Based on these factors and geomorphology unit classification (Van Zuidam, 1985), the research area is divided into four morphological units, the volcanic hill unit, denudational hill unit, karst hill unit, and fluvial plains unit (Figure 3).Volcanic hill units are formed from volcanic sediment and volcanic fragments. This unit is west of the Paguyaman River—this river is the primary river in the study area. This geomorphological unit encompasses the region bordering the southern part of the study area, with an area of ± 25 km^2, with elevations ranging from 300–890 mamsl and slopes ranging from 24–35%. The lithology is dominated by volcanic products, namely andesite lava, with moderate to strong rock resistance. The river flow pattern consists of a trellis flow pattern, flowing east and west. This area is used by the community as a place for settlements and plantations. Denudational hill units cover ± 30% of the study area, having an elevation of 50–240 mamsl. This unit is in the eastern and southern parts of the Paguyaman River. This unit is influenced by the joint structure.

The river flow pattern is dendritic. There is an intensive level of erosion and weathering here, and the valley is V-shaped with substantial mass wasting. The lithology consists of andesite lava. The Karst hill units result from solusional processes in carbonate rocks. This unit is controlled by the geological structure, the nature and type of carbonate rock, climatic conditions, and the hydrogeological characteristics of the area. This unit has a height of ± 197–533 mamsl. Karst hill units are located around the Apitalawu and Girisa Villages. This unit is used as a residential area by residents. The lithology in this unit consists of Reef Limestone. The fluvial plain unit has a flat slope of 0–2°. This unit is composed of fine-grained materials, such as clay, silt, and boulder deposited in the point and channel bars found along the Paguyaman River. The process of erosion and weathering remains ongoing in this area. Many of the rivers in this study area are periodic, due to the reduction in river water during the dry season. Consequently, they flood at the commencement of the rainy season. This unit is used by the community as a place for settlement and agriculture.

Stratigraphy

The stratigraphy of the study area is measured from old to young, namely andesite lava, volcanic breccia, reef limestone, and alluvial deposit units.

Figure 3. Geomorphology unit (a) Volcanic hills in Tangkobu Village (b) Denudational hills in Tangkobu Village (c) Karst hills in Apitalawu Village (d) Fluvial plain in Apitalawu Village (Source: Field documentation, March 2019)

Figure 4. (a) Hand specimen of andesite lava in Karya Murni Village (b) Pillow lava structure on andesite outcrop in Karya Murni Village, (c) Photomicrograph of andesite rocks. Photomicrograph shows the minerals found in andesite rocks. The photomicrograph on the left uses polarized light (c1 and c3) while the photomicrograph on the right uses x-polarised light (c2 and c4). The minerals visible in the photomicrograph are plagioclase, orthoclase, and pyroxene (Source: Field documentation and research data analysis, 2019)

Andesite Lava Units

This unit is indicated by the existence of a pillow lava structure at the observation station and generally occupies 40% of the research area. This unit is exposed along the road of the Karya Murni, Juria, and Girisa villages, and parts of the Tangkobu Village. Andesite appears brownish gray under the microscope, and the vesicular structure measures 0.1–0.2 mm. The sample suggests an intergranular texture dominated by plagioclase minerals and alkaline feldspar (Figure 4a and 4b). Plagioclase minerals—and slightly alkaline feldspar—are subhedral and 0.1–0.5 mm in size. Pyroxene has a size of 0.1–0.2 mm. Moderate altered rocks are approximately 35%. Rocks are composed of an alteration mineral association of carbonate-sericite-chlorite-mineral opaque (Figure 4c). Based on the similarity in the physical characteristics of the lithology, this unit can be compared to the Tinombo Formation. This unit was formed because of an underwater volcanic eruption process. This unit was deposited in the Eocene-Oligocene based on the Regional Geological Map of the Tilamuta Sheet by (Bachri et al., 1993).

Volcanic Breccia Units

This unit occupies 20% of the research area. Opened vertically on a steep hillside (300–890 m), this unit is located on the Pulubala and Laleo Rivers. In general, this unit consisted of fresh to very weathered conditions (Figure 5a). In megascopic, this rock consists of a blackish gray color, weathered igneous rock fragments, igneous cement, poorly sorted, subangular, poor porosity, compact, a grain size above 1/16 mm, quartz minerals, and plagioclase (Figure 5b). The appearance under the microscope indicates that this rock has a porphyritic texture, anhedral – subhedral, inequigranular, hypidiomorph – allotriomorph, and holocrystalline structure. Based on the petrographic analysis, this unit has felsic minerals in the form of plagioclase measuring 0.4–1.2 mm and euhedral –subhedral (Figure 5c). This unit is equated with the Pliocene-Pleistocene Pinogu Volcano Formation on the Regional Geological Map of the Tilamuta Sheet (Bachri et al., 1993).

Figure 5. (a) Outcrops of volcanic breccias in Lito Village (b) Hand specimens of volcanic breccias in Lito Village (c) Photomicrographs of volcanic breccias. Photomicrograph shows the minerals found in volcanic breccias. The photomicrograph on the left uses polarized light (c1 and c3) while the photomicrograph on the right uses x-polarised light (c2 and c4). The minerals visible on the photomicrograph are plagioclase (Pl), hornblende (Hb), opaque (Opq/Op), carbonate (Cb), and sericite (Ser) (Source: Field documentation and research data analysis, 2019)

Reef Limestone Unit

Coral limestone is in the southern part of the study area. It occupies a hilly Karst morphological unit. The outcrops have dimensions of ± 45 meters in length and ± 1–3 meters in height. These units were in fresh to very weathered conditions (Figure 6a-6b). Light gray in color, these units are compact, with a primary composition of coral, carbonate minerals, calcite cement, and secondary porosity (Figure 6c).

There is reverse graded bedding, with the position N114°E/45SW. These rocks are primarily composed of micrite carbonates, which have undergone a neomorphism process. The secondary porosity found in this rock is vuggy and fracture porosity. Vuggy porosity generally forms in the supratidal zone. These rocks form in the vadose meteoric diagenetic environment. This porosity is formed by the dissolving process. Similarly, neomorphism occurs within the diagenetic environment. Neomorphism is characterized by a change in the size of a mineral or crystal—which is influenced by changes in the diagenetic environment. Additionally, there are fossils in the form of foraminifera.

This unit is deposited above the Volcanic Breccia unit and the Andesite Lava unit. Based on the physical characteristics of lithology—where the main components are reef and layered—this unit is equated with the Holocene Limestone Formation on the Geological Map of the Tilamuta Sheet by (Bachri et al., 1993).

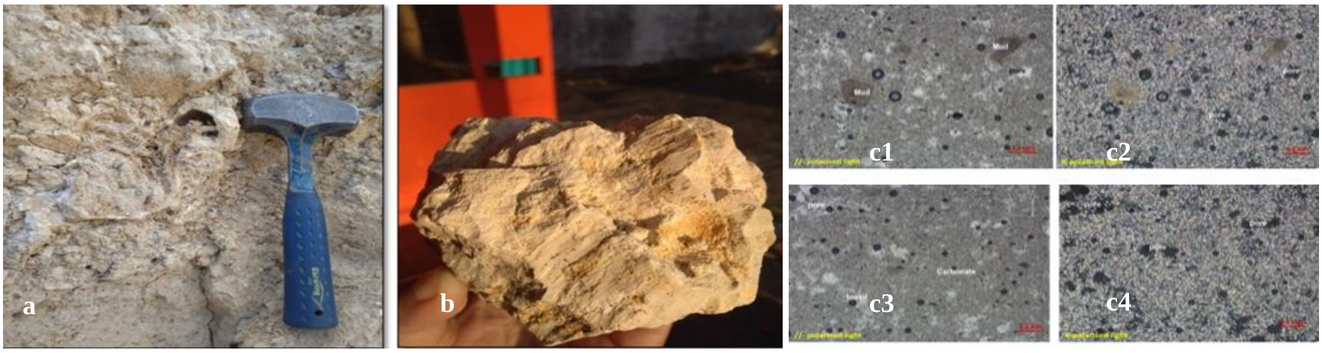

Figure 6.(a) Coral limestone in Apitalawu (b), Hand specimen of reef limestone (c), Photomicrograph of reef limestone, Photomicrograph shows the minerals found in reef limestone. The photomicrograph on the left uses polarized light (c1 and c3) while the photomicrograph on the right uses x-polarized light (c2 and c4). Photomicrograph shows. the presence of mud, pores, and carbonates (Source: Field documentation and research data analysis, 2019)

Alluvial Deposit Units

This unit is located along the Paguyaman River. It is a loose material with a size range from sand to pebble, and boulder. It is formed due to river activity and sediment accumulation from the rubble of the surrounding rock. Rock fragments consist of basalt, andesite, and dacite. This material was produced by the activities of the Tua, Laleo, and Bolangga Rivers. The alluvial unit consists of loose uncompacted sediment and igneous rock fragments in the form of andesite, basalt, and dacite. It is dominated by clay-sized textures (with partly sand to boulder sizes).

Textures are composed of sediments from various types of unconsolidated rock formation. The grain shape consists of rounded to subangular. This unit is equated with the Alluvium Formation. It is Holocene in age on the Geological Map of the Tilamuta Sheet by (Bachri et al., 1993). The deposition by river activities remains ongoing and is deposited unconformity over the older unit (Figure 7).

Geological Structure

The results of the stereonet analysis indicate that the Apitalawu fault is a Normal Right Slip Fault, with a position of N 24°E/57°SE (Figure 8). This fault is thought to have formed in the Quaternary. The naming of the Apitalawu normal fault reflects the location on which the fault is found. The direction of the main stress is east west. This fault intersects the Reef Limestone unit. The direction of structure in the Karya Murni area is different from the direction of structure or lineament in many areas in Gorontalo (Abduh et al., 2021; Robot et al., 2021). This is due to the location of the Karya Murni area which is far from the Gorontalo Fault and is influenced by different forces.

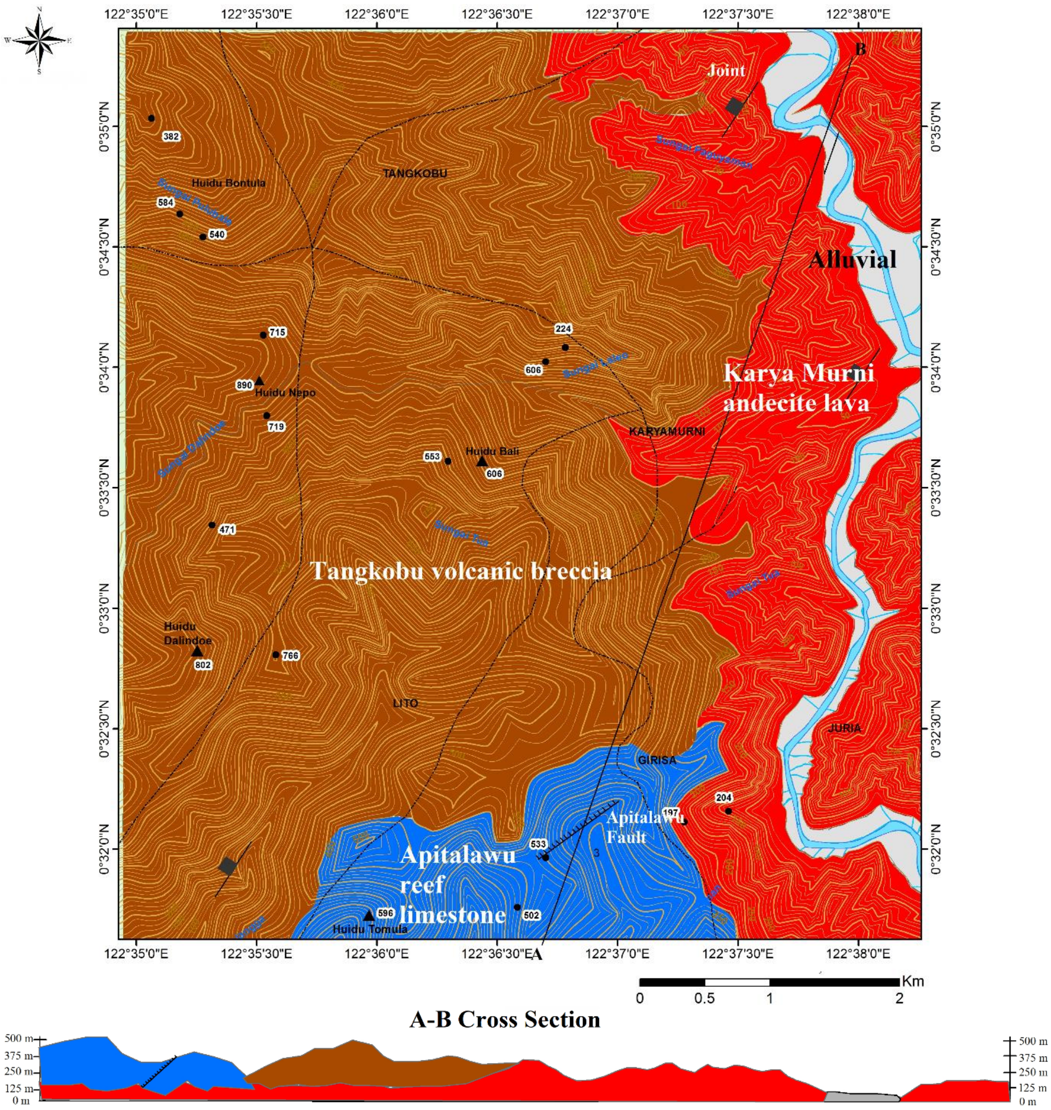

Figure 7. Geological map of research area

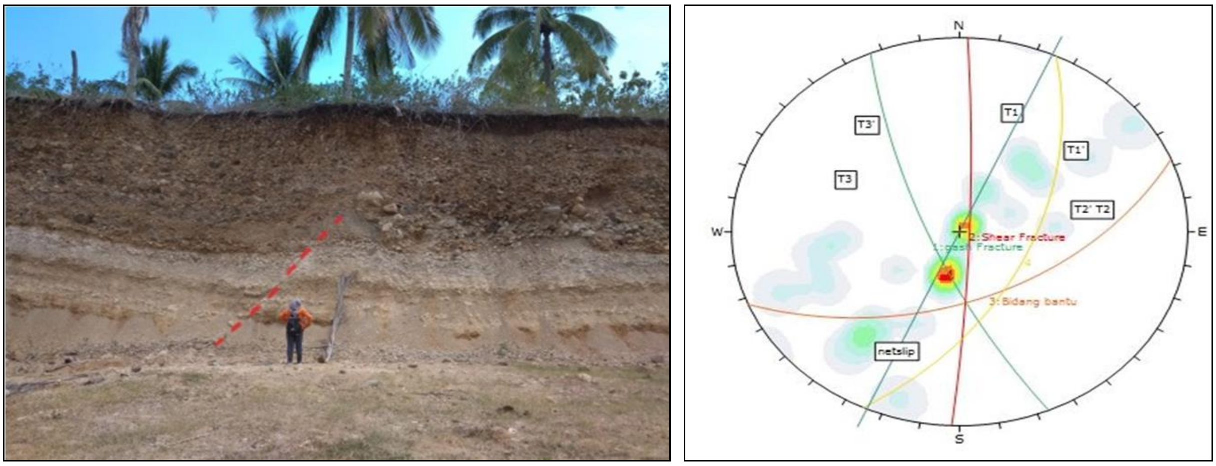

Figure 8. An outcrop showing the Apitalawu Fault (left) and fault data processing results (right)
(Source: Field documentation and research data analysis, 2019)

Geological History

The geological history of the Karya Murni area and its surroundings begins in the Eocene to the Holocene, where the Andesite Lava Unit was formed (equivalent to the Tinombo Formation). This unit forms the base rock in the study area. In the early Pliocene, magmatism occurred which was influenced by subduction from the north which formed the Pinogu Volcano. The lithology obtained in the research area consists of volcanic breccias which are deposited above the older unit.

In the quaternary era (during the Holocene) subduction resulted in an uplift in the North Arm of Sulawesi (Dong et al., 2022). The lithology obtained—because of this uplift—is the reef limestone unit. Subduction also resulted in the formation of a normal fault in the form of the Apitalawu Fault. This dissects the coral limestone unit. The reef limestone unit is deposited unconformity over the volcanic breccia and andesite lava units. In addition, there are exogenous processes in the form of weathering and erosion. Exogenous processes produce alluvial deposits that cover pre-existing rock units.

Quantitative Assessment of Geological Diversity

The geological potential assessment is achieved by quantitively assessing the geological features in the study area. The assessment criteria include the values of science, education, tourism, and the risk of degradation in the research area (Brilha, 2015, 2018; Pusat Survei Geologi, 2017). The assessment is commonly used to determine the potential of each Geosite to become geopark (dos Santos et al., 2016). In the process of quantitative assessment each geosite classified using 37 factors which is distributed into 4 categories (scientific, educational, toruistic and risk degradation). Each category will describe in detail as follows:

a. Scientific value

The factors used in conducting a quantitative assessment of scientific values include locations that represent the geological framework, key research locations, scientific comprehensive, geological site conditions, geological diversity, distribution of geological heritage sites within an area, and obstacles in use of the location of geological heritage sites (Table 2 and Table 3). The value of science in the research area is 210 and is categorized moderate.

In addition to the several things above, the reason for the value of science in the research area is 210 because the geological diversity in the study area is quite common in Gorontalo, as well as a lack of knowledge about geology.

Table 2. Scientific value

No.	Factors in the science values asessment	Geological heritage sites capacity				Description
		1	2	3	4	
1	Locations that represent the geological framework		√			Location of geological heritage sites is a common example in the study area to illustrate some feature or process related to the geological framework under consideration (when applicable)
2	Research key location		√			The location of the geological heritage site is used as a research reference related to the geological framework, scientific publication national scale.
3	Scientific comprehension			√		An article in a national science publication regarding the location of this geological heritage site is related to the geological framework
4	Condition/geological site	√				The location of the geological heritage site is not well maintained, and the geological features have undergone changes or modifications.
5	Geological diversity (rocks, minerals, landscapes, structures and fossils)				√	The location of the geological heritage site has more than 4 geological features that are scientifically related.
6	Geological diversity (rocks, minerals, landscapes, structures and fossils)		√			In the research area there are three other locations which are the same as geological heritage sites, related to the geological framework
7	Location constraints			√		Fieldwork and sampling can be carried out at the location of this geological heritage site, after completing constraints (permits, physical barriers, etc.).

Table 3. Assessment weight for science value in study area

No.	Criteria	Score	Weight	Values
1	Location that represented the geological framework	2	30	60
2	Research key location	2	20	40
3	Scientific comprehension	3	5	15
4	Condition/geological site	1	15	15
5	Geodiversity	4	5	20
6	Existence of geological heritage sites in an area	2	15	30
7	Location constraints	3	10	30
	Total		100	210

b. Educational value

The factors used in assessing educational values (educational values) include the vulnerability of a geological heritage site to damage, site attainment, barriers to site utilization, security facilities, supporting facilities, population density, relationships with other elements (Table 4 and Table 5).

Based on the assessment above, the value of education in the research area is 190 (falls into low value) because it contains important scientific records that can be used for research and education.

Table 4. Educational value

No.	Factors in the educational values assessment	Geological heritage sites capacity				Description
		1	2	3	4	
1	Vulnerability		√			There is a possibility of damage to the main geological elements in the location of the geological heritage site
2	Location accessibility				√	The location of the geological heritage site is located less than 100 m from the village road and the parking lot
3	Obstacle to site utilization	√				Use by students and tourists is very difficult because of the obstacles that are difficult to overcome
4	Security facility	√				The location of the geological heritage site has no security facilities (fences, stairs, handrails, etc.), is not within the range of telephone signals, and is more than 50 km from an emergency installation.
5	Supporting facilities	√				Lodging and restaurants for groups of less than 25 people are less than 50 km from the site of the geological heritage site.
6	Population density		√			Locations of geological heritage sites are found in districts/cities with a population density of 100 - 250 people/km. (BPS Kabupaten Boalemo, 2016)
7	Relations with other values					There isn't any
8	Location status	√				Locations of geological heritage sites are sometimes used as local tourist destinations.
9	Peculiarity	√				Sites of geological heritage sites are common throughout the country
10	Conditions on the observation of geological elements			√		There are several barriers that make it difficult to observe some geological features
11	Potential educational/research information	√				The location of this geological heritage site displays geological features that are taught at the university level.
12	Geological diversity				√	The location of the geological heritage site has more than 3 features of geological diversity (mineralogy, paleontology, geomorphology).

Table 5. Assessment weight for educational value in study area

No.	Factors in the educational values assessment	Score	Weight	Value
1	Vulnerability	2	10	20
2	Location accessibility	4	10	40
3	Obstacle to site utilization	1	5	5
4	Security facility	1	10	10
5	Supporting facilities	1	5	5
6	Population density	2	5	10
7	Relations with other values	0	5	0
8	Location status	1	5	5
9	Peculiarity	1	5	5
10	Conditions on the observation of geological elements	3	10	30
11	Potential educational/research information	1	20	20
12	Geological diversity	4	10	40
	Total		100	190

Table 6. Tourism value

No.	Factors in the tourism values asessment	Geological heritage sites capacity				Description
		1	2	3	4	
1	Vulnerability		√			There is a possibility of damage to the main geological features at the site of the geological heritage site as a result of human activities.
2	Location accessibility				√	The location of the geological heritage site is located less than 100 m from the village road and the bus parking lot. (BPS district of Boalemo, 2016)
3	Obstacle to site utilization	√				Use by students and tourists is very difficult due to barriers that are difficult to overcome (permits, physical barriers, tides, floods, etc.).
4	Security facility		√			The location of the geological heritage site has no security facilities (fences, stairs, handrails, etc.), but is within range of a telephone signal, and is less than 50 km from an emergency installation.
5	Supporting facilities	√				Lodging and restaurants for groups of less than 25 people are less than 50 km from the site of the geological heritage site.
6	Population density		√			Locations of geological heritage sites are found in districts/cities with a popu- lation density of 100 - 250 people/km (2) (BPS Kabupaten Boalemo, 2016)
7	Relations with other values					There isn't any
8	Location status	√				Locations of geological heritage sites are sometimes used as local tourist destinations.
9	Peculiarity	√				Sites of geological heritage sites are common throughout the country.
10	Conditions on the observation of geological elements			√		There are several barriers that make it difficult to observe some geological features.
11	Interpretive potential	√				The location of a geological heritage site presents geological features that only geologists can understand.
12	Economic level		√			The location of the geological heritage site is in a city with a household income similar to the national average.
13	Close to recreation area					There isn't any

Table 7. Assessment weight for tourism value in study area

No.	Factors in the tourism values assessment	Score	Weight	Value
1	Vulnerability	2	10	20
2	Location accessibility	4	10	40
3	Obstacle to site utilization	1	5	5
4	Security facility	2	10	20
5	Supporting facilities	1	5	5
6	Population density	2	5	10
7	Relations with other values	0	5	0
8	Location status	1	15	15
9	Peculiarity	1	10	10
10	Conditions on the observation of geological elements	3	5	15
11	Interpretive potential	1	10	10
12	Economic level	2	5	10
13	Close to recreation area	0	5	0
	Total		100	160

c. Tourism value

The factors used in conducting a quantitative assessment of tourism values (tourism values), include the vulnerability of a geological heritage site, location attainment, barriers to site utilization, security facilities, supporting facilities, population density, relationships with other elements, location status, peculiarities, conditions on observation of geological elements, interpretive potential, economic level and proximity to recreational areas (Table 6 and Table 7).

The value of tourism in the research area has a low value, which is at 160, because the research location does not have nearby tourist attractions and most of the research location area is only plantations and settlements.

d. Risk Degradation

The factors used in conducting a quantitative assessment of degradation risk include damage to geological elements, proximity to areas/activities that have the potential to cause degradation, legal protection, accessibility, and population density (Table 8 and Table 9).

Table 8. Degradation risk

No.	Factors in the degradation risk values assessment	Geological heritage sites capacity				Description
		1	2	3	4	
1	Damage to geological elements				√	Possible damage to all geological features
2	Adjacent to areas/activities that have the potential to cause degradation				√	The location point is less than 50 m with areas/activities that cause degradation
3	Legal protection				√	A location point located in an area that has no legal protection and no access control
4	Accessibility		√			The location point is accessible by bus via a gravel road
5	Population density		√			The location point is in a city with a population density of between 100-250 inhabitants/km^2

Table 9. Assessment weight for degradation risk in study area

No.	Factors in the tourism values assessment	Score (S)	Weight (W)	Values (V=S*W)
1	Damage to geological elements	4	35	140
2	Adjacent to areas/activities that have the potential to cause degradation	4	20	80
3	Legal protection	4	20	80
4	Accessibility	2	15	30
5	Population density	2	10	10
	Total		100	340

Table 10. Quantitative assessment final result

No.	Criteria	Score	Category
1	Scientific values	210	Moderate
2	Educational values	140	Low
3	Tourism values	160	Low
4	Risk degradation values	340	High

Table 11. Quantitative value classification (Guidelines for Assessment of Geological Heritage Resources Techniques, 2017)

Total Value	Scientific Assessment
<200	Low
200-300	Medium/Moderate
301-400	High

For the risk of damage in the study area, it has a high value of 340 because many human activities can unknowingly damage the main geological features in the study area, for example plantations, agriculture, and new land clearing.

The total scientific values (Table 3), educational values (Table 5), tourism values (Table 7), and risk degradation values (Table 9) obtained are presented (Table 10).

Based on the results of the quantitative assessment, the geodiversity potential of the Karya Murni area and its surroundings has moderate scientific value, has low education and tourism values and very high risk of degradation values. The same condition has been reported for Paleontological sites in Brazil (Dos Santos et al., 2016). This is in accordance with the classification contained in the following table 11. This can be used for research and educational opportunities to further understand the geographic processes of the planet as Geopark (Mehdioui et al., 2020).

CONCLUSION

The geomorphology of the research area consists of volcanic hills, denudational hills, Karst hills, and fluvial plains units. The rocks uncovered are composed of material ranging from the Eocene to the Holocene. These rocks consist of andesite lava, volcanic breccia, reef limestone, and alluvial deposit units. The structure formed in the study area consists of a normal fault, namely the Apitalawu Fault, which intersects the coral limestone unit.

Based on the results of the quantitative assessment, the geodiversity potential of the Karya Murni area and its surroundings is of moderate in terms of the scientific value, while low for educational value and tourism value and high degradation risk. However, at the present condition it has the potential of geodiversity in the area is useful for education and research only. Further development is needed to increase the potential for education and tourism purposes.

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OPPORTUNITIES FOR THE DEVELOPMENT OF CROSS-BORDER PILGRIMAGE TOURISM IN CENTRAL ASIA

Kuvonchbek TURAEV
Termiz State University, Economic and Social Geography Department, Termiz, Uzbekistan, e-mail: turaevq@bk.ru

Viktor FEDORKO
Secondary School No. 233 of the city of Tashkent, Tashkent, Uzbekistan, e-mail: viktor-f-89@mail.ru

Shukhrat KURBANOV
National University of Uzbekistan named after Mirzo Ulugbek, Economic and Social Geography Department, Tashkent, Uzbekistan, e-mail: qurbanov1977@mail.ru

Zarnigor TURAEVA
Termiz State University, Department of Interfaculties Foreign Languages, Termiz, Uzbekistan, e-mail: zarnigorturayeva95@gmail.com

Medetbay OTEULIEV[*]
Karakalpak State University, Economic and Social Geography Department, Nukus, Uzbekistan, e-mail: medetbay.oteuliev@gmail.com

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Abstract: There are wide and different opportunities to develop cross-border tourism in Central Asia. In this article it is examined the necessary conditions for the development of cross-border religious and pilgrimage tourism covering some regions of Uzbekistan and neighboring countries, for instance, Tajikistan, the Kyrgyz Republic, Kazakhstan and Turkmenistan. In this regard, information on the most promising areas of the region, the existing pilgrimage sites there is highlighted on the example of the Lower Amudarya region, the Upper Amudarya region, the Zarafshan region, the Middle Syrdarya region, and the Fergana Valley regions. The pilgrimage touristic routes along the five mentioned cross-border regions have been developed and a map on the relevant topic has been prepared. At the same time, the article examines various problems that restrictive factors for the development of cross-border religious and pilgrimage tourism in the studied regions.

Key words: cross-border tourism, touristic routes, islam, neighboring countries, recreation resources, historical sightseeings

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INTRODUCTION

Religious and pilgrimage tourism is one of the fastest growing directions of international tourism in the world. Asia, which is considered the center of most religions, is recognized as the largest region of religious tourism. According to UNESCO, "60 percent of the world's population believes in some religion, and this situation shows that there is a great potential for the development of international and domestic religious tourism". Therefore, in the process of further development of religious and pilgrimage tourism, it is necessary to evaluate the religious tourist resources of the regions, to develop special routes connecting them and to systematically form the necessary infrastructure for religious tourism.

The fact that the countries of Central Asia have a rich history and existence of holy places, religious shrines of who promoted islam and engaged with science of hadith such as Imam Al-Bukhari, Imam At-Tirmizi, Bahavuddin Naqshband, Khoja Ahmed Yassavi, Rabia Sultanbegim Najmuddin Kubro, Sultan Sanjar, Abu Said, Abulfayz, Asaf ibn Burhiya, Hazrat Ali and Ahmadshah Durrani's mausoleum indicates that the country has wide opportunities for the development of religious tourism. Transboundary is an important feature of the recreational and tourist potential of the Central Asia, including religious tourism resources. In this regard, various directions of tourism in the region, in particular pilgrimage tourism, can be developed on a large scale only on a cross-border basis (Fedorko, 2017). The opportunities for the development of the cross-border tourism industry in Central Asia are reflected by the following geographical factors:

1. The presence of a large natural-geographic integrity of a transboundary character, in particular, the presence of intermountain basins, river valleys and basins, delta plains with clear signs of the internal natural-historical unity of the landscape diversity and territorial structure;
2. Territorial nature use and interrelated types of cultural landscapes within transboundary natural and economic geocomplexes - presence of desert-pasture animal husbandry, irrigated and dry farming, mountain-pasture animal husbandry zones;

[*] Corresponding author

3. The presence of many archaeological, historical, cultural and religious monuments and shrines in the territories of the regional states;

4. Diversity of material and spiritual cultures of related ethnic groups of Central Asian peoples, and at the same time complex historical and regional unity, its wealth of cross-border resources for the development of ethno-cultural tourism;

5. An important condition for the activation of interregional cross-border touristic flows is the presence of many business, family and other personal contacts between residents of neighboring countries in the region. These circumstances can be considered as a very strong driving factor for the development of relevant types of cross-border tourism in Central Asia;

6. The countries of the region have an extensive international communication system that connects the bordering countries and their separate regions, which creates high infrastructural conditions for the development of the cross-border recreational and touristic industry (Fedorko, 2011; Fedorko and Kurbanov, 2019; Fedorko, 2022; Toraev, 2022).

It should be noted that in recent years, relations between Uzbekistan and neighboring Central Asian countries have been developing with very positive trends, and this process is causing to increase in the flow of tourists coming to our country. According to official statistics, 1,881,345 foreign tourists visited to Uzbekistan in 2021. Among these tourists, the share of citizens of neighboring countries, in particular Kazakhstan, Kyrgyzstan and Tajikistan, is quite high, and most of them visited Uzbekistan for the purpose of visiting to their relatives and pilgrimage.

That is why the development of pilgrimage touristic routes covering the border regions of Uzbekistan and neighboring countries has an urgent importance and wide prospects (Navruz-Zoda and Navruz-Zoda 2016).

The level of learning

In the world, social geographical locations dedicated to the organization of opportunities and problems of developing religious tourism are being developed (Nolan and Nolan, 1992; Prokopenko, 2007; Christov, 2003). Understanding of religious and religious tourism (Gupta and Gulla, 2010; Olsen, and Wilkinson, 2016; Griffin and Raj, 2018; Okhovat, 2022) in these communities, development of religious tourism, development of religious tourism, assistance in harmony with other developments, necessary infrastructure complexes for pilgrimage. Pilgrimage tourism is focused on keeping the region's business. Social geographical studies which are dedicated to the opportunities and problems of developing religious tourism and their territorial foundation are being developed in the world (Babkin, 2008; Pfaffenberger, 1983). It is focused particularly to the essence of the concepts of religious and pilgrimage tourism , assessment of religious tourism resources of the regions, justifying the possibilities of developing religious tourism in harmony with other types of tourism, designing of necessary infrastructure complexes to attract pilgrims, studying and forecasting the demand for religious touristic trips, to analyze the role of religious and pilgrimage tourism in the regional economy in these studies.

Alkhawaldeh (2022) extended the theories of planned behavior and perceived consumer risk during a crisis (e.g. Covid19) in the context of predominantly Muslim countries in his research. He noted that his study may also be the first attempt to integrate the role of perceived health risk as a moderator in the study of religious tourism.

Hrončeк et al. (2022) provided fundamental theoretical and methodological information on individual sacral tourism as an appropriate type of tourism during the COVID-19 pandemic. Individual (virtual) tourism represented a relatively modern segment of alternative - modern tourism types in the area of the medieval sacral landscape lost due to modern technologies, in the case of Koscelisko locality in Radoľa municipality (north-western part of Slovakia).

Collins-Kreiner (2018) discussed common themes across religions regarding pilgrimage tourism and identified four main objectives: describes the blurring of boundaries between pilgrimage and tourism and the various changes that have occurred in the study of pilgrimage in recent years, in order to draw conclusions about the "pilgrimage tourism nexus", they revisited three types of pilgrimage examples and explored the differences between the "old" paradigm based on the assumption that religious elements are at the core of pilgrimage and the results of recent research on secular models of travel, emphasized alternative and complementary approaches to explain the shift in boundaries.

The researchers who are in the fields of history and ethnography have a great role in the study of religious touristic objects, especially holy places and shrines in Uzbekistan (Fedorko, 2017; Saliev et al., 2011). In the recent period, the scientific analysis and design of cross-border touristic and recreational activities has become one of the main research areas of recreation and tourism geography. These problems are being studied regularly, especially in EU countries and Russia (Dragileva, 2006; Dunets, 2012; Kropinova, 2017; Golomidova, 2020). However, these works do not address the issues of cross-border religious tourism. Currently, the geographical basis of the development of cross-border tourism in the countries of Central Asia, including Uzbekistan, has not been studied sufficiently, and in this regard, several scientific articles of the authors can be cited (Fedorko, 2011; Fedorko and Kurbanov, 2019; Fedorko, 2022). These works explore the general opportunities and prospects for the development of cross-border tourism in the region, the problems of improving the transport system of the region in connection with the issues of intensifying cross-border tourism, as well as the possibilities for developing cross-border religious tourism for Orthodox Christians in the countries of the region. The issues of developing cross-border routes for Islamic religious tourism remain little studied. This article is devoted to this issue.

Aims and objectives

The purpose of the study is to analyze the possibilities of developing pilgrimage tourism in the cross-border regions covering some regions of the Central Asian countries (Lower Amudarya, Upper Amudarya, Zarafshan, Middle Syrdarya basins and Fergana Valley) and to develop pilgrimage touristic circle routes for cross-border regions, their sample programs and maps. Within the scope of the goal, the following tasks were defined:

- Justifying the scientific principles and criteria for the development of cross-border pilgrimage tourism routes covering Uzbekistan and neighboring countries, in particular, Tajikistan, the Kyrgyz Republic, Kazakhstan and Turkmenistan;

- To study the possibilities of developing pilgrimage tourism in 5 cross-border regions of Central Asia (Lower Amudarya, Upper Amudarya, Zarafshan, Middle Syrdarya basins and Fergana Valley) and to select the main pilgrimage touristic objects;
- Development of regional circle pilgrimage touristic route program and its map on the example of Zarafshan Valley;
- Determining the necessary measures to accelerate cross-border pilgrimage tourism in the Central Asian region.

MATERIALS AND METHODS

Studies show that five regions have the greatest resources for the development of cross-border religious and pilgrimage tourism in Uzbekistan and neighboring countries, including the Upper Amudarya region (which unites the Surkhandarya region, Khatlon region, the Hisar valley with the city of Dushanbe and its surroundings), Zarafshan region (Bukhara, Navoi, Samarkand regions and Penjikent and Aini districts of Sogd region), Middle Syrdarya region (Tashkent city and region, Turkistan region and Shymkent city), Fergana valley (Andijan, Namangan, Fergana, Sogd and Osh city and region) and Lower Amudarya region (Karakalpakistan, Khorezm and Dashoguz regions) (Fedorko and Kurbanov, 2019; Fedorko, 2011).In the article, we considered the flow chart of the methodology steps as follows (Figure 1).

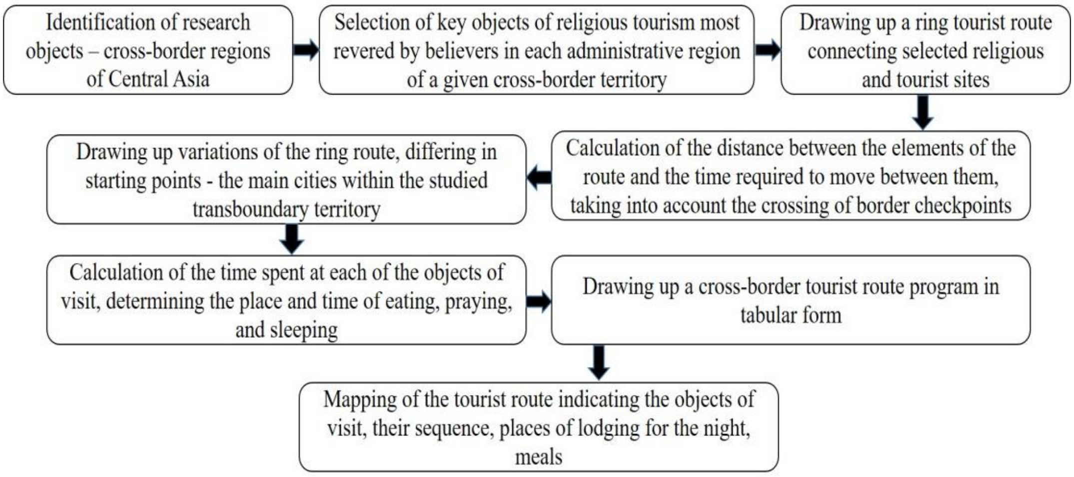

Figure 1. The sequence of research tasks

At the initial stage of the research, the pilgrimage sites in each cross-border region that are recognized and appreciated by the majority of believers were identified. During the determining the number of objects, the condition that the duration of the route does not exceed 4 days was considered. In our opinion, regional pilgrimage tourist itineraries should be relatively short-term (2-4 days), because the population most interested in pilgrimage is the middle-aged and elderly, and it is convenient for them that the duration of the trip should be as short and cheap as possible. At the same time, these routes should cover several pilgrimage sites and thus give pilgrims a broad idea of the religious tourism potential of the regions.

At the next stage, the distances between the selected shrines were determined by hours, and the core of the circle route within the cross-border areas was created. After that, cities in cross-border regions with a relatively large population and located in different parts of the territory were determined as the starting and ending points of the constructed circle route, and a particular version of the circle route was developed for each of them. This includes some factors such as the direction of travel from the starting point, the sequence of seeing the objects, the time required to reach from object to object and visit each object, the time and convenient place to eat, the places where there are suitable hotels for the night and the time to reach them, the time of pray and the suitable places for prayers. As a result, detailed hour-by-hour structured programs of regional popular pilgrimage tourist routes in 3 to 6 options for each cross-border area were developed, and a thematic map was created based on the program. These maps show each variant of the regional circle pilgrimage tourist route (based on the starting point), and the places of pilgrimage, travel routes, places to eat and stay are the special content of the maps.

RESULTS AND DISCUSSION

In the article, opportunities for developing cross-border pilgrimage tourism of Uzbekistan and neighboring Central Asian countries are revealed mainly on the example of the Zarafshan Valley, which stands out for its rich pilgrimage tourism potential within the region. Zarafshan Valley is located in the central part of the studied area.

It consists of three large tectonic and landscape-geographical divisions - the upper valley, which is administratively located in the Sogd region of Tajikistan, the middle valley, which covers the areas adjacent to the Samarkand and Navoi regions of Uzbekistan, and the plain-delta part (Bukhara and Karakol). Almost the entire area of the region, except perhaps the highest reaches of the river, has a rich and unique history, one of the cradles of the civilization of the nations of Central Asia. The tourist route, covering historical and modern cities of the region, reflects the rich cultural heritage of the Zarafshan basin with all its geographical and historical diversity (monuments of the Sogdian culture, the Somonids, the Timurids, the various dynasties of the rulers of Bukhara). There are many cultural monuments in the Zarafshan basin that are revered as religious pilgrimage sites, such as the madrasahs and mosques of Samarkand, Bukhara, Gijduvan, Penjikent, and of course the mausoleum of one of the greatest hadith collectors in history, the famous theologian Imam al-Bukhari, located in the village of Khartang, near Chelek, Samarkand province.

Table 1. A sample program of cross-border pilgrimage tourist routes created in the Zarafshan region (Source by the authors)
Route 1: Bukhara c. - Kogon dis. - Romitan dis. - Vobkent dis. - Shafirkon dis. - Gijduvan dis. - Karmana dis. - Nurota dis. - Payarik dis. - Samarkand c. - Nurabad dis. - Penjikent c. – Aini dis. - Samarkand c. - Bukhara c.

Day	Places	Type of vehicle	Plans	Daily plan program
Day 1	Bukhara city	A bus	Departure by 5.30	Meeting at the appointed place.
	Kogon district	A bus	05:30 – 06:00 06:00 – 06:40 06:40 – 07:00 07:00 – 07:30	Go to Bahavuddin Naqishband complex. Time to visit. Going to the shrine of Said Amir Kulol. Time to visit.
	Romitan district	A bus	07:30 – 08:30 08:30 – 09:00 09:00 – 09:20 09:20 – 09:50	Going to the shrine of Khoja Mahammad Boboy. Time to visit. Going to the shrine of Khoja Ali Romitani. Time to visit.
	Vobkent district	A bus	09:50 – 10:50 10:50 – 11:20	Going to the shrine of Khoja Mahmud Anjir. Time to visit.
	Shafirkan district	A bus	11:20 – 11:40 11:40 – 12:10 12:10 – 13:00 13:00 – 13:40	Going to the shrine of Khoja Arif ar Revgari. Time to visit. Lunch time. Afternoon prayer time.
	Gijduvan district	A bus	13:40 – 14:20 14:20 – 15:00	Go to Abdukholik Gijduvani shrine. Time to visit.
	Karmana district	A bus	15:00 – 16:20 16:20 – 16:50	Going to the shrine of Maulana Arif Deggarani. Time to visit.
	Nurata district	A bus	16:50 – 18:20 18:20 – 19:00 19:00 – 20:30	Go to Payarik district. Check into the hotel. Have dinner and return to the hotel.
Day 2	Nurata district	A bus	05:30 – 06:30 06:30 – 07:00 07:00 – 07:40	Have breakfast in the hotel Going to the "Chashma" complex Time to visit
	Payarik district	A bus	07:40 – 10:40 10:40 – 11:40 11:40 – 12:30	Going to the complex of Imam Bukhari. Time to visit. Lunch time.
		A bus	12:30 – 12:50 12:50 – 13:20 13:20 – 14:00	Going to the shrine of Makhdumi Azam. Time to visit. Afternoon prayer time.
	Samarkand city	A bus	14:00 – 14:20 14:20 – 14:40 14:40 – 15:00 15:00 – 15:40 15:40 – 15:50 15:50 – 16:20 16:20 – 16:50 16:50 – 17:30	Going to the mausoleum of Khoja Daniyor. Time to visit. Go to Shahi Zinda complex. Time to visit. Going to the shrine of Hazrat Khizr. Time to visit. Going to the shrine of Khoja Ahror Vali. Time to visit.
	Samarkand city	A bus	17:30 – 18:00 18:00 – 18:50 18:50 – 19:50	Going to the hotel Check into the hotel. Have dinner and return to the hotel.
Day 3	Samarkand city	A bus	05:30 – 06:30	Have breakfast in the hotel.
	Nurabad district	A bus	06:30 – 07:30 07:30 – 08:30	Going to "Hazrat Davut" shrine. Time to visit.
	Border post	A bus	08:30 – 10:10	Go to Jartepa border post.
		A bus	10:10 – 10:50	Time to pass Jartepa border post
	Penjikent city	A bus	10:50 – 11:20 11:20 – 12:00 12:00 – 13:00 13:00 – 14:00	Going to A. Rudaki complex. To visit. Lunch time. Afternoon prayer time.
	Aini district	A bus	14:00 – 16:30 16:30 – 17:10	Going to the tomb of Naqibkhan Tughral. Time to visit.
	Aini district	A bus	17:10 – 18:00	Go to the center of the district.
	Aini district	A bus	18:00 – 18:30 18:30 – 19:40	Check into the hotel. Have dinner and return to the hotel.
Day 4	Aini district	A bus	05:30 – 06:30	Have breakfast in the hotel
	Aini district	A bus	06:30 – 07:00 07:00 – 07:30	Go to Chashma shrine. Time to visit.
	Penjikent district	A bus	07:30 – 09:10 09:10 – 09:40	Go to Khoja Muhammad Boshoro complex. Time to visit.
	Border post	A bus	09:40 – 10:50	Go to Jartepa border post.
		A bus	10:50 – 11:30	Time to pass Jartepa border post
	Samarkand city	A bus	11:30 – 12:20 12:20 – 13:00 13:00 – 14:00	Go to the city of Samarkand. Lunch time. Afternoon prayer time.
	Bukhara city	A bus	14:00 – 18:20	Return to the place of pilgrimage to the city of Bukhara.

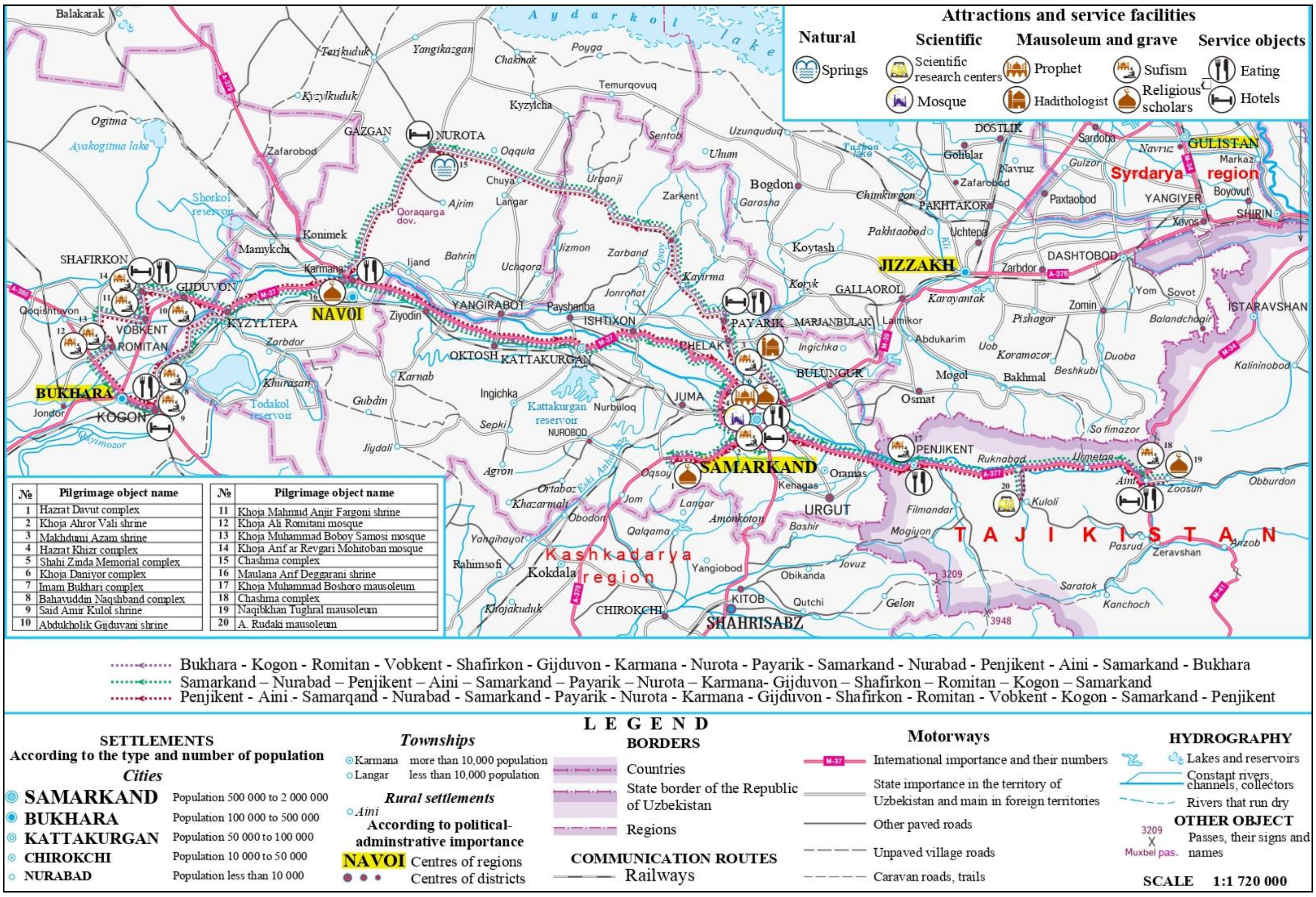

Figure 2. Cross-border pilgrimage tourism map of Zarafshan region (Source: by the authors)

This cross-border pilgrimage tourism route includes "Hazrat Davut" complex, "Khoja Ahror Vali" shrine, "Hazrat Khizr" complex, "Shahi Zinda" memorial complex, "Khoja Daniyor" complex, "Khoja Ishoki Vali" shrine, "Imam" shrine in Samarkand region; "Bukhari" complex, "Bahavuddin Naqshband" complex in Bukhara region; "Said Amir Kulol" shrine, "Abdukholik Gijduvani" shrine, "Khoja Mahmud Anjir Fargoni" shrine, "Khoja Ali Romitani" mosque, "Khoja Muhammad Boboy Samosi" mosque, "Khoja Shrines such as Arif ar Revgari Mohitoban mosque, Chashma complex in Navoi region; Maulana Arif Deggarani shrine, Khoja Muhammad Boshoro mausoleum, Chashma shrine, Naqibkhan Tughral mausoleum, A. Rudaki mausoleum in Tajikistan were selected (Akchaev, 2020). In this case, 3 options of pilgrimage routes have been worked out, they are given below: Samarkand, Bukhara and Penjikent (Figure 2 and Table 1).

Because of the limited size of the article, the programs of the variants of the regional circle pilgrimage tourist route along the Zarafshan Valley, starting from the cities of Samarkand and Penjikent, are not presented. The lower Amudarya transboundary region includes the modern and ancient (Khorazm and Sarikamish) deltas of the Amudarya within the administrative boundaries of the Republic of Karakalpakstan, the Khorezm region of the Republic of Uzbekistan, and the Dashoguz region of Turkmenistan. The presence of historical and cultural centers such as Khiva, Urganch, Beruni, Tortkol, Kokhna-Urganch, Tashkhovuz and other cities and rural settlements in this region is the main resource in the development of religious tourism (Abidova, 2018). Also, the closeness and interaction of the material and spiritual cultures of the Uzbek, Karakalpak and Turkmen ethno-regional groups in this region determines the religious tourist attraction of the region.

In the development of the tourist route, the shrine of Sultan Uwais, the Shrine of the Forgiving Father, the "Ichan Kala" in Khiva, the shrine of Yusuf Khamadoni, and the shrine of Najmuddin Kubro in Turkmenistan, the mausoleum of Sultan Ali, the mausoleum of Turabek Khanim, the mausoleum of Syed Ahmed, the Kutlugh Temur tower, the mausoleum of Sultan Tekesh, Il Shrines such as Arslan Mausoleum, Mazlumkhan-Suluv Mausoleum were selected. There are 3 versions of pilgrimage routes, which differ from each other according to the place of departure (starting point) of the route (Urganch, Nukus and Dashoguz cities). Duration of time on all routes is 3 days and a bus is chosen as the mode of transport. The route program includes the average amount of time to get to each object, to visit it, to pray, as well as to eat and spend the night, as well as convenient places.

The cross-border pilgrimage tourist route along the Upper Amudarya region includes Al Hakim at-Tirmizi shrine, Imam Termizi shrine, Sufi Olloyar shrine, (Djuraeva, 2018) Mavlonoi Zahid shrine, Ok Astana shrine (Toraev, 2022) in Uzbekistan and Balogardon shrine, Khoja Nakhshron mausoleum, Makhdumi Azam mausoleum, Hazrat Movlono complex, Mir Syed Ali Hamadani, Khodja Mashhad in Tajikistan. In this case, 4 options of pilgrimage routes have been prepared, the departure points from the following cities: Termiz, Denov, Dushanbe and Bakhtar (Turaev, 2020).

Cross-border pilgrimage tourism route of the Middle Syrdarya region includes in Uzbekistan the following sites were received: Zangi Ata shrine, Parpi Ata shrine, Hazrat Ali, Sheikh Umar Vali shrine, Shoabdumalik Ata shrine in Tashkent region; Hazrat Imam Complex, Center of Islamic Civilization, Chimir Ata shrine, Sheikh Zayniddin bobo shrine, Sheikh Khovand Tohur Complex, Suzuk Ata Complex, Khuja Allambardar Shrine, Khayrabadi Shrine, Sugalli Ata Shrine, Koylik Shrine in Tashkent city, Ibragim Ata Shrine, Akhmat Yassavi Shrine, Gauhar Ona Shrine, Arslan Bab Complex from the territory of the Republic of Kazakhstan. There 4 options of pilgrimage routes have been worked out, and the departure points are from the cities of Tashkent, Ohangaron, Turkistan and Shymkent.

The Fergana Valley is a large intermountain basin bounded by the Western, Central and Southern Tien Shans. Administratively, it is located in Andijan, Namangan and Fergana regions of Uzbekistan, Osh, Jalalabad and Botken regions of Kyrgyzstan, Sogd region of Tajikistan. The studied region is a typical transboundary territorial formation, where transboundary nature is inherent in the problem of resource potential, infrastructure and sustainable development (Nizamiev, 2005; Abdulahatov, 2008; Fedorko, 2011; Ovsyannikov and Yakunin, 2016). The high potential of the development of the cross-border recreation and tourism industry in the Fergana Valley is connected with a number of factors. First of all, this area is a vivid example of intermountain depth with different natural and economic zones, alternating with height and representing a very interesting object from the point of view of broadening the tourists' geographical views. Secondly, the Fergana Valley is a multi-ethnic region where Uzbek, Tajik and Kyrgyz cultures are geographically adjacent and historically connected. This predetermines the wealth of ethno-cultural tourist resources of the analyzed area. The diversity of ethnic cultures serves the diversity of the material and spiritual culture of the rural population along with the stratification of the natural and economic image.

Thirdly, there are several cities with a rich historical past in the territory of all three countries: Kukand, Margilon, Rishton, Andijan, Namangan, Chust, Kosonsoy (Uzbekistan), Osh, Uzgan, Jalalabad. (Kyrgyzstan), Khojand, Kanibodam (Tajikistan) and others. This is due to the fact that there is a great potential for the development of historical, cultural and religious tourism in the Fergana Valley.

Fergana Valley Cross-Border Pilgrimage Tourism Route includes some shrines in Uzbekistan territory such as Khoja Muhammad Valipirim shrine in Fergana region, Mirpostin Ota shrine in Andijan region, Qutayba ibn Muslim shrine, Fazilman Ota shrine, Muhammad ibn Hanafia Imam Ota shrine, Satkak saints shrine, Sir Poshota shrine, Offaq Khojam Podshah shrine, Kosonsoy Jame' Mosque, Mahdumi Azam Kosani Complex, Sultan Uwais Qarani Complex, Eleven Ahmad Shrine in Namangan region, Vafai Complex, Hazrat Shah Complex, Sheikh Muslihiddin Shrine, Hazrat Baboi Mausoleum in the Republic of Tajikistan, Uzgan Tower and Complex, complexes of Sulaimontov and Asaf Ibn Burkhia in the Kyrgyz Republic. At the same time, the article examines various problems that limit the development of cross-border religious and pilgrimage tourism in the studied regions at this stage.

CONCLUSION

Uzbekistan is closely connected with the border regions of the neighboring Central Asian countries through a system of various historical and geographical connections. This situation is also reflected in the high potential for developing cross-border pilgrimage tourist routes in the Central Asian region. In the course of the research, pilgrimage sites in the territory of neighboring countries and their possibilities to combine into single tourist routes with pilgrimage sites in Uzbekistan were studied, as well as the Fergana Valley (Andijan, Namangan, Fergana regions of Uzbekistan, Osh of Kyrgyzstan, Sogd regions of Tajikistan), the Middle Syrdarya region (Tashkent city and region of Uzbekistan, Turkistan region of Kazakhstan), Zarafshan Valley (Sogd in Tajikistan, Samarkand, Navoi, Bukhara regions in Uzbekistan), Upper Amudarya region (Khatlon region in Tajikistan and republican districts and Uzbekistan's Surkhandarya region) and Lower Amudarya region (Khorezm region in Uzbekistan, the Republic of Karakalpakstan and Dashoguz region in Turkmenistan) it was determined that they are the most promising areas. A 4-day cross-border public pilgrimage route along the Zarafshan Valley was developed and mapped in three options, differing by the point of departure (the cities of Samarkand, Bukhara, Penjikent). In our opinion, cross-border tourism in the countries of Central Asia should be developed on the basis of inter-state integration in the relevant sphere of economic, social and environmental interests of bordering countries, because such mutually beneficial cooperation leads to a number of positive consequences, including:

- the analysis shows that the opportunities for development of the studied sector of the economy at the scale of cross-border regions are much higher than at the border, and therefore the overall increase in the touristic attractiveness of the region and its separate parts;

-in addition to the territory of the neighboring countries, the recreation and tourism space of Central Asia, the attraction of regions that are distinguished by their unfavorable economic and geographic location, distance from the main centers and directions of recreation and tourism development, has been formed in the region to this day (for example, the upper reaches of Zarafshan, some parts of the Fergana Valley within Kyrgyzstan etc.);

- improvement of the general environment of interstate relations based on mutually beneficial cooperation in the field of tourism, if it becomes the main source of investments and budget revenues, will increase the objective interest of the regional states in the integration and long-term perspective;

- interregional tourism, getting to know the culture of neighboring peoples has a positive effect on the mutual understanding between the peoples of Central Asia, and the population, especially the young generation, serves to better understand the commonality of the past, present and future.

However, at the current stage, there is a complex of interrelated and often interrelated problems in Central Asia, which to one degree or another prevent the intensive development of cross-border tourism in the region. Among the main tasks that need to be solved in order to achieve the common goal, that is, because of the activation of cross-border tourism in Central Asia, we consider it appropriate to solve the following issues:

- creation of real integrated economic and political space;
- development of legal frameworks, strategic and conceptual frameworks for the development of cross-border recreation and tourism in the considered geopolitical region at the national and interstate level;
- development of infrastructure necessary for the development of tourism in the region, in particular, optimization of the network of railways and highways, as well as international airports;
- cooperation between local historians (geographers, historians, ethnographers) and regional economists in assessing the recreational and tourist potential of some regions of Central Asia and developing cross-border tourist routes;
- coordination of activities of tourist companies of neighboring countries of the region; • training of highly qualified professional personnel for recreation and tourism industry and cooperation of specialized educational institutions of various countries of Central Asia;
- ensuring the safety of vacationers and tourists with the joint efforts of the countries of the region;
- advertising of cross-border tourist areas of Central Asia in the world market of tourism services.

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CREATIVE AGRICULTURAL TOURISM MANAGEMENT MODEL FOR PRACHARATH BANG BAI MAI FLOATING MARKET, BANG BAI MAI SUB-DISTRICT, MUEANG DISTRICT, SURAT THANI PROVINCE

Kamon RUENGDET
Agricultural Land Reform Office, Bangkok, Thailand, e-mail: kamon.ruengdet @gmail.com

Sangrawee WITOONPAN
Suratthani Rajabhat University, Business Administration,
Management Sciences, Surat Thani, Thailand, e-mail: sangrawee.scm@gmail.com

Waritsara SOMKEATKUN*
Suratthani Rajabhat University, Business Administration,
Management Sciences, Surat Thani, Thailand, e-mail: w_somkeatkun@yahoo.co.th

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Abstract: This research aimed to: 1) study concepts and models of creative agricultural tourism management; 2) study factors affecting the behavior of creative agricultural tourism in Pracharath Bang Bai Mai Floating Market; and 3) propose a model for creative agricultural tourism management at Pracharat Bang Bai Mai Floating Market.The data were collected using a questionnaire asking 400 participants. A focus group, observation and interview were used to collect data and descriptive and inferential statistics were used for analysis. 1) The tourism management model is not yet aligned with the needs and behaviors of tourists. The condition of the community area is limited. There are quite a few people who will inherit the knowledge/local wisdom. Most of the activities focus on training rather than learning and exchanging experiences that are delivered to tourists. 2) Factors that affect tourism behavior are: personal factors, economic factors social/cultural factors, technology/innovation factors, public relations factor and tourism infrastructure factors. 3) Tourists are interested in the form of agricultural tourism routes that combine agricultural communities.The results of this research can be used as :1) a guideline for policy formulation to promote tourism and income distribution to the community; 2) a guideline for community resource and tourism management ;3) as a guideline for preserving and inheriting local wisdom from generation to generation; 4) a guideline for creating careers and creating value for the community from creative agritourism, and; 5) a role model for creative agritourism.

Key words: model, management, agritourism, creative tourism, Pracharat Bang Bai Mai Floating Market, Surat Thani Province

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INTRODUCTION

Thailand's economy has grown from agriculture, which is a very important foundation that determines the way of life, social culture and livelihood style of people who can live happily on the basis of living a life of sufficiency. Agriculture in Thailand has a variety of occupations. In addition, farmers have developed their own potential based on local wisdom in producing quality vegetables and fruits and raising animals, and can push agricultural products to become export products or become a world-class kitchen. In addition, the agricultural sector can be organized as an activity or form of agritourism service, allowing tourists to gain agricultural knowledge and appreciate the outstanding scenery of the community (Hall and Jenkins, 1998). Agritourism is therefore one of the activities in the rural development process that links agriculture and tourism, which will result in the restoration of natural resources and the allocation of economic and social benefits (Tubtim, Nillakan and Sumethokul, 2022), especially in developing countries. Therefore, creative agricultural tourism is another form of tourism that has a distinctive feature that allows tourists to experience the natural environment, way of life of agriculture that combines various activities as well as allowing tourists to enter. Traveling in agricultural communities to learn and gain experience in agriculture will bring income to the community and improve the well-being of the people in the community, especially the farmers who are the owners. Tourist attractions and nearby citizens can generate income from tourism for agritourism, which includes a trip to community areas, agriculture, agricultural gardens, herb gardens, farms, pets and aquaculture to appreciate the beauty and ability to experience and learn the way of life of rural people, customs, culture, traditions, forms of activities and a variety of agricultural occupations. Agricultural tourism is regarded as another form that tourists can enjoy and bring the knowledge back to apply or make a career. The most important thing is that tourists return to search, learn, understand, and be proud of the valuable agricultural profession under the concept, philosophy, body of knowledge, wisdom of the ancestors of Thai farmers.

* Corresponding author

Bang Bai Mai Community, Muang District, Surat Thani Province is a community full of trees that grow green on both sides of the canal that infiltrate the houses. Bang Bai Mai villagers bring trees and fruits on the island that are natural assets. It is brought together with folk wisdom, resulting in a living income from generation to generation. In addition, the community also has a center of faith from the Buddha statue of Luang Pho Khao Suk, which the villagers respect faith as well as a community that is aware of good health, which observed from the production of organic vegetables and fruits, causing Bang Bang. Bang Bai Mai is famous and well-known in Surat Thani Province. At the same time, the Bang Bai Mai Sub-district community has managed its abundant resources, especially natural resources, and developed it into an agritourism channel that can generate jobs and income for the people in the community as well, becoming a tourist attraction. It has been continuously popular both in Surat Thani province and people from other areas. Bang Bai Mai Community operates the Pracharat Floating Market. Bang Bai Mai in the form of agritourism for almost 5 years, each week there will be a large number of tourists coming to travel. However, it found that the current form of agritourism in the floating market is still unable to accommodate tourists sufficiently and is not suitable for certain groups of tourists.

The situation of the epidemic of COVID-19 during the past 2 years has greatly affected the service of the market. The researcher is interested in studying the behavioral analysis model for creative agricultural tourism in the case of Bang Bai Mai Pracharat Floating Market, Bang Bai Mai Sub-district, Mueang District, Surat Thani Province, using the community participation process. It will be a guideline for developing strategies to strengthen the community of Bang Bai Mai Subdistrict Mueang District, Surat Thani Province, as well as to allow tourists to experience the natural environment, the way of life of farmers with a combination of activities and bring knowledge back to apply or make a career in agriculture. Aside from this, it is to go back to search, learn, understand, be proud of agriculture, which is the distribution of income to local, as well as the use of information in the planning of agricultural tourism promotion of other tourist attractions.

LITERATURE REVIEW AND RELATED THEORIES

1. The concept of community-based tourism

Community-based tourism is a tourism that takes into account the sustainability of society, environment and culture where the community has the role of owning, setting the direction, and managing by itself. They also have the right to administer and educate visitors. The components are: 1) natural resources and culture; 2) community organizations; 3) management and; 4) learning (Ministry of Tourism and Sports, 2013). The management of community-based tourism must create participation in every step of management in a systematic way. Regulations and guidelines for preventing and solving problems may affect the community, sharing and distributing benefits thoroughly and fairly, and monitoring and monitoring actions to lead to improvement and development regularly (Angkun, 2009). Somkeatkun and Ruengdet (2020) said that the community-based tourism management model the community should be involved in tourism management throughout the process, especially natural resources. Cultural resources and local wisdom are indicators of the way of life and identity of the community. At present, this type of tourism is gaining widespread popularity and is considered an important tool in driving and elevating the community economy as well as generating income and strength for the community, as well as protecting the nature and culture of the community to continue. Arinta et all., 2023 said that the development of community-based ecotourism must be implemented in a management framework that combines communities and relevant agencies to achieve sustainable development, such as community cooperation in management and marketing. Promoting and supporting local activities, conservation and sustainable use of natural resources, and creating opportunities for local people to participate in development and decision-making.

2. Concepts and Theories about Agritourism

2.1 Agritourism Concept

Agritourism is tourism that uses agricultural activities as the main tourism resource that can attract tourists. The main goal is to generate income for farmers in the community and local people to participate in tourism development (Srisomyong, 2009). In accordance with Hao et al., 2020 tourism products proposed to tourists must be in accordance with the wishes of tourists, where tourists want good tourist attractions, and have tourist services that are in accordance with their wishes and have maximum service.

2.2. Agritourism Model

Na Songkhla (2011) has presented a model of agritourism where which type of tourism activities will be emphasized in each tourist destination. It depends on the type of traveler and nature of activities. The agricultural activities of that tourist destination are: 1) Agritourism activities in the form of a demonstration of tourist attractions emphasizing demonstration activities; 2) Agritourism activities in the form of Agritourism knowledge; 3) Agritourism activities in the form of selling community products and; 4) Agritourism as an introduction to agribusiness.

2.3 Principles of Agritourism

Agritourism is sustainable tourism. Focus on 3 fundamental components: 1) the quality of the tourist experience; 2) the continuity and sustainability of tourism resources; and 3) the balance of community and local participation in the management of tourism, tourism and the distribution of benefits to the local in order to set guidelines, policies and rules related to the management of tourism (Hao et al., 2020).

3. Creative Tourism Concept

Creative tourism is a new form that is appropriate and in line with the needs of today's tourists. Remoaldo et al., (2022) discussed creative tourism in line with the community development approach, using tourism as a tool to drive sustainability, providing opportunities for tourists to develop their own creative potential through participation in learning activities with real experiences in various activities of the lives of people in the community and organizing tourism activities harmoniously and related to culture in the form of experimental learning to obtain gaining experience and fun from existing and real things. According to González-Torres et al., 2021 tourist interest to visit is the tendency of tourists to visit a place they like or a place for vacation with the aim of carrying out traveling activities. According to Amaral et al., 2013 the interest of tourists to visit is the self-awareness of tourists to choose tourist attractions that are in accordance with the expectations and personal desires of tourists. These authors also said that entertainment is mainly the ability of destinations to entertain tourists. It involves how hosts treat tourists and how the destination features fulfilled tourists' emotional appeal. In the field of tourism, the concept of loyalty is mentioned in many scientific studies and is often affected by factors such as destination image, tourist satisfaction, and word of mouth (Li et al., 2021a; Li et al., 2021b; Ramseook-Munhurruna et al., 2015; Jalilvand et al., 2012; Chi and Qu, 2008; Prayag and Ryan, 2012) Praprom and Laipaporn, 2023 proposed that Betong has the potential to become a wellness tourism city, especially in terms of local food, beverages, Betong Hot Springs, and historical and community attractions. In addition, in order to strengthen and generate increased revenues, it is necessary to develop innovative tourism products and services, using innovation to create interesting and unique travel experiences.

4. Concepts and Theories of factors affecting tourism behavior

There are several important factors that affect the decision to buy travel products, both in terms of quantity and quality. Some of these factors are controllable and some difficult to control. Factors that affect changes include: 1) Demographic factors; Phiriyathanapat (2016) states that demographic analysis is concerned with the structure, size, change and distribution of the population in relation to social, economic and cultural factors, which is conform with the concept of Phimonsompong (2014) which has studied that the demographic factors comprising age, status, gender, race, nationality, occupation, income, education level, family and experience, which will affect the demand patterns and purchase volume of tourism products. 2) Economic factors; National and local economic conditions are important factors that cause different levels of consumer demand and affect the purchase of tourism products. In order to attract the main target customers, business operators need to develop different forms of services, products, marketing activities and facilities suitable for the conditions and status of the customer groups (Sanitchan, 2021). MacNeill and Wozniak (2018) stated that the economic factors play an important and decisive role in the business activities of enterprises. Specifically, economic growth rate, economic structure, and exchange rate are economic factors that often affect the operation of all organizations in general and the tourism industry in particular. 3) Socio-cultural factors; Society as a subunit of culture is another factor related to consumer's daily life and influences consumer's purchasing behavior. Social and cultural characteristics will shape ideas, tastes and attitudes in consuming tourism products (Sanitchan, 2021). 4) Technology and innovation factors; Nowadays, the basics of modern news technology are essential to everyone's daily life. Entrepreneurs must invest and develop their own businesses, especially in bringing technology and innovation into the operation of the tourism business, especially in terms of facilities and utilities, which will be an incentive for tourists to travel more (Yanopas, 2018). Similar to Chamboko-Mpotaringa and Tichaawa, 2023 indicated that the quality of service is an important factor in building customer satisfaction and confidence in tourism. Improving good service using the right digital marketing tools and platforms is an important aspect that travel marketers should focus on and thoroughly analyze. Adopting the right digital tools and platforms can help maximize returns. 5) Public relations factor; Nowadays, all kinds of information from the media is one of the factors in building trust, believing or not confident in making a travel decision that will help create more acceptance, knowledge, familiarity, resistance or curiosity which will lead to decisions for purchasing tourism products (Jittangwattana, 2012). 6) Tourism infrastructure factors are very important to success in the tourism competitive market, namely supporting the administrators of tourism areas and tourist attraction infrastructures, developing various tools for tourism and development processes in the area and hospitality. Potjanajaruwit (2023) proposed that the trust and performance of online services are related and have an impact on a business's market advantage. Businesses with reliable and efficient online services can increase their chances of retaining existing customers and attracting new customers. It also affects other aspects of the business such as building a strong business network to increase business opportunities with partners and competitors, learning within the organization to develop personnel knowledge and skills, increasing productivity. of business Creating knowledge and applying appropriate technology for business development and emphasizing business attitudes that emphasize creativity and use innovation to add value to the business. Hence, businesses should value the credibility of their online services website by developing a reliable security system and providing quality support services to their customers through the website. Similar to Khasawneh et al., 2023 indicate that the importance of considering user satisfaction and quality of online service systems by using digital marketing platforms and tools in business and establishing a stable IT infrastructure and reliable data quality. All of which will increase the efficiency and success of the business.

MATERIALS AND METHODS

This research aims to: 1) study the concept and model of creative agricultural tourism management by focusing on related literatures and articles; 2) study the factors affecting creative agricultural tourism behavior in Pracharat Floating Market, Bang Bai Mai Sub-district, Mueang District, Surat Thani Province; and 3) propose a creative agricultural tourism management model at Bang Bai Mai Pracharat Floating Market, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province. This research used a mixed method research approach consisting of qualitative and quantitative methods. The triangulation technique was used to confirm results. Objective 1 was to use content analysis to know the creative agritourism management model: a case study of Bang Bai Mai Floating Market, Bang Bai Mai Sub-district, Mueang District, Surat Thani Province by applying the concepts, theories, documents, and related research and related literature used. The samples of this research were: 1) 3 community leaders in the area; 2) 2 people in the area; 3) 3 local government agencies; 4) 2 tourism business operators in the area. Objective 2 was to use content analysis to know the factors affecting creative agricultural tourism behavior; a case study of Pracharat Floating Market, Bang Baimai Subdistrict, Mueang District, Surat Thani Province, using percentage, mean and standard deviation to assess factors affecting creative agritourism behavior. Questions were created for each aspect according to Likert's method and opinions were interpreted by considering the mean according to Boonchom Srisaard's criteria (Boonchom Srisaart, 2018). Section1involved general information of respondents on income. Section 2 involved information on tourism behavior of the respondents, the issue of participants in making a decision to travel, how to know the information about Pracharat floating market attractions from which sources, who travel with whom, how much does it cost to travel on average per time. and how much is the average cost of purchasing goods/services each time and Section 3 involved factors influencing the decision to travel to Pracharat Floating Market. In terms of accessibility and attractions and services were used in the analysis. The samples of this research were tourists who travel to visit Pracharath Floating Market, Bang Bai Mai, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province. Due to the study population being large and the exact scope of the population being unknown the research team chose to use a purposive sampling method by using Taro Yamane's prefabricated table Non-probability Sampling at a confidence level of 95 percent at a level of error of 5 percent (Yamane, 1976). The sample size is equal to 400 people. Objective 3 was to use content analysis to study tourist behavior and create a model to analyze creative agricultural tourism behavior. A case study of Pracharat Bang Baimai Floating Market, Bang Baimai Sub-district, Mueang District, Surat Thani Province, by using percentage, mean and standard deviation, suggestions from focus group and f-test to assess tourist behavior and create a model to analyze creative agricultural tourism behavior.

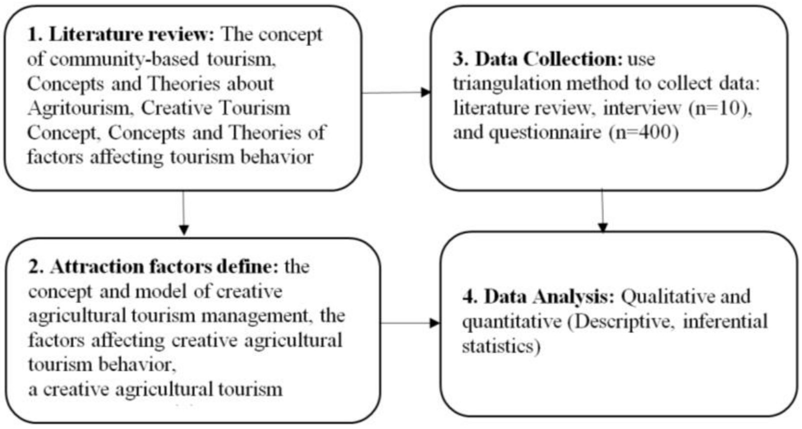

Figure 1 Research Methodology Steps

RESULTS AND DISCUSSION

1. Concept and management model of creative agricultural tourism of Pracharat Floating Market, Bang Bai Mai

At present, the creative agricultural tourism management model of Pracharat Bang Bai Mai Floating Market is still in line with the needs and behaviors of tourists that have not changed much from before. As well as the context of the area of the community of Bang Bai Subdistrict, there are limitations in the distance of the village, because most of the locations of each village have a very far distance, resulting in difficulty to bring tourists to travel in each area and difficulty to organize activities continuously to support the tourism of tourists. In addition, there are quite few people who will inherit the knowledge/local wisdom, causing the community to be unable to organize effective community-based learning activities. Most of the activities that are organized focus on training rather than learning and sharing experiences that are delivered to tourists. Some infrastructure issues are still problematic for the management of creative agritourism. In the management of most tourist attractions, community leaders will act as the main people with responsibility. There will be integration with relevant sectors in the management of tourist attractions. There is a clear joint tourism management such as shop decoration, solid waste and sewage management. Activities include, providing services for tourists, services for selling products, food, beverages, ancient food, boat services to see the way of life of villagers along the canal and the environment along both sides of the canal, etc. Community leaders have the idea to develop the operational process from the original under the strength of the community to manage creative agritourism in the community to effectively respond to the needs of tourists and be a role model for other communities by introducing activities that can enhance learning. Exchanging experiences to be defined as activities for tourists to experience, learn and receive experiences / local traditional wisdom that is the identity of the community from knowledgeable people / local sages truly under the good management system of the community online public relations can reach the target group quickly.

2. The factors affecting creative agricultural tourism behavior A case study of Pracharat Floating Market, Bang Bai Mai, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province results are shown in Figures 2-3

2.1. The opinions on the creative agricultural tourism management model of the Pracharat Floating Market, Bang Bai Mai

The form of creative agritourism management of the Pracharat Bang Bai Mai Floating Market of the respondents overall was found to be at a high level. Organize a creative agricultural tourism management model of the Pracharat floating market Bang Baimai was at the highest level, namely the knowledge of creative agricultural tourism form affecting travel; Followed by systematic study, collection and categorization of various activities and attractions in the community, getting information about creative agritourism forms and getting information about tourist attractions, respectively. From Figure 2, respondents participated in tourist attractions at the Pracharat Floating Market, Bang Bai Mai, with most participants on the issue of natural resource and environmental conservation (50.0%), followed by agricultural awareness (30.8%), inheriting the culture and way of life of people in the community (16.8%) and create income for people in the community (2.5 %).

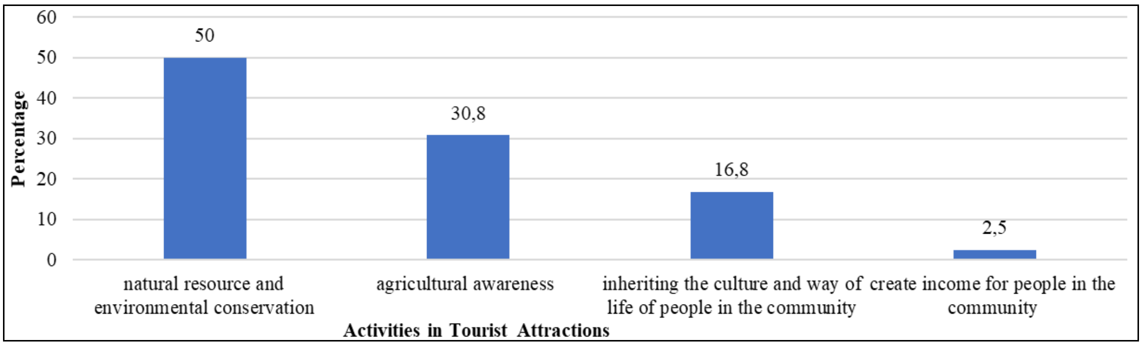

Figure 2. Respondents are involved with tourist attractions

2.2. Information Needs and Creative Agricultural Tourism Management Models of Pracharat Bang Bai Mai Floating Market

From Figure 3, most respondents choose a boat ride/walk through the farm (72.5%), purchasing fresh vegetables and fruits (80.8%) and interested in the form of creative agricultural tourism routes of the Pracharat floating market, the integrated agricultural model with agricultural communities (80.5%). Therefore, creative agricultural tourism information of the Pracharat floating market should be prepared in the form of a mobile application (97.8%) and there will be people downloading the said application (93.3%) and there should not be a fee for downloading the said application (60.8%). The information that should be contained in the first 3 applications is the name of the place (83.8%); history (76.5%) and location (75.5%) and Facebook related agencies should be used in public relations mobile application (91.5%). In the case of creating a mobile application, the majority of the respondents had the highest level of opinions on the issues, namely the issue of tourists being able to plan their trip more efficiently, followed by the issue of tourists getting more convenience and the issue of tourists being able to make a decision to travel easier. The respondents who had opinions at a high level included the issue of tourists traveling more and the issue of tourists recommending friends, relatives and the general public to use this application respectively.

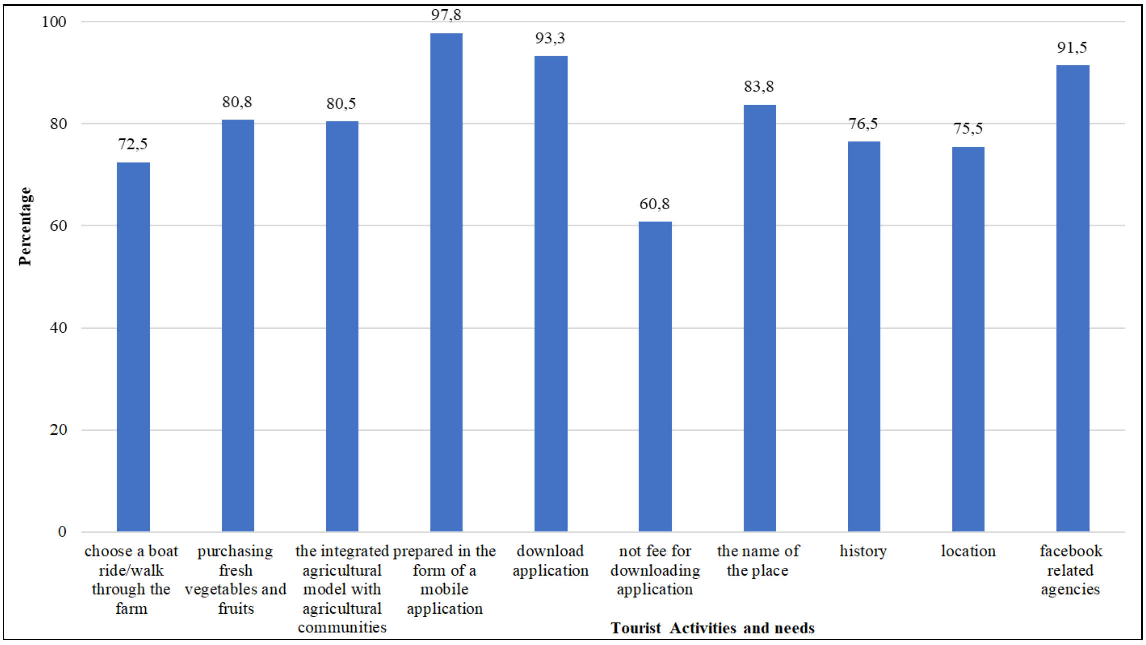

Figure 3. Information needs and creative agricultural tourism management models

3. Regarding the Proposal of a creative agricultural tourism management model For Pracharat Bang Bai Mai Floating Market, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province, it was found that:

3.1. Tourism Infrastructure

1) The opinion level of the respondents' decision to choose to travel. Accessibility and tourist attractions were at high level,

mean = 3.41, standard deviation = 1.02 and considering each item found that most of the respondents had opinions on the decision to choose to travel in terms of accessibility and tourist attractions at a high level, such as transportation and convenient access to tourist attractions. The distance is not far from the city of Surat Thani. There is a sightseeing cruise along the river. It is a beautiful, clean, and tidy tourist destination. There are shops selling a variety of products, followed by clearly signposts. Including instructional and informative signs. There is an information point for tourists. There are appropriate facilities such as toilets, parking lots, garbage bins, and there are interesting community agricultural learning resources.

2) The opinion level of the respondents' decision to choose to travel. The service aspect was at a high level, mean = 3.46, standard deviation = 1.00, and when considering each item, it was found that Most of the respondents had a level of opinion on their decision to travel. service at a high level, including offering a cruise service to admire the beauty of the river. There are shops selling goods, food, desserts, a variety of souvenirs, and reasonable prices for goods and services, followed by useful travel information services. and have appropriate service facilities such as restrooms, parking. To conform with Maneerat and Chalermpol (2017) studied of agritourism management models a survey of problems and limitations in the development of agricultural tourism on the Mae Rim - Samoeng route, Mae Rim District, Chiang Mai Province found that whenever tourists traveled to travel ach tourist would like to be informed of that tourism information for consideration and decision making and to motivate them to want to travel at that place. Related tasks are an important part that will help in promoting the tourism market. Applying technology to advertise on the Internet is another channel that allows tourists to easily access information and news.

3.2. Tourism activities

1) The opinion level of the respondents' decision to choose to travel: The expectations towards tourist attractions were at a high level, mean = 3.64, standard deviation = 1.08, and when considering each item, it was found that Most of the respondents had a level of opinion on their decision to travel. Expectations towards tourist attractions were at a high level, for example, seeing, tasting, and shopping for products, food, desserts, and souvenirs, followed by convenience and safety in traveling, take a cruise to see the scenery along the river, learned the way of life of people in the community to conform with Somkeatkun, Ruengdet and Boonkong (2018) who have studied the subject Creation of creative tourism routes in Chaiya District, Surat Thani Province. There is still a desire to learn the way of life of the people in the community. as well as wanting to participate in various activities of tourist attractions that have been visited and also conform with Khianpanya (2019) who said that the factor that attracts tourists to travel in the area is the resource factor, facilities convenience and quick access to tourist attractions for opinions on the decision to choose to travel in terms of expectation towards tourist attractions at a medium level, namely gain more knowledge in agriculture to conform with Treesakorn and Chianwatanasuk (2022) and Songserm (2018) who said that UNESCO Creative Agritourism emphasizes on organizing tourism activities that tourists can learn about art, culture and identity of the place through direct experience and harmonious participation with the owner of the culture, including the participation and interaction between the community and tourists to create sustainability in community life and to gain experience from what exists and is real in the area.

2) Analyze the information needs and creative agritourism management model of the Pracharat Bang Bai Mai Floating Market of the respondents.

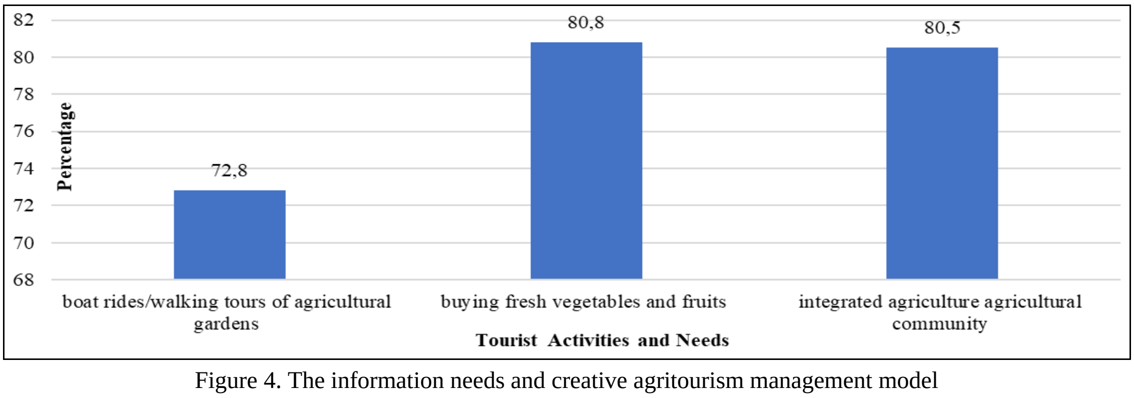

Figure 4. The information needs and creative agritourism management model

From Figure 4, most participants chose boat rides/walking tours of agricultural gardens (72.5%), buying fresh vegetables and fruits (80.8%) and interested in the form of creative agricultural tourism routes of the Pracharat floating market, Bang Bai Mai, integrated agriculture agricultural community (80.5%) to conform with Somkeatkun, Ruengdet and Boonkong (2018) who have studied the creation of creative tourism routes in Chaiya District, Surat Thani Province. It was found that tourists who came to travel, besides just for leisure, also wanted to learn the way of life of the people in the community as well as wanted to participate in various activities of the tourist attractions that they had visited by using the information obtained from the research to create a database of various places as well as creating a map by classifying and creating creative tourism routes into 4 routes that tourists can participate in activities: 1) Food creative tourism routes; 2) Nature creative tourism routes; 3) Buddhism creative tourism routes; and 4) Tradition, culture and history creative tourism routes.

3.3. Management of tourist attractions

From the analysis and synthesis of data from small group meetings, in-depth interviews, questionnaire collection and observation this can be summarized as a guideline for constructing a creative agritourism management model for Bang Bai Mai Pracharat Floating Market, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province as follows:

Table 1. Guidelines for the development of a creative agritourism management model in tourist attraction Management for Bang Bai Mai Pracharat Floating Market, Bang Bai Mai Subdistrict, Mueang District, Surat Thani Province

Current management	Future management	Methodology for future management
1. Manage markets and tourism mainly by people in the community.	1. Create a learning point for preserving knowledge and local wisdom, such as making vinegar from Nipa palm, Nypa sugar and Nypa honey etc.	1. Find local philosophers/knowledgeable people in the community. 2. Support materials and equipment necessary for knowledge transfer such as information boards, pavilions/small buildings, etc.
2. There is integration with related sectors such as people in the community, subdistrict adminis-trative organizations, schools, temples, etc.	2. Conserving the environment by producing containers from leaves/ leaves and preservation of local wisdom.	1. Training to provide knowledge from relevant agencies. 2. Self-study.
3. There are clear rules and regulations for joint tourism management such as shop decoration, solid waste management and various waste.	3. Connecting tourism in the community, including markets, boat trips, accommodation such as Rim Wang, Cinnamon Ruen, Rim Lom Yen, Rim Bang, Ananta, Ruen Bang, etc.	1. Consultation between relevant sectors by clarifying/explaining the benefits that will be received both short-term and long-term, especially the benefits that will occur to the people in the community.
4. There are joint public activities such as cutting stems from collecting garbage in the canals, etc.	4. Weekly market data analysis to promote and support tourism.	1. Collect marketing information regularly. 2. Analyze data together to determine guidelines for driving operations.
5. Promote participation of people in the community in managing tourist attractions together.	5. Accelerate public relations to create market awareness and community tourism to be more widely known.	1. Public relations through various social media such as Facebook Line, etc., and update information to be current.

3.4. **Tourist services**

1) The level of opinions towards the creative agricultural tourism management model of Pracharat Floating Market of the respondents as a whole was found to be at a high level, mean = 4.16, standard deviation = 0.71 and when considering each case, it was found that most of the respondents had opinions on the creative agricultural tourism management model of the Pracharat floating market Bang Baimai was at the highest level, namely knowledge of creative agricultural tourism form affecting travel, followed by study, collection and categorization of activities and tourist attractions in the community in a systematic way. Acknowledgment of creative agricultural tourism forms and getting to know tourist attractions as a whole conformed with Somkeatkun, Ruengdet and Boonkong (2018) who said that the creation of creative tourism routes in Chaiya District, Surat Thani Province found that tourists who come to travel, besides coming to relax, also want to learn the way of life of the people in the community as well as want to participate in various activities of the tourist attractions that have been visited by use the information obtained from the research to create a database of places as well as create a map and create a creative tourism route.

2) Analysis of information needs and creative agritourism management models of Pracharat Bang Bai Mai Floating Market showed the majority of respondents choose to provide information on creative agricultural tourism of the Pracharat Floating Market Bang Bai Mai in the form of a mobile application 97.8% and there will be people downloading the said application 93.3% and there should not be a fee for downloading the said application 60.8%. The information that should be contained in the first 3 applications is the name of the place. at 83.8 percent history 76.5% and location 75.5% and Facebook related agencies should be used in public relations Mobile application 91.5%, which conforms with Somkeatkun, Ruengdet and Boonkong (2018) who have studied creation of creative tourism routes in Chaiya District, Surat Thani Province as well as wanting to participate in various activities of tourist attractions that have been visited by using the information obtained from the research to create a database of places as well as creating a map by classifying and creating creative tourism routes as shown in Figure 5.

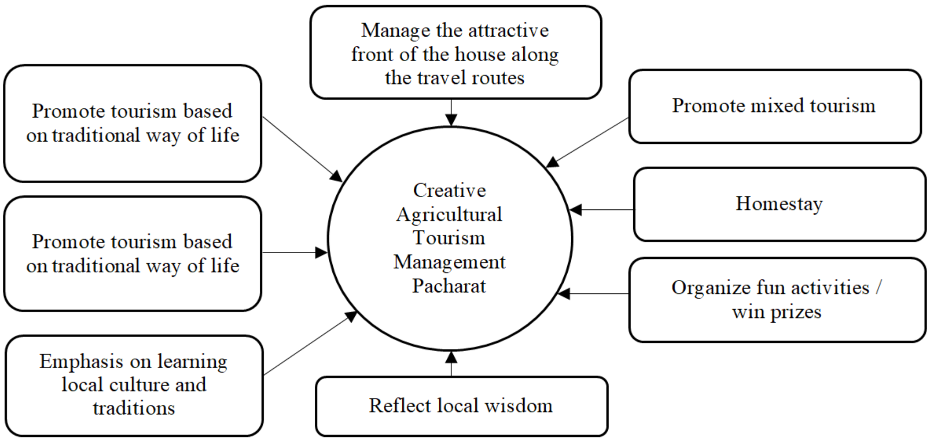

Figure 5. Creative Tourism Management Model Pracharat Floating Market, Bang Bai Mai

CONCLUSION & DISCUSSION

The strength of the community is a very important mechanism for developing and managing tourism in order to effectively meet the needs of tourists and be a role model for other communities of learning by bringing activities that can promote learning and exchanging experiences is defined as an activity for tourists to experience, learn and gain experience/local traditional wisdom that is the identity of the community from knowledgeable people/local sages, under good management of the community and able to reach target groups quickly. The results conform with Mulyani et al., (2022) who found that the position of tourism awareness in the community was hold and maintain by market penetration and product development strategies. Community have to have the professional management of tourist community leading to increasing the number of tourist visits. The leader of the community must be able to optimize the resources they have to set activities and develop a tourist community in the area.

Factors affecting the creative agricultural tourism behavior were gender and education level. Most of the tourists earn more than 30,000-baht, travel expenses less than 500 baht per trip, spent 500-1,000 per trip baht, families involved in the decision making, and get information from family/friends/acquaintances. The infrastructure must be convenient, fast and safe, allowing tourists to access tourist attractions easily and satisfactorily such as transportation, parking and toilet which related to Ha et al., (2022) who stated that the economic, infrastructure, integration, politics have positive effects on both tourists' visit intention and product purchase intention. Moreover, the resource has positive influences on tourists' visit intention but does not have an effect on purchase intention. The accessibility and availability of facilities in a tourist site are one of its attractions (Herat et al., 2015). However, Rahim et al., (2022) found that the relationship between the natural environment, cultural and historical environment with tourist destination satisfaction had a high positive relationship, but the infrastructure factor has low positive correlation with tourist destinations satisfaction. The place is clean, beautiful, tidy, had shops selling a variety of products and reasonable prices which will result in sustainable community tourism. This related to Khuong and Nguyen (2017) who stated that travelers of all types are getting more sensitive to dirty circumstances at their various tourist sites. As a result, tourism is diminishing in certain regions that have recently been quite popular due to environmental issues.

The aforementioned factors have resulted in the impression of tourists returning to visit again, resulting in community tourism to continue the cultural preservation of the environment and natural resources to remain abundant, make the community stronger, people in the community have more careers and incomes, as well as help reduce inequality at the community level. They are related to Arinta et al., (2023) who found that tourism is one of the most important industries because it can create jobs and economic development. In addition, the attraction must be a single business, under a single management, so that it is capable of answering the economic questions on revenue, employment etc" (Fyall et al., 2022).

Most participants both from interviewing and asking questionnaire guidelines for development of creative agricultural tourism model have similar opinions as follows: expanding the tourist group, increasing travel frequency, using technology to facilitate travel, organizing activities allowing tourists to experience local life for learning, having fun and participating in cultural revitalization and passing on to inheritance, as well as helping to preserve the environment to remain with the community for future generations to have resources that can be used sustainably in the future.

The development of a model for creative agricultural tourism management in Bang Bai Mai Pracharat Floating Market to become a community floating market with a creative agricultural tourism model must combine the strengths of the Bang Bai Mai area and various contexts, such as: creative agricultural tourism, creative agricultural entrepreneurs, creative agricultural community, activities/creative agricultural products and creative agricultural communication in order to add value to the existing resources in the community for maximum benefit, whether it is natural resources or culture, bringing innovation and creativity into the form of agritourism activities, new tourism products or services through cooperation from both entrepreneurs and communities that can create participation, learning and increase experience skills for tourists.

Government agencies involved in the tourism sector in Surat Thani Province and academics with experience in tourism in Surat Thani Province should promote, support and revitalize creative agritourism to become unique and desired by tourists, with an emphasis on supporting knowledge and necessary factors, build the capacity of the cooperation network of tourism and operators in the area. In addition, cooperation between local tourism organizers, domestic and cross-border tenders, and networking also offers opportunities for local bodies for sustainable tourism development. It is important for the institutional market to accurately assess its own role in rural tourism (Darabos et al., 2022; Priatmoko et al., 2021) and plan development based on synergy with their network of relationships. The development of a creative agritourism model requires preparation in terms of infrastructure and public relations for tourist attractions by encouraging local people to recognize, remember and be proud of the community's identity. Creative agritourism for new generation in the area.

Limitation of the study

This research found the development of a creative agricultural tourism behavior model. This is a pattern that arises from small group meetings. questionnaire collection and observations of stakeholders and tourists who come to visit Bang Bai Mai Pracharat Floating Market during the outbreak of COVID-19. If applied after the COVID-19 epidemic, there may be some factors in the behavior of tourists that may change. Therefore, in order to raise the level of sustainable tourism for the next research issue, the model derived from the This research is used in real life to confirm that the model is still effective and suitable for the current situation.

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original draft preparation, S.W.; writing - review and editing, R.K., S.W. and W.S.; visualization, S.W.; supervision, R.K., S.W. and W.S.; project administration, R.K., S.W. and W.S.. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest: The authors declare no conflict of interest.

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THE IMPACT OF TAXES ON TOURISM BUSINESS (IN THE EXAMPLE OF SAMARKAND, UZBEKISTAN)

Bahodirhon SAFAROV*
Department of Digital Economics, Faculty of Human Resources Management,
Samarkand State University, Samarkand, Uzbekistan, e-mail: safarovb@rambler.ru

Ahmadjon TANIEV
Department of Accounting and banking, Faculty of Economics, Samarkand Branch of Tashkent
State University of Economics, Samarkand, Uzbekistan, e-mail: taniyevaxmadjon@samdu.uz

Bekzot JANZAKOV
Department of Food and Agricultural Economics, Faculty of Economics, Samarkand Branch
of Tashkent State University of Economics, Samarkand, Uzbekistan, e-mail: becajaja@gmail.com

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Abstract: This study aims to analyze the impact of taxes on tourism business entities in Samarkand region, Uzbekistan. Taxes play major role in the redistribution of income in all sectors of economy including tourism. Previous researches illustrated that tax rates significantly affected competitiveness of destination and thereby impacted long-term development of tourism destinations. We analyzed the performance of 30 tourism companies and found out that the volume of own capital and tax burden significantly affected the entities' profitability. Also, we investigated seasonal dynamics of prices and number of tourist visits in the example of a relatively competent hotel and found that taxes had no significant effect on profit loss.

Key words: tourism, investments, taxes, demand, market, tax burden, tourism destination

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INTRODUCTION

Taxes in tourism have been a subject of interest in the academic literature, as they play a crucial role in shaping the tourism industry and its various dimensions. The research carried out by Deloitte and Touche (1998) illustrated that higher tax burden significantly reduced hotel and other tourism infrastructure's revenues, also change in tax rate turned out to have an effect on tourists' decision to make a trip or not. In general, taxes play a significant role in the tourism industry, both from the perspective of tourists and businesses operating within the sector. Some key aspects of the role of taxes in tourism may include revenue generation, supporting competitiveness, environmental and cultural conservation.

Taxes on tourism-related activities, such as hotel stays, transportation, and attractions, generate revenue for governments. This revenue can be used to fund infrastructure development, public services, and promote tourism itself through marketing campaigns and initiatives. Also, taxes can affect a destination's competitiveness within the tourism market. High taxes on tourism-related services can make a destination less attractive to visitors, as it increases the overall cost of travel. Competitiveness is crucial for attracting tourists and maintaining a thriving tourism industry.

Moreover, taxes on tourism can have a direct impact on the economy. The tourism sector often generates employment opportunities and contributes to the local economy (Ilieș et al., 2022). Tax revenue from tourism can support economic growth, job creation, and investment in infrastructure, leading to increased prosperity in the destination. Governments may also allocate tax revenue to develop tourism-related infrastructure, such as airports, roads, ports, and public facilities. These investments can enhance a destination's appeal, improve visitor experiences, and attract more tourists in the long run. Some destinations impose taxes specifically aimed at environmental conservation and sustainability initiatives. These taxes can fund projects focused on protecting natural resources, preserving ecosystems, and promoting sustainable tourism practices. By discouraging unsustainable activities through taxation, governments can encourage responsible tourism.

Taxes can also support the preservation and promotion of cultural heritage. Governments may impose taxes on specific cultural activities or attractions and allocate the revenue to preserve historical sites, museums, traditional festivals, and other cultural assets. This ensures the sustainability of cultural tourism and helps protect a destination's unique identity.

It is also important to note that taxes can serve as a regulatory tool to manage tourism activities. Governments may impose taxes to control visitor numbers, manage overcrowding, or regulate certain types of tourism that may have negative impacts on local communities or the environment (Ilieș et al., 2022). Such taxes can help strike a balance between tourism growth and sustainable development. Forsyth and Dwyer (2002) divided taxes into two types, namely

* Corresponding author

general tax and special differential taxes. In their opinion, general taxes are imposed on the offer of tourist services and goods. While the total taxes are imposed on tourism enterprises, tourists and tourism agents pay these taxes. At the same time, there are also special taxes in the tourism industry, which are usually imposed on a special tourism product or its components or tourism service providers. There are two important aspects of special tourism taxes, the first being that these taxes are imposed in conjunction with general taxes on the industry, and the second being that in many destinations the base of special tourism taxes exceeds the total tax base. In developed countries, taxes can be set at the national, and local levels. Therefore, the tax burden may also vary depending on the region.

Due to coronavirus pandemics, government of Uzbekistan provided tax exemptions for tourism companies in the forms of tax "vacation", tax deductions, and investment tax relief (including within the free tourism zone). The volume of tax benefits amounted to 35,482.5 million soums in that period (Statistical Committee's data, 2021).

In the course of our research, we tried to determine the impact of factors such as the average depreciation, cost, taxes on tourism services, equity of enterprises, and qualifications of employees on the effectiveness of income from tourism services, the fixed assets of 30 tourism enterprises operating in Samarkand region. Cost efficiency is important in the fair distribution of tax burden. High efficiency should provide the basis for an increase in the volume of special taxes as well.

The sufficient size of taxes directly affects the income of the state budget and makes it possible to allocate money to various social issues. The ideal tax system should increase revenues at the state level, but do so without affecting economic activity. In order for the tax range to work well, it is desirable to have a large number of large enterprises in the economy. Because employees who work in large enterprises are confident that they will remain in their work for a long time, they will eagerly pay income taxes. At the same time, in order to create an effective tax system, it will be necessary to work with qualified working personnel in the tax departments. For example, the implementation of the digitalization of tax bases will largely depend on qualified specialists. In addition, it is considered important to have accurate statistics for optimal tax rates to be established. But in practice, the collection of accurate statistics can be a challenge, especially in the service sector (Ilieș et al., 2021). Taking into account all the income of the population, increasing the burden of taxes as income increases, is difficult to carry out in practice. Entities that operate in the field of tourism seek to hide income from tax inspectors, however, an increase in the volume of taxes can be achieved if the mechanisms for determining "hidden" income are correctly established (Stoilova, 2017).

The traditional idea that income taxation is more efficient than consumption taxation is partly because income tax reduces the taxpayer's ability to save by including elements of both the labor tax and the capital tax. Another problem in the choice between income taxation and consumption taxation involves their impact on capital. Traditionally, taxation of consumption was considered more regressive (more difficult for the poor than for the rich) than taxation of income. Even this thought does not always justify itself (Brida et al., 2019).

As for import taxes, the tax reduction increases the competition of foreign enterprises. While reducing the protection of domestic industry from foreign competition will be the result or goal of the trade liberalization program, the reduction in budget revenues negatively affects the economy. In rare cases, the policy of raising income tax (due to its negative impact on investments) is considered a viable option (Forsyth and Dwyer, 2002).

Data from developed and developing countries show that the ratio of income and consumption taxes in developed countries has consistently been more than twice the ratio in developing countries (Stoilova, 2017) (in comparison to developing countries, developed countries generate twice as much income tax proportionally than a consumption tax). Also, the data shows a significant difference in the ratio of income tax from legal entities and income tax from individuals. Developed countries collect income taxes from individuals about four times more than corporate income taxes.

When distributing resources, it is necessary to ensure that the design of the tax system in the country is as transparent as possible, minimizing interference in the distribution process. The system will also be able to improve its efficiency, if it is managed through rules that are executed in a simple and transparent administrative sequence (Stoilova, 2017).

LITERATURE REVIEW

One of the approaches states that the taxation is determinant to the investment, thereby, is harmful to economic growth, as taxation prevents individuals or businesses from creativity and deprives them of rewards. So, supporters of this view, such as Judd, recommend lower tax in order to encourage people to be creative (Judd, 1985).

Furthermore, Engen and Skinner (1996), for instance, claim that taxation can affect negatively on economic growth through five channels. Moreover, Romer and Romer (2010) argue that taxation sustains the economic growth and strengthens the global competitiveness, provides stable and predictable fiscal circumstances, consequently, helps to accumulate funds to finance the social and physical infrastructural needs, and ensures good governance through strengthening the accountability of government. Studies have explored the relationship between taxation policies and tourism competitiveness. For example, Liu and Var (1986) found that higher taxes on accommodation services can negatively impact tourism demand and destination competitiveness. Similarly, Kim and Tse (2007) observed that high tax rates on tourist spending decrease destination competitiveness. These findings highlight the importance of tax policies in maintaining the attractiveness of tourism destinations. Numerous studies have emphasized the economic impact of taxes in tourism. Brida et al. (2016) found a positive relationship between tourism taxes and economic growth in European countries. Additionally, Brida et al. (2019) investigated the multiplier effects of tourism taxes, highlighting their potential to stimulate employment and income generation in local economies. This research has examined the role of taxes in promoting environmental sustainability and cultural preservation. Gössling et al. (2020) highlighted the potential of tourism taxes to fund conservation initiatives, while Bramwell and Lane (2000) discussed how taxes can support cultural heritage preservation.

Fredman and Choong (2020) examined the effectiveness of bed taxes in reducing overcrowding, while Faulkner et al. (2003) explored the role of tourist levies in destination management. In general, taxes in tourism have significant implications for destination competitiveness (Herman et al., 2019), revenue generation, economic impact, environmental sustainability, and cultural preservation. Tax policies influence the attractiveness of tourism destinations, support economic growth, and can be used as a regulatory tool (Herman et al., 2023). Furthermore, taxes can contribute to environmental and cultural initiatives (Yu et al., 2023). Future research should further investigate the impacts of specific tax measures and evaluate the effectiveness of tax policy instruments in achieving sustainable tourism development.

METHODOLOGY

It is natural that taxes' impact on the economic activities of enterprises also vary by sector. By taxes we mean the accumulation of value added tax, hotel tax, profit tax, excise and other taxes. For example, in heavy industry, the tax burden of enterprises is sharply different from service industries such as tourism. In the industrial sector, seasonality practically does not matter, and enterprises in it have a stable income. In the tourism sector, however, enterprises are not able to bear a large tax burden due to seasonal problems, and changes in demand for tourist products in the world market.

During the study, we analysed the activities of 30 tourism companies located in the city of Samarkand. The data was taken from regional tax department for the period of 2021. We selected following independent variables, the factors that affect the profits of tourism services:

$Y -$ profits of tourism services (thousand soums)
$X_1 -$ average staff education, years
$X_2 -$ fixed assets' average depreciation rate, percentage
$X_3 -$ fixed assets' average value, mln soums
$X_4 -$ taxes on services, soums
$X_5 -$ the number of employees, people
$X_6 -$ own capital value, thousand soums

Hence, we can formulate the research hypothesis as follows:

$H_0 - X_1, X_2, X_3, X_4, X_5, X_6$ none of the factors Y the effect on is not statistically significant.
$H_1 - X_1, X_2, X_3, X_4, X_5, X_6$ of at least one of the factors Y the effect on is statistically significant.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Profitability of tour.serv	30	2781.9	709.905	1633.9	4484.3
staff av education	30	15.657	1.641	11.7	18.6
fixed asset av dep~n	30	25.273	11.39	8.5	45.1
fixed asset averag~l	30	168.14	195.023	2.6	859.7
Taxes on services	30	38.047	8.955	22.3	61.2
staff number	30	10.5	6.653	2	25
Own capital value	30	93.33	99.144	2.8	324.7

Table 2. Matrix of correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) staff_av_educa~n	1.000					
(2) fixed_asset_av~n	-0.146	1.000				
(3) fixed_asset_av~l	0.238	-0.660	1.000			
(4) taxes on services	-0.464	0.335	-0.497	1.000		
(5) staff_number	-0.181	-0.432	0.199	-0.116	1.000	
(6) Own_capital_va~e	0.313	-0.703	0.936	-0.438	0.240	1.000

Table 3. Regression results

Profits of tourism services	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Staff education years	-22.126	28.166	-0.79	.44	-80.392	36.14	
Fixed assets depreciation rate	2.609	5.241	0.50	.623	-8.233	13.451	
Taxes from tourism services	-71.752	9.673	-7.42	0	-91.762	-51.742	***
Staff average number	-5.582	8.528	-0.65	.519	-23.222	12.059	
Own capital value	1.474	.56	2.63	.015	.315	2.632	**
Constant	5711.009	560.171	10.20	0	4552.207	6869.811	***

Mean dependent var	2781.900	SD dependent var	709.905
R-squared	0.930	Number of obs	30
F-test	27.576	Prob > F	0.000
Akaike crit. (AIC)	412.443	Bayesian crit. (BIC)	422.251

**** p<.01, ** p<.05, * p<.1*

ANALYSIS AND RESULTS

In order to verify the above hypotheses, it is advisable to consider, first of all, the descriptive statistics of the Data (Table 1). From this table, it can be seen that on the scale of enterprises, values of the fixed assets' average value and the own capital value are relatively densely distributed over the values for the remaining factors with a relatively large variation range (maximum–minimum). In our opinion, the above-given factors have a linear effect on the dependent variable, since they all directly and continuously participate in the creation of income. From this, we initially researched the correlation matrix between factors (Table 2). From Table 2, it can be seen that the correlation among certain factors is high (the correlation is called strong if the correlation coefficient is greater than 0.7 according to the Cheddock scale). Strong correlation leads to inconsistent parameters of regression, because it blocks the influence of the correlated factor. Therefore, we removed the average value of fixed assets from the model. Then we performed multi-factor linear regression in STATA 15.0. The result of multi-factor linear regression based on the ordinary least squares method is given in Table 3 below.

From Table 3 we can see that of the five factors that we have chosen, only taxes on tourism services and the own capital value, significantly affect the volume of profits of tourism companies. Removing factors whose effects are not statistically significant, we get the following (Table 4).

Table 4. Results of simplified regression

Efficiency of tourism services	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Taxes on services	-69.88	7.662	-9.12	0	-85.6	-54.159	***
Own capital value	1.136	.475	2.39	.024	.161	2.11	**
Constant	5334.574	289.591	18.42	0	4740.383	5928.765	***

Mean dependent var	2781.900	SD dependent var	709.905
R-squared	0.925	Number of obs	30
F-test	49.960	Prob > F	0.000
Akaike crit. (AIC)	406.437	Bayesian crit. (BIC)	410.641
**** p<.01, ** p<.05, * p<.1*			

According to Table 4, taxes on tourist companies and the volume of own capital in tourism enterprises significantly affected profits of tourist companies at 98% confidence interval (p-value is equal to 0.024). At the same time, we can say that the factors are chosen correctly in the model, since the probability that the Fisher value is less than the critical value is 0 (Wooldridge, 1960). The final model can be described mathematically as follows:

$$Y = 5334{,}57 + 1{,}14X_2 - 69{,}88X_4$$

That is, if the value of own capital of a tourism enterprise increases by one thousand soums, then the volume of profits of tourism business on average increases by 1140 soums, and the increase in the volume of taxes by 1 uzs is observed by a decrease in revenues by about 70 thousand soums. As coefficient of determination shows, these two factors explain 92.5% of the change in income from tourism services. Thus, it was empirically proven that income from tourism services is significantly influenced by the equity and tax burden of the enterprise, and on this basis H_0 we can reject the hypothesis and accept the alternative hypothesis.

In order to explore the seasonal changes in a particular enterprises, we also analyzed the data on the economic activity of the Malika Prime Hotel, which is considered one of well-established hotels in Samarkand, in 2021 during the study (table 5). The Malika Prime hotel is located on the boulevard of the city of Samarkand, which is, very close to the most important tourist attractions of the city. Therefore, the analysis of the activities of this hotel will help to determine the impact of the burden of taxes on the activities of one of the most competitive hotels in the city.

Table 5. Economic activity data of the Malika Prime Hotel

Months	Average price, thousand soums	Number of tourists	Total expenditure, thousand soums	Taxes, thousand soums	Net profit, thousand soums	Potential profit (without taxes), thousand soums
Jan.21	492,17	1544	55261	22970	681679,48	704649,5
Feb.21	442,815	1537	55000	22231	603375,66	625606,7
Mar.21	442,815	2558	91579	28561	1012580,8	1041142
Apr.21	668,6507	2523	90297	23333	1573375,6	1596709
May.21	670,128	2561	91655	24543	1599999,8	1624543
Jun.21	708,504	2743	98175	25609	1819642,5	1845251
Jul.21	531,378	2935	105067	23416	1431111,4	1454527
Aug.21	797,067	3390	121328	26356	2554373,1	2580729
Sep.21	783,2	2919	104485	26201	2155474,8	2181676
Oct.21	774,5	2925	104711	26032	2134669,5	2160702
Nov.21	652,3	2761	98844	25984	1676172,3	1702156
Dec.21	530,263	2611	93465	24523	1266528,7	1291052

From Table 5 it can be seen that there are elements of seasonality in tourist demand and average price change. That is, when demand is low in the winter months, prices are also relatively low, and when demand is high in May and August, prices can be seen to be relatively high. At the same time, the total costs in service are also subject to seasonality. This can be explained by the fact that the main costs in the provision of tourism services are associated with monthly salary of employees. Additional employees are hired when demand is high, and tourism entities are forced to reduce the number of employees when demand is low. Because of the strong influence of such seasonality the recruitment of qualified specialists in the field presents great difficulties. One way to reduce the negative effects of seasonality could be to organize festivals in the winter months and further promote domestic tourism. In this way, there is an opportunity to turn the tourism industry into an attractive industry for qualified professionals. Below it can be seen the dynamics of average prices and the number of served tourists in the Malika Prime hotel during the year of 2021 (Figure 1).

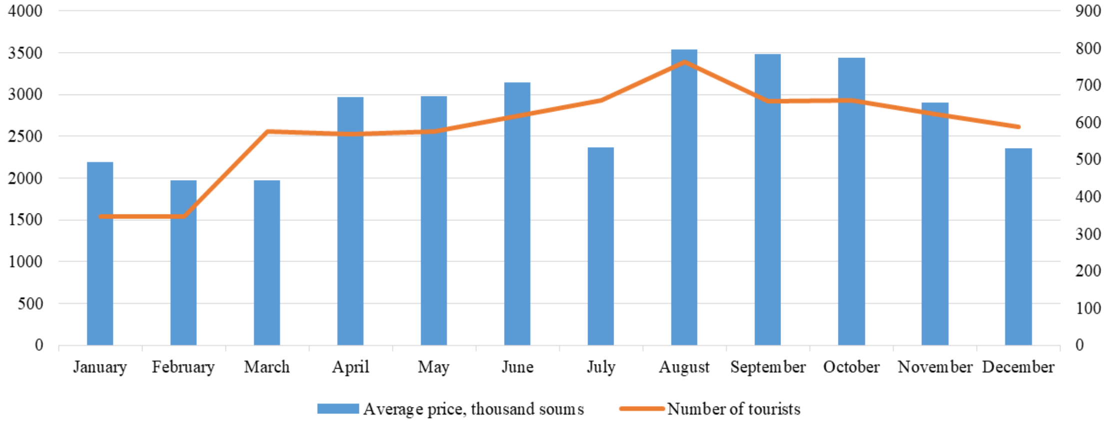

Figure 1. The dynamics of the price and the number of tourists that visited Malika Prime Hotel

The tourism season usually starts in March of each year and lasts until November (Safarov and Janzakov, 2021). There are relatively few tourist visits during the winter months. When the number of tourists is low, hotels often cut down prices in order to cover constant costs. Even in March, the hotel, although the number of visits increases, does not raise prices at once, since at the beginning of the season it tries to collect as many customers as possible. But after a steady increase in the number of visitors in the following months, hotels start increasing prices. As can be seen in Figure 2, in 2021, the maximum price was observed in August, as well as the maximum number of tourist visits. From September to December, these rates were declining.

We have determined the profit function of the Malika Prime hotel based on the data presented in Table 5. In this case, we calculated the net profit by subtracting the costs and taxes from the income. Below in the figure the potential profit indicates the profit that might have been in the absence of taxes (Figure 2). As can be seen from Figure 2, the difference between potential and net profit is not large in most cases. That is, it can be seen that this is wrong with the idea that taxes sharply reduce the profits of tourism enterprises.The amount of net profit grew from March to June and reached its maximum value in August. In the following months, however, the amounts of net profit and potential profits were declining due to falling demand. However, if the more hotels were included in the analysis, then the overall difference between potential and actual income might have been significant.

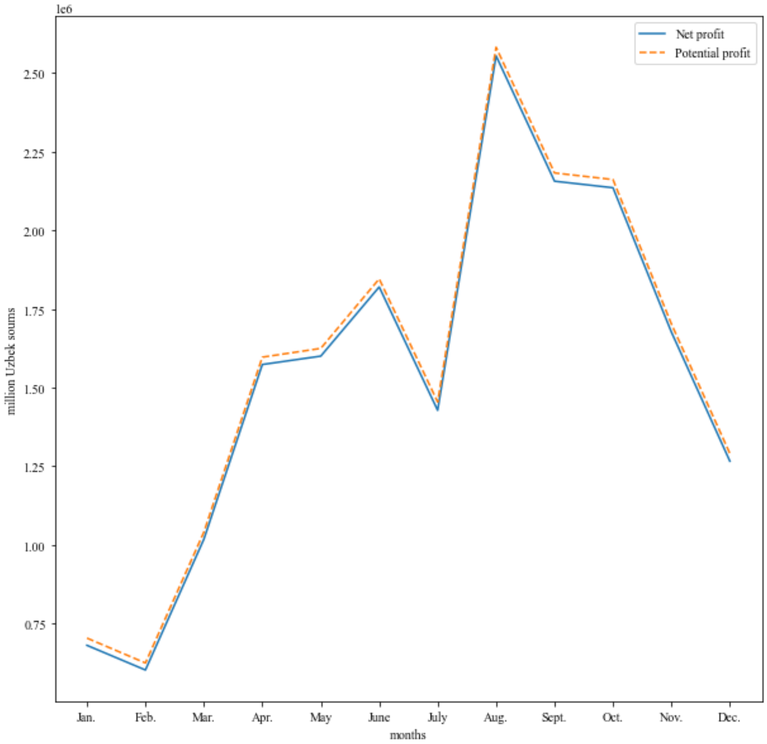

Figure 2. The dynamics of net and potential profit at Malika Prime Hotel

CONCLUSION

In conclusion, taxation plays a significant role in the tourism industry. Governments around the world utilize various taxes to generate revenue, promote sustainable tourism development, and support infrastructure and marketing efforts. Common taxes imposed on the tourism industry include value-added tax (VAT)/goods and services tax (GST), hotel taxes, tourism development taxes/levies, airport taxes, excise taxes, corporate taxes, payroll taxes, and import/export duties.

These taxes help fund public services, infrastructure projects, and destination promotion, contributing to the growth and maintenance of the tourism sector. They also serve as a means for governments to regulate tourism activities, promote environmental sustainability, and manage tourist flows.

However, tax regulations can be complex and vary between countries and regions. Tourism businesses need to stay informed and comply with the latest tax laws to avoid penalties and legal issues. Seeking professional advice from tax experts and legal advisors specialized in the tourism industry is crucial for navigating the intricacies of tax compliance.

Overall, understanding and managing tax obligations in the tourism industry are essential for both governments and businesses alike. By striking a balance between revenue generation, sustainable development, and providing quality visitor experiences, taxation can contribute to the growth and success of the tourism sector while ensuring a fair and equitable economic environment for all stakeholders involved. The results of the research showed significant impact of taxes on the economic activities of the tourism entities. In particular, it turned out that the volume of own capital and taxes had significant impact on profits of tourism companies in Samarkand, Uzbekistan. The investigation of a relatively competent hotel's price and tourist visit dynamics showed seasonal patterns, and insignificant impact of taxes on total net profit dynamics. However, if more hotels were included in the analysis the impact of taxes could be more significant.

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THE TERRITORIAL TOURISM DEVELOPMENT STRATEGIES AND IMPLEMENTED CROSS BORDER COOPERATION PROJECTS IN BIHOR COUNTY. AN ASSESSMENT OF THE 2007-2013 AND 2014-2020 PROGRAMMING PERIODS AND EXPLOITATION OF THE EU FUNDS FROM THE POINT OF VIEW OF TOURISM

Krisztina CZUCZOR
University of Debrecen, Department of Social Geography and Regional Development Planning, Faculty of Science and Technology, Debrecen, Hungary, e-mail: czkriszta93@mailbox.unideb.hu

Gábor KOZMA
University of Debrecen, Department of Social Geography and Regional Development Planning, Faculty of Science and Technology, Debrecen, Hungary, e-mail: kozma.gabor@science.unideb.hu

Zsolt RADICS*
University of Debrecen, Department of Social Geography and Regional Development Planning, Faculty of Science and Technology, Debrecen, Hungary, e-mail: radics.zsolt@science.unideb.hu

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Abstract: Bihor County has remarkable and various tourism resources in the frontier area which could be exploited more efficiently considering the tourism development strategies on different hierarchical levels, opportunities for investments using non-refundable financial support and the multilateral trans-frontier relationships due to its territorial location and historical and ethnical background. This study gives an insight in the relationship and consistency of development strategies, in the importance and the territorial distribution of implemented projects within Interreg IV and V Hungarian-Romanian Cross-border Cooperation Programmes, that concern tourism development in Bihor. All projects regarding Bihor were categorized through content and comparative analysis based on public documentation of Interreg Programmes which contributed to establishing three main category of winner applications: tourism development projects, indirect tourism development projects and other type of projects. The county has an exceptional position due to its high share of the number of projects and the amount of gained aid within the examined programmes, although there exist multilateral territorial inequalities in the location of project partners, in the total amount of non-refundable financial support from European Regional Development Fund and in the gained aid per capita on the level of local governments of the county. Based on the territorial distribution, mostly the urban areas and their catchment rural settlements on the eastern, central and north-western part of the county benefitted from the Interreg VI and V in case of tourism development.

Key words: Bihor County, tourism development strategy, Interreg, cross-border cooperation, territorial distribution

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INTRODUCTION

The Romanian current literature lacks a comparative analysis of how regional authorities and governments of counties consistently formulate development strategies regarding tourism priorities, also a comprehensive evaluation of cross-border cooperation programmes applied for Bihor County is required, however several studies examine tourism development projects only from the perspective of cooperation in Bihor – Hajdú-Bihar Euroregion. The territorial profile of tourism sector in Bihor has also changed in parallel with its general profile of territorial relationships within the county and its surroundings in the last decades (Szilágyi and Elekes, 2020; Szilágyi and Miklósné Zakar, 2021;) which fact also highlights the importance of the evaluation of multidimensional trans-frontier cooperation that directly or indirectly affects the development of tourism. Thus, the first part of this study contains the literature review regarding the aspects of the importance of tourism planning. In the second part, this paper analyses the hierarchical compatibility and significance of tourism in the development strategies for the selected periods at national, regional and local level. The third part focuses on Interreg IV and V Cross-Border Cooperation Programmes between Hungary and Romania within the framework of development strategies applied for Bihor County, concerning the territorial tourism development, illustrating the territorial distribution of the project types and the gained aid from the European Regional Development Fund.

The economic profile of a region highly determines the sector of tourism due to its high dependence on other economic activities although it is one of the most dynamically growing industry worldwide (Abubakirova et al., 2016; Draghici et al., 2015; Badulescu et al., 2018). The tourism development strategies and investments also affect several sectors such as basic public services, the building industry, education, transportation etc. generating remarkable spillovers (Banerjee et al., 2016;

* Corresponding author

Jaliu, 2012) and bringing considerable advantages from the perspective of economic progression and increase of living standards (Draghici et al., 2015, Herman et al., 2017). Developed countries found tourism as a viable and sustainable choice for the development of their local economies, modernizing and/or diversifying the existing structures (Herman et al., 2017, Amir et al., 2015) even for regeneration and revitalization of rural (Liu et al., 2020; Badulescu and Badulescu, 2017) or peripherical border areas (Bădulescu et al., 2014). Sustainable tourism perspective highlights the enhancement of favorable impact of tourism development through reducing the negative consequences on economic, social and environmental areas (Tisca et al., 2016; Amir et al., 2015), protecting heritages in same quality for future generations, and at the same time it enables the competitiveness of the sector (Nicula et al., 2013). This could only be realized by consistent, coherent and integrated strategic development planning on macro, mezzo and micro territorial levels. However, the elaborations of tourism policy and strategy in national, regional and local level in Romania were highly influenced by the availability of cohesion and structural funds of the EU influencing effectiveness of implementation (Jaliu, 2012).

The national government plays a key role at the macro level in planning, managing and promoting tourism in a sustainable manner (in accordace with the principles of European Union regarding sustainable tourism development) and it defines the general regulatory framework in which the tourism service providers operate (Ruhanen, 2013; Badulescu et al., 2016). The Romanian National Territorial Development and Urban Planning (NTDUP in the following) is presented in the 350/2001 supplemented and republished law. The Government Ordinance no. 142/2008 contains the Chapter VIII of NTDUP - Areas with tourism resources, approved and supplemented by law 190/2009. These two laws include the national territorial tourism development plan of the country in compliance with the initiatives of the European Union. The assigned annex of the Chapter VIII provides the categorization of the counties territorial administrative units defining two kinds of areas: areas with high tourism potential and the others with a low amount of tourism resources. Regarding to this annex, the development plan states that the national, regional and local development programs should promote the implementation of the specifically tourism-, technical- and environmental infrastructure modernizations, and tourism must be the primary promoted economic sector within the localities with high tourism potential.

The mezzo level is the regional, the Romanian Regional Development Agency represents an essential function in shaping the regional development strategy and implementing that by the regional operational programmes which priorities must follow the principles of regional strategy. The strategic planning and tourism development initiatives should be based on local environment in which they will be implemented (Palka et al., 2020; Bercu, 2015; Ruhanen, 2013; Badulescu et al., 2016), therefore the local county governments, representing the micro level in this case (we could also consider local administrative unite level as micro level, but this paper only discusses strategies developed by the Bihor county government), play a major role in analyzing of the particular resources, strengths and deficiencies, considering the attributes of local administrative units and stakeholders. Due to the existent multidimensional variety of natural and anthropical tourist resources in Bihor county (Dodescu and Botezat, 2018; Dodescu and Borma, 2017; Hent, 2013; Brata, 2015; Vofkori, 2006; Neacsu et al., 2016; Neacsu et al., 2011; Bădulescu and Bădulescu, 2006), even in the geographically isolated areas (Popviciu, 2010), there exists, on the one hand, a high potential for the development of tourism activities (Bădulescu and Bădulescu, 2006). On the other hand, a significant number of investments are required for noticeable outcomes, primarily in the general infrastructure, in the specific tourism infrastructure and suprastructure (Bădulescu and Bădulescu, 2006; Bántó, 2012; Brata, 2015; Dodescu and Botezat, 2018). Although there is a noticable increase in the number of accomodation providers and other kind of tourist service providers since the turn of the millenium (Data of INSSE, 2020; Herman et al., 2017), there can be observed an unequality in they territorrial division creating lack of accomodation supply mostly in the northern rural areas and partially in Apuseni Mountains (Dodescu and Borma, 2017).

A significant evolution could only be reached by major investments (Bántó, 2012; Bădulescu and Bădulescu, 2006; Szilágyi, 2019) for which the different type of operational programmes could provide the major partial financial background supporting the improvement of the weak points of tourism. Although, there were earlier intentions for cross-border tourism development, through the Phare Cross-Border Cooperation and Interreg Programmes (Soproni, 2007), taking advantages of variety of tourism resources targeting, the nearest and most easily accessible foreign target group for Bihor County. On the one hand, the cross-border cooperation in the field of tourism requires cooperative and collaborative tourism planning, it has become more valuable creating a trans-border social and cultural link between adjacent populations and also acting like a catalyst for multilateral development of communities (Dodescu and Borma, 2017). In the other hand, tourists are interested in visiting destinations not administrative regions, therefore trans-frontier tourism development could embody a unique potential for both sides of the border area (Badulescu and Badulescu, 2017; Badulescu et al., 2016).

MATERIALS AND METHODS

The evaluation of the strategies has been realized by multidimensional qualitative comparative analysis focusing on the changes in structure of strategic priorities, context and order on macro and micro hierarchical level.In order to quantify the winner and implemented projects of the Hungary-Romania Cross-border Co-operation Programme 2007-2013 (Interreg IV. HU-RO) and Romania-Hungary Cross-border Co-operation Programme 2014-2020 (Interreg V. RO-HU) a specific database was created for Bihor County through inventory method, based on the public documentations of the official websites of programmes (http://www.huro-cbc.eu/ and https://interreg-rohu.eu) until the end of December, 2020.

Based on content and comparative analysis, all the projects were classified according to their main objectives and contents to direct tourism development projects, indirect tourism development projects and other projects categories. The direct tourism development projects counted those types, which objective served the improvement of the tourism infrastructure, sustainment of culture and preservation of resources, counting renovation of monuments and valuable buildings, the conservation of natural areas and landscapes, the organization of cultural events, foundation of tourism business incubator, tourism marketing activities, trainings, consolidating partnerships etc. The aims of the indirect tourism development project type concerned the general infrastructural developments such as road network, public utility infrastructure and communication network constructions, maintenance and preliminary studies, environmental protection, the improvement of emergency health care solutions in mountains of Bihor County and disaster management. These investments not only contributed to the quality of life improvement of the local population, but they also create the basic conditions for tourism development activities and emerge environmental sustainability. The other projects type encompasses all the investments that concerned other development areas than the previously selected, abovementioned projects. The territorial distribution of project types and the amount of ERDF aid on LAU2 level have been analyzed by cartographical method based on the own designed database of direct and indirect tourism development projects. For establishing border values of data, the method of natural break could not be used because it can not handle the outliers, as Oradea appeared in each case of programmes and project types. In this regard, the border values have been settled proportionately by the number and amount of data. Moreover, for comparability of local governments in their success in accessing non-refundable ERDF aids, considering the differences between the number of inhabitants, the method of territorial distribution of aid in proportion of the population have been used, based on the official census data from 2011. It enabled the balancing of the size of rural and urban areas.

RESULTS AND DISCUSSION

The regional and local development strategies implied for Bihor County from the perspective of tourism development initiatives

There already closed two programming periods since Romania joined the European Union. The next considered hierarchical levels in this article are the regional and local (county) levels, where each administrative-development region and county has its own multilateral strategy. The North-West Regional Development Strategy between 2007-2013 and 2014-2020 show some difference but also main similarities regarding the tourism development perspectives. The 2007-2013 strategy defines an overall vision about a multidimensional economic development for the reduction of territorial economic, social inequalities and also in case of deficiencies in standards of living. There are five specific objectives where the tourism is not highlighted, but it is subordinated to the first objective about the development of the regional attractiveness, economic competitiveness and innovation activities. The 2014-2020 strategy overall vision and the first two specific objectives are the same with the 2007-2013 period's strategy but in 2014-2020 period the development of businesses and the research-development-innovation activities are in domination against the tourism development which is similar in the content with the previous and it is subordinated to the first specific objective fourth investment priority. The similarities between the initiatives regarding the tourism development refer to the fact that following the overall status evaluation of the implemented actions in 2007-2013 period was not sufficient in the case of achieving the objectives therefore it requires more effort focusing on the basic conditions which stands in the front of tourism competitiveness.

The development strategies of Bihor County for the 2007-2013 and 2014-2020 programming periods show a significant difference in the structure of the documents which results difficulty of comparison of their content between them. The actual strategy's structure is basically corresponding with the regional document, but it is more local specific. The 2007-2013 strategy detailed more the tourism industry in a large chapter discussing the general objectives from the point of view of the tourism, taking in order the other highlighted priority sectors for the improvement of the general living standards and decrease of economic, social and environmental inequities. The main objectives are similar in these two documents, but the 2007-2013 strategy contains a reduced number of recommended intervention activities. The main difference of the objectives embodies that in the 2014-2020 document first appear the initiative of sustainable development of tourism in Apuseni Mountains initiative. It has created a great progress for the perspective of improvement of the mountain tourism, because it was not emphasized as a particular potential besides the natural-, cultural- and balneoclimateric tourism of Bihor County. The county is in the cross-border area with the Hungarian Hajdú-Bihar and Békés Counties, the tourism of neighbor country is partially based on balneoclimateric tourism which is highly developed in the cross-border area. It is recommended for Bihor to also emphasize the potential of the mountain tourism to create complementarity in the field of tourism product (Dodescu and Botezat, 2018) since Hungary is the fourth country in number of arrivals of foreign visitors in Romania and the neighboring counties do not have this kind of natural resource for tourism. The contribution of adequate development projects and marketing activities in the abovementioned field could emerge the attractiveness of Bihor and reduce its transit feature increasing the average overnight stay of tourists and creating complementarity in the supply of tourist attractions in the cross-border area. In the hierarchical view of strategies, in the period of 2007-2013, the regional strategy corresponds the NTDUP, because it placed the tourism development objectives below the economic improvement initiatives. The strategy of the county shows a greater structural difference in front of the regional strategy, but tourism is highlighted as the first priority sector and it contains the tourism development measures for other priority sectors which is in accordance with the general vision. The current regional plan and strategy of the county have a unified and transparent structure and hierarchically are compatible.

The Interreg financing programs in the Romanian and Hungarian border, regarding for Bihor County in the 2007-2013 and 2014-2020 programming periods

The cross-border cooperation between Romania and Hungary already existed before Romania joined the EU, building up trans-frontier relationships and creating parallel development possibilities among local governments through the pre-accession fund of Phare Cross-Border Cooperation Programme (Phare CBC in the following) alongside the Romanian-Hungarian border, even before 1998. The development of trans-frontier partnerships represents a basic role of EU integration process based on common values and development areas (Soproni, 2007; Dodescu-Dodescu and Borma, 2014; Dodescu and Borma, 2017). The Phare CBC was intended for financial and technical support of organizations and institutions (Soproni, 2007) for Central and Eastern-European countries in the pre-accession phase with a total contribution of 135 million euro, enabling later accession to Interreg Programmes for Romania and Hungary (Zakota and Szilágyi, 2014). Romania obtained 28 million euros in the period of 1996-2003 (Breco, 2020). The Phare CBC 2004-2006 was implemented concomitantly with Interreg IIIA in Hungary (Breco, 2020). Although, for Romania, the Interreg IV 2007-2013 was the continuation of Phare CBC after joining the European Union (Zakota and Szilágyi, 2014).

The Interreg IV and V have been implemented since Romania joined the EU. Within the Operational Programme the EU provided financial support for tendered and winner projects from the European Regional Development Fund (ERDF). The supported rate of the project budget covered the 85% of the eligible costs and the range of applicants involved public bodies, public equivalent bodies, non-profit private bodies and European Groupings for Territorial Cooperation (EGTC) (CBC HU-RO, 2020; CBC RO-HU, 2020) both programme have had priority axes so far containing main initiatives, the applications could be submitted in accordance to these priority objectives. Eight neighboring counties could participate by cross-border partnerships along the Hungarian-Romania border, these are the following: Satu Mare, Bihor, Arad and Timiș from the Romanian side and Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Békés and Csongrád counties from the Hungarian side. These cross-border co-operation programmes followed the Lead partner principle which required responsibility over the implementation of projects and financial transactions. The support was covered by the joint EU, with 85%, and national co-funding, that summed up to 10-13% of the eligible costs, and the own contribution was between 2-5% for the Romanian partners (CBC HU-RO, 2020; CBC RO-HU, 2020).

The evaluation of the Interreg IV financing programme in 2007-2013 programming period

Within the framework of Interreg cross border cooperation the Hungary-Romania Cross-border Cooperation Programme 2007-2013 (HU-RO Programme in the following) fastened the already existed relations by the realization of projects with similar interests within the eight neighboring counties along two priority axis: 1. The improvement of cross-border transport facilities, communication and protection of the environment; 2. Cooperation in the areas of business, R&D and innovation, education, labour market, health care and risk management. The 2.1.3, Key area of intervention, contained the initiative of tourism development, although some projects that were tendered within other subsectors served as direct or indirect tourism development investments. The total allocation of the programme counted 264.056 million euro. The minimum available support exceeded 20 000 euro and the maximum amount counted almost 6 million euro per projects (CBC HU-RO, 2020). The rate of implemented project types is shown on the Figure 1 regarding the tourism development investments in Bihor County. There were 453 winner and implemented projects in the eight concerned counties of which 179 projects received funding in Bihor County in co-operation with the Hungarian and other Romanian parties, that covered 39.51% of the total number of development projects, with 44.62% of budgets of total projects representing 42.78% of the total ERDF aid amount for the HU-RO Programme (CBC HU-RO, 2020)

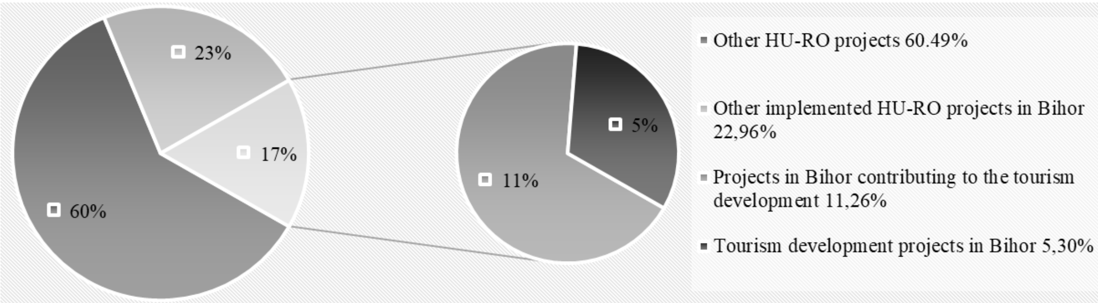

Figure 1. The distribution rate of number of HU-RO projects regarding the tourism development investments of Bihor County (Source: Own calculation based on own designed database, according to huro-cbc.hu 2020)

The number of winner applications summed up to 179 projects, which contained 24 direct and 51 indirect tourism development measures in the level of Bihor County, with a total budget of 117,817,818.4 euro of which 77.98% was financed by the EU. The share of ERDF aid of Bihor represented 22.73% of the total financial support of implemented projects within HU-RO and 53.14% of the cooperation projects in partnership, with a value of 48,824,375.7 euro. The direct tourism development projects were 5.30% of the total Programme and within Bihor it represented 13.41% of the projects with approximately 6.138-million-euro financial aid for the partners in the county, that covered almost 60% of the 10.231-million-euro total ERDF support. From the share of Bihor County, the ERDF aid part was 12.57% for tourism investments and 45.67% for indirect tourism development projects.

The evaluation of the Interreg V financing programme in 2014-2020 programming period

The Romanian-Hungarian Cross-border Cooperation Programme between 2014-2020 (RO-HU Programme in the following), in contrast with HU-RO Programme, has had six priority axes, still focusing on common development interest for eight adjacent counties along the two sides of the border. The first axis contained the sustainable use of common values and resources with 25.66% share of ERDF aid, i.e. 48.5 million euro, it had two Specific Objectives: 1.1. Improved quality management of cross-border rivers and ground waters, corresponding with Investment Priority 6/b; 1.2. Sustainable use of natural, historic and cultural heritage within eligible area, corresponding with Investment Priority 6/c and it belonged to the type of direct tourism development perspectives. The second axis focused on improvement of sustainable mobility and accessibility in cross-border areas containing two Specific Objectives with 18.51% share from ERDF aid, i.e. 34.99 million euro: 2.1. Improved cross-border accessibility through connecting secondary and tertiary nodes to TEN-T infrastructure, corresponding to Priority Investment no. 7/b; 2.2. Increase the proportion of passengers using sustainable – low carbon, low noise – forms of cross-border transport corresponding to Priority Investment no. 7/c. The third axis aimed the improvement of employment and cross-border labour mobility promotion containing one Specific Objective within Priority Investment no. 8/b gaining the 29.14% of ERDF fund, i.e. 55.07 million euro: 3.1. Increased employment within the eligible area. The fourth axis contained only one Specific Objective, it belonged to Investment Priority 9/a which earned 30.17% of ERDF fund, i.e. 57.03 million euro: 4.1. Improved preventive and curative health-care services across the eligible area. The fifth axis only Specific Objective corresponded with Investment Priority 5/b with 5.05% of ERDF aid, gaining 9.55 million euro: 5.1. Improved cross-border disasters and risk management. The sixth axis aimed the improvement of connection between institutes and citizens, containing one Specific Objective with two subsections for Investment Priority 11/b earning the 2.12% of ERDF fund, which was 4.01 million euro. The 6.1. Specific Objective was intended to intensify sustainable cross-border cooperation of institutions and communities within two lines: a. Cooperation for institutions; b. Cooperation for citizens (CBC RO-HU, 2020). The last axis b. subsection allowed the organization of different events in the field of sport, culture and leisure, contributing to development of local tourism and creation of long-run partnerships. The rate of contribution for projects was similar with HU-RO in the frame of ERDF and national co-funding.

The total budget of the programme was 232 million euro with national co-financing of which around 189 million euro represented the aid from ERDF which was approximately 81.47% of total. According to data update until 30th of December 2020, Bihor County appeared in 49 winner and contracted projects of the 104 projects within the RO-HU. The budget of 49 projects was 86,691,715.22 million euro of which Bihor gained 41,691,647.18 million euro ERDF aid, that was 61.78% of total ERDF aid for each partners along the border (CBC RO-HU, 2020).

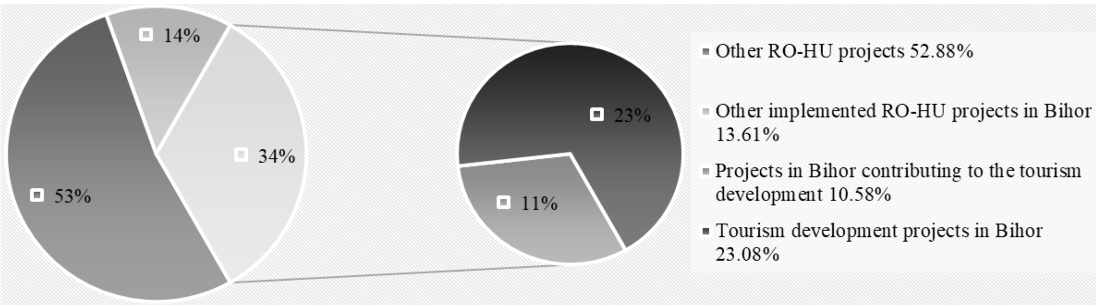

Figure 2. The distribution rate of number of RO-HU projects regarding the tourism development investments of Bihor County (Source: Own calculation based on own designed database, according to huro-cbc.hu 2020)

Figure 2 shows proportion of the three project types in partnership with Bihor within the RO-HU Programme. Based on the research, there were distinguished 24 direct tourism investment with 23.08% of number of projects, 11 indirect tourism projects with 10.58% and 14 investments in the other category with 13.61% of total 104 projects. Direct tourism investments had 33.91% of the total 49 project budget in partnership with Bihor, the share of Bihor from ERDF aid was 46.66%, i.e. 13.7 million euro. The indirect tourism development category contained 22.49% of the 49 projects with a total budget of 21.76 million euro, Bihor gained 18.2 million euro ERDF aid, therefore it had 76.85% share of financial support. There can be highlighted a relatively high level of overall ERDF share of partners and leaders in Bihor, and also in the case of indirect tourism investments, due to a large number of applicants per projects from the county, which impacted the statistical data.

DISCUSSION

Regarding to the examined cross-border cooperation programmes, while 179 project concerned partners from Bihor County of total 453 projects in the 2007-2013 programming period, with 24 direct and 51 indirect tourism development activities, the 2014-2020 period showed 77.04% decrease with its total number of 104 winner projects of RO-HU Programme. Although, the share of Bihor increased, the number of investments decreased with 72.63%. In case of the latter Programme, the same number of direct tourism development projects were distinguished, whilst there appeared a diminution of 78.43% in the number of indirect tourism development project, from 51 to 11, in comparison with HU-RO.

RO-HU Programme, in contrast with the previous period, has had six priority axes of which the last was focused on fastening existed and creating new cross-border partnerships between the potential beneficiaries. During implementation of HU-RO Programme there existed problems in creating young trans-frontier connections of institutions, organizations and companies which reduced the effectiveness of the Programme (Badulescu et al., 2016) and it also caused territorial inequality of project applications in case of Bihor County. The most successful applicants based on previously consolidated partnerships, on the one hand they benefited from relationships through Bihor – Hajdú-Bihar Euroregion agreement, on the other hand the communities had benefit from already existed twin town relationships, both cases searching for similar development opportunities and problem solutions. The abovementioned have had an advantage in front of those territories in lack of relationships or even with differences in ethnical structure and language. These circumstances have also contributed to territorial inequalities in the distribution of projects. Figure 3 shows the scales and hierarchy of the 11 participant local administrative unites by number, displaying with bullets, and by the gained ERDF aid, illustrated with shading, for partners from Bihor County in case of projects for direct development of tourism within the HU-RO CBC. In contrast, Figure 4 displays the territorial distribution of the share of ERDF aid per capita of partners on LAU2 level within Bihor, that represents their comparison in proportion of the population to enables the evaluation of their success of accessing non-refundable aids within the cross-border cooperation regardless the differences in their size.

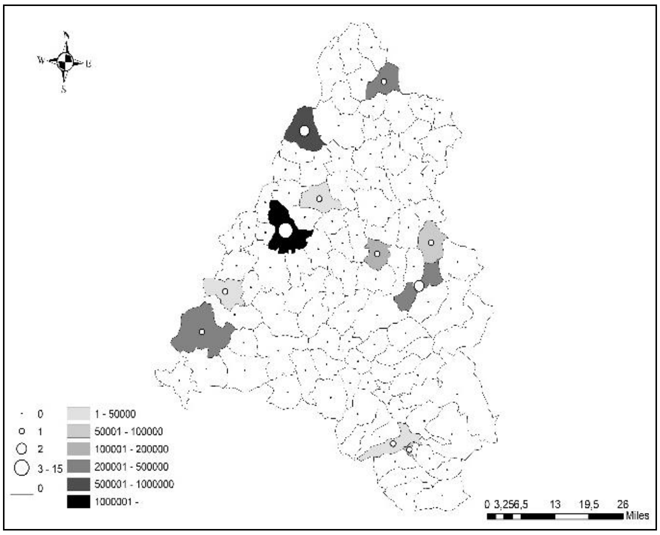

Figure 3. The distribution of number of tourism development projects and ERDF aids on LAU2 level for Bihor County within HU-RO CBC (Source: Own edit based on own calculation)

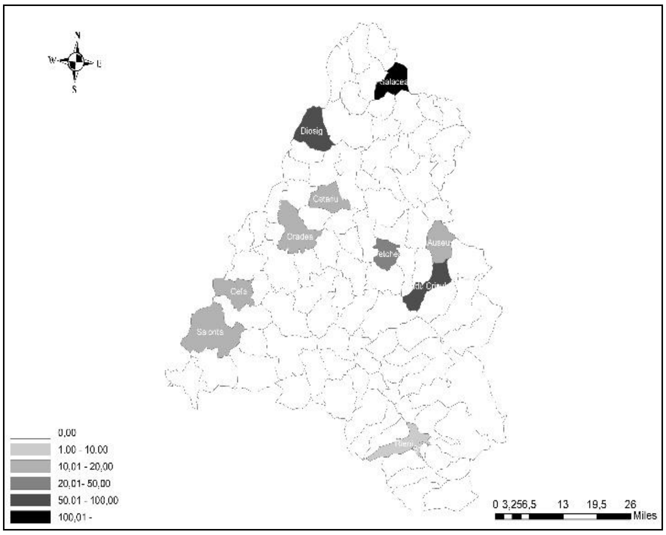

Figure 4. Territorial distribution of the share of partners in Bihor from ERDF aid per capita on LAU2 level regarding tourism development projects within HU-RO CBC

On the one hand, Oradea, as county seat, owned the major part regarding the number of projects, which represented 62.5% of total direct tourism development investments with a number of 15 projects and 4,127,157.15 euro total aid that constituted a share of 67.24%. On the other hand, considering the amount of ERDF aid per capita, the municipality was positioned in the fourth range, in proportion of its population Oradea summed up to 18.53 euro per capita. In this regard the county seat became the seventh of 11 participant territories. Although, we can not consider this ranking as the fact that Oradea had a moderate overall success in accessing non-refundable aids, because some other local governments did not benefit from other support, but the county seat could also account a significant amount of aid gained through other operational programmes during 2007-2013. Thus, Oradea had an outstanding position regarding the number and aid share, becoming an outlier, but considering the amount of aid per capita it had an average ranking due to the fact that mostly small-scale projects were implemented and also it had significantly higher number of inhabitants than the other local governments of the county.

Based on Figure 3, the second successful territory was Diosig with two projects, one for the promotion of heyduck's tradition and the another for the preservation and presentation of values of nature, it had an approximately 10.5% share of gained aid of this category, with 642,555.8 euro Diosig was the only local administrative unit on the second largest scale. On the third scale came Sălacea, Vadu Crișului and Salonta. Sălacea had the highest amount of ERDF support with one project for establishing inquiry house for the promotion of water history, it had a share of 7.37%, that represented 452,370 euro, afterwards it followed Vadu Crișului with two projects and 5.97% share, which accounted 366,262.33 euro for tourism business incubator and for coopeation in Crișul Valley. Salonta obtained one winner project that barely achieved the threshold limit of aid in the presented scale in front of the abovementioned two territories, it earned 217,574.5-euro non-refundable aid, for the improvement of value of cultural capital, which represented 3.54%. Țețchea was the only on the fourth scale with one project for cultural tourism development and an aid of 125,885 euro with 2.05% share. On the following category Ștei city and Aușeu appeared, both projects concerned cultural tourism development, the former local government with 53,329 euro and the latter with 51,382 euro, both below share of 1% of total aid for tourism development projects of Bihor. The latest scale counted territories that gained below 50,000 ERDF support. Above 40,000 were Cefa and Cetariu, the former had 44,786.5 euro for protection of natural values and the latter had 42,007.78 euro for promotion of natural values. On the last scale appeared Rieni with 14,702.87 euro funding for promotion of natural parks.

According to Figure 4, Sălacea had the highest amount of aid per capita with 145.46 euro, becoming the only local government that earned above 100 euro in proportion of the inhabitants. The second scale contained two participant territories, Diosig with 90.97 euro per capita and Vadu Crișului with 90.61 euro per capita. Țețchea was represented on the third scale, having support of 38.79 euro per capita. Five local governments positioned at the fourth scale: Cetariu with 19.38 euro, Cefa with 18.95 euro, Oradea with 18.53 euro, Aușeu with 17.23 euro and Salonta with 11.22 euro. Ștei city and Rieni appeared on the fifth scale, the former accounted 7.18 euro and the latter 4.84 euro per capita.

Considering the investments in the indirect development of tourim within HU-RO Programme, Figure 5 presents the territorial distribution of the number of projects, that is marked with bullets, and allocated ERDF aid, illustrated by shading, and Figure 6 refers to the distribution of the amounts of non-refundable support per capita.

Evaluating the scale of local governments in case of the number and gained aid of projects, again Oradea became an outlier with 26 projects and a total 10,693,150.87 euro financial support. Thus, studying its position in case of distribution of aid per capita, Oradea managed itself to the 10th place from 24 local governments positioning itself on the fifth scale, earning 48,01-euro financial support per capita. In this regard the county seat had a moderate success.

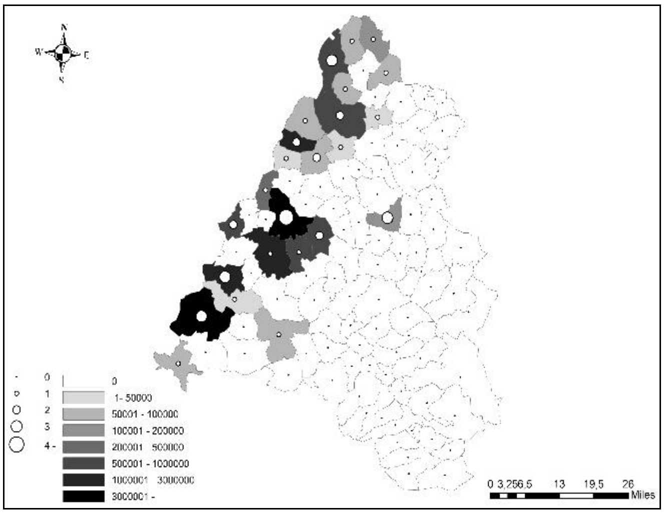

Figure 5. The distribution of number of indirect tourism development projects and ERDF aids on LAU2 level for Bihor County within HU-RO CBC (Source: Own edit based on own calculation)

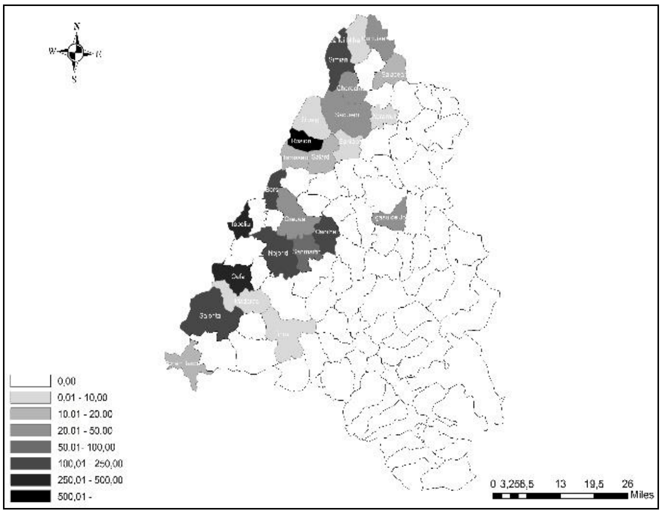

Figure 6. Territorial distribution of the share of partners in Bihor from ERDF aid per capita on LAU2 level regarding tourism development projects within HU-RO CBC

Although, Roșiori had two winner projects and it was the third with 2,349,506.82 euro total aid, this local government was undoubtedly winner in case of aid in proportion of the population, having 777,47 euro per capita, which major part was for road development and its 2.68% for study of recovering swampy areas. Prominent local governments were also: Cefa with tree projects of infrastructure and cooperation development got 1,164,509.06 euro total aid taking second place by gained 492.81 euro aid per capita; Toboliu commune with two infrastructure development projects, having 641,801.03 euro financial support and, due to its low number of inhabitants, became the third successful in accessing non-refundable aid per capita, which were 306.2 euro. On the third scale of aid per capita were Nojorid, Salonta, Șimian, Oșorhei and Borș communes. Nojorid earned 1,082,359.4 euro funding for a road development project, having 201.33 euro per capita, although it appeared on the second scale by total aid. Salonta city had a bicycle road development and two water management projects with a support of 3,025,328.5 euro that was 156.03 euro per capita and the city positioned itself on the first scale taking account the total gained financial aid. In this regard, Salonta had a better position than Oradea. Șimian gained 630,259.84 euro total aid for one project for infrastructure development and two other for environmental protection, being on the third scale by total support and considering its number of inhabitants it had 154.51 euro per capita. Oșorhei earned 846,787.99 euro, 124.41 euro per capita, for road construction and establishing information centers in protected areas. Borș had one project in this category for construction of cross-border cycle road earning 463,656.1 euro aid and111.27 euro per capita.

Sânmartin follows the abovementioned local governments, which was on the third scale by total gained aid of 666,489.63 euro for one project for transport infrastructure development and it appeared on the fourth scale with 61.7 euro per capita. Săcuieni city has also been positioned on the third scale with 500,001.67 euro total financial support for two projects, but it appeared on the fifth scale in terms of aid per capita, having 39.44 euro. In the same category of gained aid per capita were also: Curtuișeni having 111,963.7 euro for one project, which was 28 euro per capita; Lugașu de Jos with three projects with 101,603.95 euro in total and 27.84 euro per capita; and Cherechiu also managed in this scale due to its low number of inhabitants, getting 66,483.6 euro in total for one project, that was 26.71 euro in proportion to the population of the commune.

Sălacea, Tămășeu, Avram Iancu and Sălard positioned themselves on the sixth scale considering the earned financial support per capita. Sălacea had one realized project for establishing information centers in protected areas with 54,470.69 euro total aid which was 17.51 euro per capita. Although, Tămășeu had less than 50 thousand euro aid in total, namely 33,600.5 euro, and the commune ranking was seventh in this regard, it got 16.28 euro per capita for preparation of studies on road development. Avram Iancu earned 51,000 euro for one project on road construction studies, that was 14.72 euro in the proportion of the population. Sălard had two projects for realization of road construction studies with 63,355.43-euro aid, that was 14.09 euro per capita. The following local governments had one project, each for preparation of studies on road development, except Săniob, which had an application on cross-border connection building, and all of these local governments were on the seventh scale by aid per capita: Diosig with 65,080.55 euro in total and 9.21 euro per capita; Mădăras with 25,500 euro in total and 9.11 euro per capita; Abrămuț with 26,566.75 euro in total and 8.47 euro per capita; Săniob with 19,125 euro in total and 8.41 euro per capita; Valea lui Mihai city with 77,424.8 euro and 7 euro per capita; Tinca with 58,055 euro in total and 6.95 euro per capita. In case of RO-HU CBC, 16 local administrative unites participated through 24 tourism development projects, that means 45.45% improvement in number of participant local governments, and they had 13,716,097.8 euro aid in total, which was 123.46% higher than in the previous programming period. The territorial distribution of gained aid and number of projects are illustrated on Figure 7 and the distribution of gained aid per capita on LAU2 level is presented by Figure 8.

Oradea realized 12 projects and got 7,981,675.32 total aid being in the first scale based on Figure 7 which was 93.39% higher amount than in case of previous programming period. The the share of total aid of Oradea for tourism development projects was 58.19% within Bihor that is 9.05% less than in case of HU-RO Programme for Bihor. Looking at the number of projects, the city owned 50% of total number of projects from Bihor, which, in proportion, is 12.5% less than between 2007-2013. Considering the financial support in proportion of the population, the rank of the county seat was on the fourth scale, it was the seventh of 16 local governments, being again on the middle scale, with 35.83 euro per capita, although it showed an increase with 93.36% than during the previous programming period. Within 2014-2020, Oradea became an outlier in case of the number and total gained aid, as in the previous period, with small and middle scale projects.

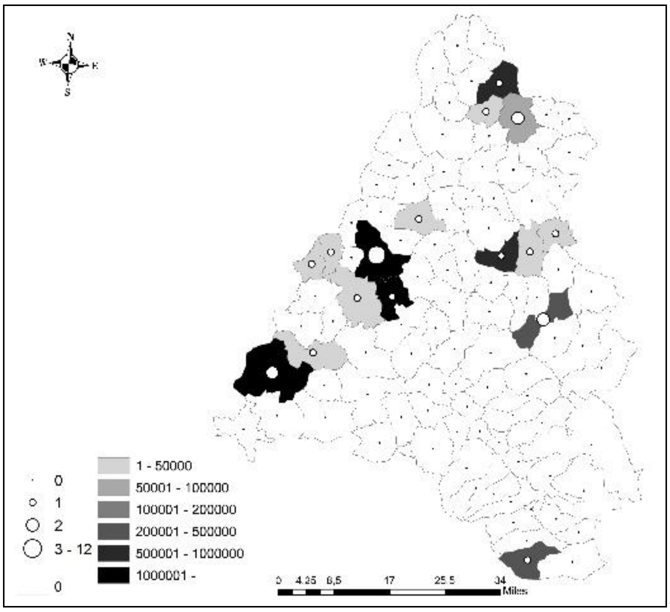

Figure 7. The distribution of number of tourism development projects and ERDF aids on LAU2 level for Bihor County within RO-HU CBC (Source: Own edit based on own calculation)

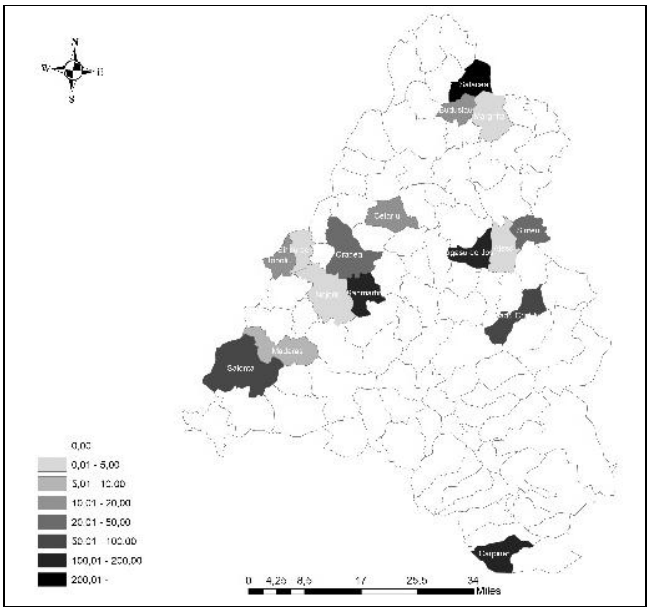

Figure 8. Territorial distribution of the share of partners in Bihor from ERDF aid per capita on LAU2 level regarding tourism development projects within RO-HU CBC

Sălacea had one winner project for cultural development, the commune positioned itself on the second scale with 958,558.06 euro total aid and it kept its first position having 308.22 euro per capita, although this amount is more than twice higher than in case of HU-RO Programme. In this regard, Sălacea has been one of the most successful local governments within the cross-border cooperation so far. Sânmartin and Salonta also appeared on the first rank with higher than one million euro financial support. The former had one high scale project for natural heritage conservation with 1,729,738.61 euro total aid, and it became the third by he distribution of aid in proportion of the population, having 160.13 euro per capita on the second scale. The latter had two projects, one small scale for cross-border cultural cooperation and one higher scale for environmental protection, gaining 1,528,980 euro non-refundable support. Salonta city appeared on the third scale with 78.85 euro aid per capita due to its higher number of inhabitants. Cărpinet had the second highest aid per capita with 191.25 euro, being on the second scale, though this commune has the second lowest population. Lugașu de Jos was on the second scale by total aid with one project, having 536,696.68 euro, and also on the second scale considering the aid per capita with 147.04 euro. Vadu Crișului had two projects as in the previous period, one for nature preservation and the other for cultural exchanges, although the total aid was 4,48% less in 2014-2020, it gained 349,851.16 euro. The commune positioned itself on the third rank by both its amount of financial support and aid per capita, which was 86.55 euro in proportion of the population. Marghita city was the only local government on the fifth scale in case of total aid. It had two small scale projects, both for cross-border community building, with a total aid of 76,500 euro, thus the city was the only one on the fifth scale. In proportion of the population, Marghita gained the fouth smallest amount, having 4.20 euro per capita on the seventh scale.

The remaining local administrative units earned less than 50 thousand euro for one project, positioning themselves on the sixth scale: Aleșd city gained 34,850 euro for cultural tourism development that was 3.09 euro per capita ranking itself on the seventh scale in this regard due to the higher number of population; Șinteu earned 31,025 euro in total for the preservation of multiculturality which was 27.48 euro per capita, being on the fourth scale, because it has the lowest number of inhabitants; Buduslău gained 28,900 euro total aid for cultural and sport events which was 13.97 euro per capita positioning on the fifth scale; Cetariu gained 29,325 euro total financial support for preservation of traditions which was 30.19% less than in 2007-2013 and it had 13.53 euro per capita being on the fifth scale; Toboliu earned 25,925 euro in total for cross-border events that was 12.37 euro per capita thus, it appeared in the fifth scale; Mădăras had 26,970.5 euro aid for partnership building in field of tourism which was 9.64 euro per capita positioning on the sixth scale in this regard; Girișu de Criș gained 13,175 euro in total for the organization of cross-border events and it positioned itself on the seventh scale in consideration of financial support per capita, with 3.41 euro; Nojorid had the smallest amount of aid per capita, because the 13,175 euro was 2.45 euro in proportion of the population for realization of cross-border events.

In case of indirect tourism development projects, ten local governments were present as partners which was 58.33% less in number of participant LAU2 settlements than between 2007-2013 programming period and the total amount of non-refundable aid was 13,993,830.17 euro, i.e. 38.67% less than within HU-RO Programme. Figure 9 presents the territorial distribution of number and total gained aid for projects for indirect tourism development on the level of local governments within Bihor and Figure 10 shows the distribution of aid per capita for these investments.

Oradea had eight winner projects within RO-HU Programme which showed 69.23% decrease in front of the previous programme, although the county seat had 8.46% increase in case of total gained aid, which was 11,598,064.12 euro. In this manner Oradea had participated to more high scale projects than in 2007-2013 period. The county seat was present in case of 72.73% of projects and gained the 82.88% of total aid within the studied category. This represents the importance of the municipality becoming again an outlier in this regard. Though, Oradea was the most highlighted local government based on the data used for Figure 9, it appeared on the third scale by aid per capita with 52.07 euro, being the third in line with 8.48% growth in front of HU-RO Programme. Mădăras earned the second highest amount of financial support, it appeared on the second scale with 549,936.4 euro in total which is more than twenty times higher than in case of HU-RO Programme. It was the only local government above one hundred euro aid per capita, it gained 196.48 euro in proportion of the population being on the first scale in this regard and Mădăras consequently was the most successful applicant of this category with one project for cross-border bicycle track development. Aleșd, Salonta and Diosig were on the third scale of ranking by the amount of total aid. Aleșd had two projects for improvement of health care services in emergency situations in mountain area of Bihor and one for disaster management with a total aid of 416,178.5 euro and the city earned 36.86 euro per capita, positioning itself on the fourth scale in this regard. Salonta city owned two winner projects for the same health care service improvement as in case of Aleșd and one for bicycle road development. The city gained 406,247.64 euro total, which was 20.92 euro per capita ranking on fifth scale, showing 86.57% decrease in front of HU-RO Programme. Diosig had one project for improvement of disaster management with 296,012.5 euro total aid which was 41.91 euro per capita, in this regard the commune appeared on the fourth scale on Figure 10.

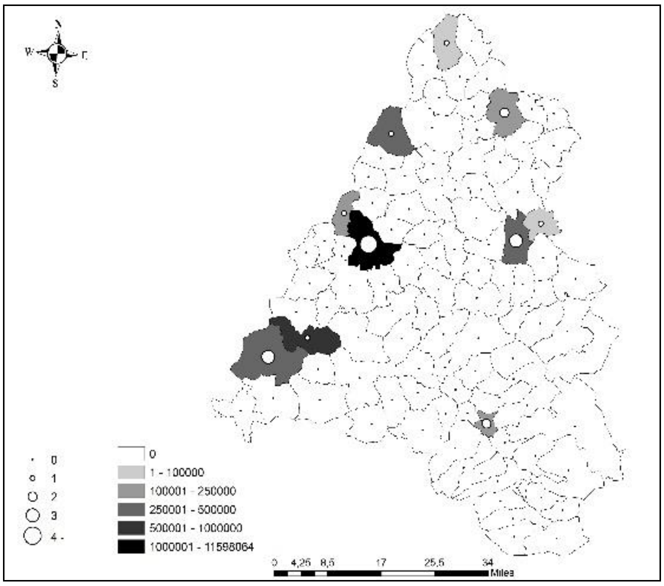

Figure 9. The distribution of number of indirect tourism development projects and ERDF aids on LAU2 level for Bihor County within RO-HU CBC (Source: Own edit based on own calculation)

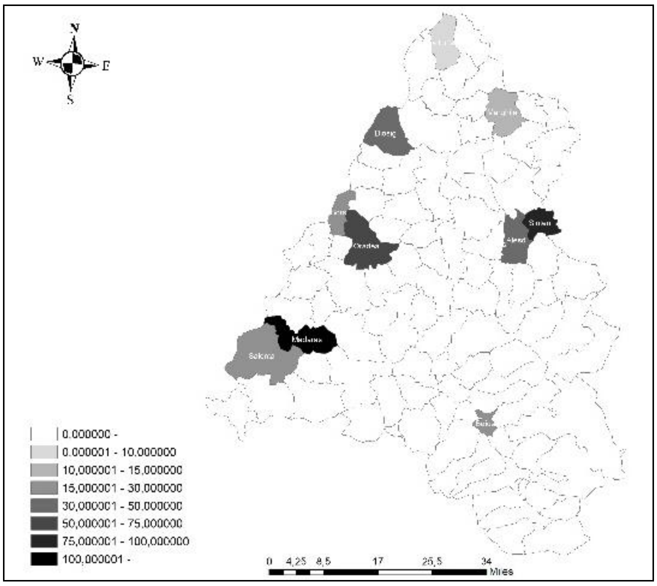

Figure 10. Territorial distribution of the share of partners in Bihor from ERDF aid per capita on LAU2 level regarding tourism development projects within RO-HU CBC

Three local government were on the fourth scale, Beiuș and Marghita with two projects and Borș with one. Beiuș had 235,188.64 euro ERDF financial support for development projects for the improvement of accessing emergency health care services in mountain areas, the aid was 20.5 euro in proportion of the population, being on the fifth scale. Marghita participated to the same projects as Beiuș with 230,981.04 non-refundable aid which was 12.67 euro per capita, in this matter the city appeared on the sixth scale according to Figure 10. Borș gained 103,827.5 euro aid for the improvement of drinking water quality, the commune was on the fifth scale with 24.92 euro per capita. Valea lui Mihai city and Șinteu commune were on the fifth scale having less than one hundred thousand euro aid in total regarding Figure 9. Valea lui Mihai gained 66,523.55 euro aid participating to the same project as Borș but with the lowest financial support, in addition the amount showed 14.08% decrease in front of HU-RO Programme, and the city had 6.02 euro per capita being on the seventh scale in this regard. Șinteu is an exceptional local government in this category due to the fact that it had the second lowest non-refundable ERDF aid, i.e. 90,870.24 euro, although the commune had the second highest financial support with 80.49 euro per capita. In proportion of the population, this commune had the lowest number of inhabitants between the participant local governments which caused that it appeared on the second scale by Figure 10.

CONCLUSION

Bihor County owes several valuable resources for the development of tourism, which attractive elements could be exploited on a higher level and joined to the international and regional 'tourist circuit' in a complementary manner within the border area. The development of tourism has been highlighted for economic progression and enhancement of living standards of local communities in each level of strategies and also in accordance with development initiatives of cross-border cooperation, based on common objectives of the eligible area. As far as the evolution and compatibility of strategies are concerned within the two studied period, the constant national objective was that tourism should be one of the most supported field of economic activities where the potentials are geographically concentrated. At regional level, the development of tourism was subordinated to economic priorities in both cases and the documents named similar initiatives which refers to the fact that earlier deficiencies and issues were not resolved and they require further investments. The strategy of Bihor County content more recommended intervention activities between 2014-2020 period, though the main objectives remain similar with the former one. The main difference and also progress was at the level of the county where the strategy for 2014-2020 programming period highlighted the sustainable development of tourism in Apuseni Mountains as one of the five strategic initiatives for the exploitation of tourist potential of Bihor, which formerly was neglected in front of spa and health, cultural and natural tourism resources. Although, as in accordance with previous researchers (ex.: Dodescu and Borma, 2017; Bădulescu et al., 2014 etc.), the county should benefit from complementarity building a competitive advantage for cross-border region focusing on common tourist package development and marketing activities through further Interreg programmes, thereby also increasing the overnight stays of tourists.

Within the framework of Interreg IV and V cross-border operational programmes, the former contained more small-scale projects which is also approved by the fact that for 453 project it had only 28.42% more ERDF aid than in case what Interreg V had for 104 projects. The aggregated share of Bihor from total aid was relatively high within both programmes, between 22-23%, the ERDF allocation for tourism development projects was 123.2% higher in case of RO-HU Programme for the same number of investments and for indirect tourism development Bihor gained 18.39% more financial support for 51 projects within HU-RO Programme, than RO-HU Programme for 11 projects. In conclusion, Bihor County performed well within both Interreg Programmes and it had more middle and higher-scale investment in the latter programming period that directly or indirectly concerned the development of tourism. In case of examining territorial division of local governments where the applicants were located, two types of inequalities can be observed. On the one hand we can talk about the inequalities of the location of participant local governments within the county, on the other hand there exists significant disproportions between the distribution of parties from urban and rural territories. Moreover, most rural local governments are also peripherical border territories or periphery of urban areas, although the former benefitted more from the examined Interreg cooperation programmes due to existed twin-city agreements, other preexisting connections, cultural and ethnical similarities etc. which also contributed to territorial inequalities of the studied categories of projects.

Firstly, there can be observed inequalities in case of tourism development projects within both examined programmes. In case of HU-RO Programme, five of eleven participated local governments are located near to Hungarian-Romanian border area, representing 45.45% of total number of local administrative units, with the 82.66% of total aid of parties in Bihor County. Besides, there appeared the most significant territorial inequality in case of the south-eastern area of the county, it had disadvantageous situation because only two local governments participated, Ștei city with the lowest gained aid among the cities, in proportion it had 0.87% of financial support for the tourism development projects of this category, and Rieni with the lowest gained aid from this group, earning the 0.24% share of financial support within Bihor. Furthermore, there exists the domination of urban areas, three of eleven applicants were from cities, that is 27.27% of participant local governments, with the 71.65% of gained aid for tourism development by the county. As far as Interreg V is concerned, same territorial inequalities can be observed in case of total distribution of participant territories. In addition, except of Cărpinet commune, all the other fifteen local government were from urban and the catchment areas of these urban centers. Consequently, the dominance of urban areas became significant again with the 70.15% share of ERDF aid of this category of projects. Oradea with its metropolitan area owed 71.11% of non-refundable support.

Moreover, considering the emphasis of local governments from mountainous areas, as the strategy of the county for 2014-2020 programming period highlighted its significance from the point of view of tourism development, five of eleven participant local governments can be enumerated in case of Interreg IV, that is 45.45% of the parties, with the 9.96% of aid share of tourism development project funding from Bihor, with 611,561.7 euro. Within Interreg V, the 25% of local governments are located in the mountain areas, four of sixteen, with less percent of share of non-refundable aid than in the previous period, that was only 5.56, but it was 25.33% higher amount of funding, i.e. 766,478.63 euro. Vadu Crișului was present in case of both programmes as a commune from mountainous area. Territorial inequalities are rather intense within indirect tourism development, however, there exist the most significant territorial inequalities in case of participant local governments within the Interreg IV. Except of Lugașu de Joș, the other 23 participant territories are located alongside the Hungarian-Romanian borderline, therefore the eastern and south-eastern part of the county was not represented within this category of projects in HU-RO Programme, consequently the mountainous areas were neglected in totality. Moreover, the dominance of urban areas was significant, they owned 62.65% share of gained aid of the category with 14,295,905.84 euro in total. In contrast with Interreg IV, the territorial distribution of this project type throughout the county were more balanced within RO-HU Programme, although the dominance of border areas is exceptional again with 60% of ten participant areas but 92.56% of total financial support, gaining 12,953,183 euro aid, therefore, within the distribution of studied project categories this is the most intense urban-rural inequality. In addition, two local governments were applicants from mountainous areas, Aleșd and Șinteu, having 507,048.78 euro aid which was only 3.62% of financial support of this category within Bihor.

Finally, ranking the most successful local administrative unites in accessing non-refundable fianancial support, in case of HU-RO tourism development projects Oradea, Diosig and Sălacea gained the highest amount of total aid, and Vadu Crișului was the fourth, although Sălacea, Diosig and Vadu Crișului had the highest aid per capita. The ranking for RO-HU Programme within the same category is Oradea, Sânmartin, Salonta, although Sălacea was the next, and for aid per capita the order is Sălacea, Cărpinet and Sânmartin. In conclusion, we can state that Sălacea was the most successful within this category of projects, this commune was present in the front line in both programmes, it was the third and the fourt in case of total gained aid but the first in gained aid per capita for both periods. Diosig and Vadu Crișului were also in front line within HU-RO, and Sânmartin in case of RO-HU both in total gained aid and in aid per capita. Therefore, despite the dominance of urban areas and the outstanding position of Oradea, the rural territories became the greatest winners of Interreg IV and V between the applicants of tourism development projects considering their size.

For the type of indirect tourism development projects within HU-RO, the most successful were Oradea, Salonta, Roșiori, but Cefa and Nojorid was following them, and the ranking for the gained aid in proportion of the population was Roșiori, Cefa, Toboliu, after came Nojorid and Salonta. In case of the RO-HU Programme, Oradea, Mădăras and Aleșd gaind the highest amounts of aid in total but Mădăras became the first, after came Șinteu and Oradea within the ranking of financial support per capita. As a result, in spite of the dominance of the county seat and other urban territories, the rural areas were also exceptional in accessing non-refundable funds. In addition, in proportion of the population, rural areas were more successful again in case of indirect tourism development projects as is case of tourism development projects category.

In conclusion, despite the problem of favoring urban areas (in accordance with Badulescu et al., 2016), the present research proved the significance of applicants from rural local governments within both programmes, considering their success in accessing financial aid not only in the level of aggregated sum but also in proportion of the population, balancing the differences between the size of localities. In case of mountainous areas that were often neglected, Vadu Crișului is an exception which was represented in both programmes with projects for the development of tourism. Also, Șinteu can be highlighted in 2014-2020 which had two projects, one for tourism development and another which indirectly enabled the development of tourism. Șinteu had the second highest aid per capita in case of the latter. Besides the above-mentioned communes, Cărpinet had the second highest aid per capita for its tourism development project within 2014-2020, although it had the second lowest number of inhabitants between the applicants.

Despite the fact that the strategy of Bihor County emphasized the sustainable development of tourism in Apuseni Mountains, the Interreg V did not highlight its importance and the implemented projects were not sufficient for implementation of objectives in a higher level. In this regard, further and higher-scale investments are required in the following programming periods. Focusing on the principle of complementarity within the cross-border region, more joint marketing activities and deliberate tourist packages are required for the trans-frontier area to promote it as destination, also for enhancing local knowledge and local tourism, in order to involve the tourist resources given by Apuseni Mountains and to enhance the compatibility of Interreg with the local tourism development strategy.

Due to the fact that this paper only contains the characteristics of the development of tourism through cross-border cooperation programmes, it is limited in giving a whole perspective of the implementation of strategies that concern Bihor. Further researches are required to study the field of territorial distribution of projects for tourism development and those which indirectly help its improvement, also the success of local governments in accessing non-refundable aid for tourism development, involving other tender opportunities, such as the Regional Operation Programmes between 2007-2013 and 2014-2020.

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THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON GUEST SATISFACTION IN HOTEL MANAGEMENT: AN EMPIRICAL STUDY OF LUXURY HOTELS

Hadeel Sa'ad AL-HYARI *
Department of Financial and Management Sciences, Al Salt Collage for Human Sciences, Al-Balqa Applied University, Salt, Jordan, e-mail: hadeel.hyari@bau.edu.jo

Hisham Mohammad AL-SMADI
Department of Financial and Administrative Sciences, Ajloun College, AL-Balqa Applied University, Ajloun, Jordan, e-mail: dr-hsmadi@bau.edu.jo

Sulaiman R. WESHAH
Accounting and Accounting Information System Department, Amman University College for Financial and Administrative Sciences, Al-Balqa Applied University, Amman, Jordan, e-mail: sulaiman.weshah@bau.edu.jo

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Abstract: This study examines the impact of artificial intelligence (AI) (Personalized Guest Experience, Chatbots and Virtual Assistants, Revenue Management, Operational Efficiency, Fraud Detection and Security, Predictive Maintenance) on guest satisfaction in luxury hotels from perspective of managers. A quantitative methodology was employed through adopting questionnaire that was self-administered by (89) managers within luxury five stars hotels in Amman – Jordan. SPSS was used to tackle the primary data, results of study was able to accepted study hypotheses arguing that artificial intelligence has the ability to increase guest satisfaction in luxury hotels. Results indicated that AI in hospitality industry has the ability to revolutionize the concept of guest satisfaction through easing the process of services and increase their loyalty as well. Study indicated that the highest agreement was for chatbots and virtual assistants in influence. However, it argued that while AI has the potential to significantly enhance guest satisfaction in luxury hotels, it is essential to balance the use of AI with human interaction. Many guests still value the personal touch and human connection that comes with traditional hospitality. Therefore, it is important for hotels to ensure that AI is used to enhance, rather than replace, human interaction with guests. Study recommended that hotels should be focused on providing personalized experiences, streamlining operations, and enhancing convenience and comfort in order to increase guest satisfaction. Further recommendations were presented in the study. Significance of study lies in the fact that examining the impact of AI in increasing guest satisfaction in luxury hotel play a role in increasing competitive advantage, help luxury hotels save costs by automating tasks and reducing the need for human labor and stay ahead of the curve and embrace new technologies such as AI. Originality of study is in the fact that it help in developing new theories and frameworks for understanding the complex relationship between technology and guest satisfaction in the hospitality industry.

Key words: hotel management, luxury hotels, chains, guest, personalized experience, chatbots and virtual assistants, revenue management, operational efficiency, fraud detection and security, predictive maintenance

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INTRODUCTION

Nam et al (2021) and Nozawa et al (2022) argued that in today's digital age, technology has become an integral part of our lives, and the hospitality industry is no exception. Luxury hotels are constantly seeking ways to enhance the guest experience and increase satisfaction, and technology has proven to be a valuable tool in achieving these goals . From the moment guests make their reservations to the time they check out, technology plays a crucial role in every aspect of their stay (Roy et al, 2020). With the help of technology, luxury hotels can personalize the guest experience, streamline operations, and provide a seamless experience that exceeds guest expectations. In this way, technology has become a key factor in enhancing guest satisfaction in luxury hotels, and its role is only set to grow in the future (Jabeen et al, 2022).

Nam et al (2021) argued that the adoption of AI and robotics in the hotel industry is still in its early stages, but that there are already several examples of hotels that have implemented these technologies successfully. Nozawa et al (2022) identified several concerns among consumers about the use of AI in hospitality sector including concerns about data privacy and security, the potential for job displacement, and the loss of human interaction in the dining experience. Roy et al (2020) identified several concerns about the use of AI in hospitality services, including concerns about data privacy and security, the potential for job displacement, and the loss of human interaction in the service experience.

Jabeen et al (2022) noted that the adoption of automation and AI in the hospitality and tourism industry is still in its early stages, but that there are already several examples of companies that have implemented these technologies successfully. On the other hand, Prentice et al (2020) provided valuable insights into the impact of AI and employee service

* Corresponding author

quality on customer satisfaction and loyalty in the hospitality industry. The study suggested that while AI technologies can enhance the guest experience and improve operational efficiency, the impact on customer satisfaction and loyalty is dependent on the quality of employee service. Hussein et al (2022) argued that while there are challenges associated with the adoption of AI in the UAE hospitality industry, the potential benefits are significant, and that hotels that are able to effectively integrate these technologies into their operations will have a competitive advantage in the marketplace.

Wang (2022) provided valuable insights into the impact of service quality of hotel intelligent systems on customer satisfaction, using AI-based evaluation methods. Limna (2022) identified several challenges associated with the adoption of AI in the hospitality industry, including concerns about data privacy and security, the potential for job displacement, and the need for staff training and support. Launching from the literary gap above, this current research study seeks to examine the impact of artificial intelligence (AI) in terms of (Personalized Guest Experience, Chatbots and Virtual Assistants, Revenue Management, Operational Efficiency, Fraud Detection and Security, Predictive Maintenance) on guest satisfaction in hotel management by applying an empirical study of luxury hotels.

LITERATURE REVIEW

1. AI in Hotel Management

Bharwani and Mathews (2021) noted that artificial intelligence (AI) has become an increasingly important tool for hotel management in recent years. AI technologies help hotels improve operational efficiency, enhance the guest experience, and increase revenue. Mnyakin (2023), Kacar (2023) and Tong-On et al (2021) argued that there are several approaches through which hotels can make use of AI in hotel management, such approaches included:

- Chatbots: Chatbots are AI-powered conversational agents that can handle customer inquiries, requests, and complaints. These bots can be integrated into a hotel's website or mobile application, providing guests with a quick and efficient way to access information and services. Chatbots are increasingly being used in the hotel management industry to improve customer service and streamline operations. Chatbots are being used in hotel management by completing many tasks including automated check-in and check-out: Hotels are using chatbots to automate the check-in and check-out process. Guests can use the chatbot to check in, receive their room key, and check out, all without having to interact with hotel staff. Room service and concierge: Hotels are using chatbots to provide room service and concierge services to their guests. Guests can use the chatbot to order food, request additional amenities, and receive recommendations for local activities and attractions. Reservation and booking management: Hotels are using chatbots to manage reservations and bookings. Guests can use the chatbot to book a room, modify their reservation, and receive confirmation of their reservation. Customer service: Hotels are using chatbots to provide customer service to their guests. Guests can use the chatbot to ask questions, report issues, and receive assistance from hotel staff.
- Revenue management: AI can help hotels optimize pricing and revenue management by analyzing data on room occupancy, demand, and customer behavior. This can help hotels maximize revenue and profitability. Some examples of how AI is being used in revenue management in hotel management include dynamic pricing, demand forecasting, market segmentation, channel management and competitive analysis
- Personalization Experience: AI can be used to personalize the guest experience by analyzing data on customer preferences, behavior, and history. Artificial intelligence (AI) is being used in hotel management to personalize the guest experience and improve guest satisfaction. Personalizing experience through AI in hotels can be done through reaching personalized recommendations, customized room settings, voice assistants, loyalty programs and predictive analytics where hotels are using AI-powered predictive analytics to anticipate guest needs and preferences. For example, AI-powered systems can analyze data on past guest behavior and preferences to predict what amenities or services guests may need during their stay.
- Predictive maintenance: AI can be used to predict and prevent equipment failures and maintenance issues, reducing downtime and improving operational efficiency. Hotels are using AI to predict when equipment and systems may need maintenance, allowing them to perform maintenance proactively instead of reactively. This can reduce downtime and maintenance costs, while also improving the overall guest experience by ensuring that facilities are functioning properly. Artificial intelligence (AI) is being used in hotel management to predict maintenance needs and prevent equipment failures, leading to improved guest experiences and operational efficiency. Some examples of how AI is being used to predict maintenance include sensor networks, machine learning, real-time monitoring and automated alerts: Hotels are using AI-powered systems to automate alerts when equipment performance falls outside of normal parameters. This allows hotel staff to quickly identify potential issues and take corrective action before they become major problems.
- Security: AI can be used to enhance hotel security by monitoring guest behavior and identifying potential security threats. Some examples of how AI is being used to enhance security in hotel management include video surveillance, facial recognition, access control, threat detection and fraud detection. Overall, AI is being used in hotel management to enhance security and prevent potential threats to guests and staff. By leveraging AI-powered technologies, hotels can monitor activities in real-time, detect potential threats, restrict access to restricted areas, and detect fraudulent activities, leading to increased security and safety for guests and staff.

Pizam et al (2022) stated that AI technologies are becoming increasingly important for hotel management, enabling hotels to improve operational efficiency, enhance the guest experience, and increase revenue. As the use of AI continues to advance, it is likely that we will see more hotels adopting these technologies to stay competitive in the market. However, it is important to note that the adoption of AI in hotel management must be approached thoughtfully and with consideration for the impact on both guests and staff (Hashem, 2022). Careful planning and management are necessary to ensure that AI technologies are effectively integrated into hotel operations and can maximize their benefits for both the hotel and its guests (Hashem et al, 2020). Buhalis and Cheng (2020) argued that hotels now are using AI-powered chatbots and virtual assistants to provide personalized recommendations and assistance to guests. These chatbots and virtual assistants can answer common questions, recommend local activities and restaurants, and even make reservations. By using AI-powered chatbots and virtual assistants, hotels can provide 24/7 customer service and improve the overall guest experience.

From the perspective of Ponce (2022) hotels employ AI to analyze guest data, such as past bookings and preferences, to provide personalized recommendations and offers. By using AI to analyze guest data, hotels can provide a more personalized and tailored experience to guests, increasing guest satisfaction and loyalty. While Mohite (2020) revealed that hotels depend on AI to optimize their pricing and revenue management strategies. By analyzing data on occupancy rates, demand, and market trends, AI-powered revenue management systems can adjust pricing in real-time to maximize revenue and profitability. Markowitz et al (2023) argued that AI in hotels is used to analyze data on customer behavior and preferences to create targeted marketing and advertising campaigns. By using AI to analyze customer data, hotels can create more effective marketing and advertising campaigns that resonate with their target audience. Overall, AI is being used in the field of hotel management to improve guest experiences, increase efficiency, and drive profitability. By leveraging AI-powered technologies, hotels can provide a more personalized and seamless guest experience, while also optimizing their operations and improving their bottom line (Singh et al, 2022).

2. Luxury Hotels and Guest Satisfaction

According to Lee et al (2020), guest satisfaction refers to the level of satisfaction or happiness a guest experiences during their stay at a hotel or other hospitality establishment. Guest satisfaction is a crucial factor for the success of any hotel, as it can affect a guest's decision to return in the future and their likelihood to recommend the hotel to others. Ying et al (2020) argued that there are several factors that contribute to guest satisfaction; such as the quality of the hotel's amenities and services, the cleanliness and comfort of the rooms, the professionalism and friendliness of the staff, and the overall experience and value for money. Guests also expect a certain level of personalized attention and responsiveness to their needs and preferences. Padma and Ahn (2020) noted that in order to ensure guest satisfaction, hotels must prioritize the needs and preferences of their guests and strive to exceed their expectations. This can be achieved through a variety of strategies, such as personalized service, proactive problem-solving and ongoing communication with guests to gather feedback and address any concerns. Moise et al (2021) added that guest satisfaction is not only important for the success of individual hotels, but also for the industry as a whole. Satisfied guests are more likely to return to the same hotel or recommend it to others, leading to increased revenue and profitability for the hotel. Additionally, satisfied guests can help promote positive word-of-mouth about the hotel, which can attract new guests and improve the hotel's reputation.

Guest satisfaction was defined by Hashem and Ali (2019) as key performance indicator to how satisfied guests are with their overall experience at an organization. It is a measure of how well a hotel has met the expectations and needs of its guests, and how effectively it has delivered on its promise of service quality. Hashem (2021) added that guest satisfaction can be measured through a variety of methods, such as guest surveys, online reviews, and social media feedback. Such methods provide valuable insights into the guest experience and can help the hotel identify areas for improvement and make necessary changes to enhance the guest experience. On the other hand, Mariani and Borghi (2023) argued that guest satisfaction is important, as satisfied guests are more likely to return to the same hotel in the future, leading to repeat business and increased revenue. In addition to that, satisfied guests are more likely to leave positive reviews and ratings, which can enhance the hotel's reputation and attract new customers. Third, satisfied guests are more likely to recommend the hotel to their friends and family, leading to increased business through positive word-of-mouth.

According to Limna (2022) and Mariani and Borghi (2021) guest satisfaction is of utmost importance for luxury hotels for several reasons including the fact that satisfied guests are more likely to return to the same hotel in the future, which is especially important for luxury hotels where repeat business is a significant source of revenue. Wang (2022) added that satisfied guests are more likely to recommend the hotel to their friends and family, leading to increased business through positive word-of-mouth. From another perspective, Prentice et al (2020) stated that luxury hotels rely heavily on their reputation to attract and retain customers. Satisfied guests are more likely to leave positive reviews and ratings, which can enhance the hotel's reputation and lead to increased bookings. In addition to that, satisfied guests are more likely to develop brand loyalty, becoming advocates for the hotel and promoting it to others. Hussein et al (2022) saw that luxury hotel industry is highly competitive, and guest satisfaction can provide a competitive edge by differentiating the hotel from its competitors and attracting new customers, guest satisfaction is crucial for luxury hotels to maintain repeat business, positive word-of-mouth, reputation, brand loyalty, and a competitive edge in the market.

3. Worldwide Luxury Hotels Chains

Kong et al (2021) and Yik et al (2022) argued that there are many luxury hotel chains worldwide that have been innovative in their approach to guest satisfaction. Examples of them:

- Four Seasons: Four Seasons is a luxury hotel chain that has long been known for its exceptional customer service. The chain has implemented a number of initiatives to improve guest satisfaction, including the Four Seasons App, which allows guests to customize their stay, order room service, and make requests directly from their mobile device.
- The Ritz-Carlton: The Ritz-Carlton has a strong focus on personalized service and creating a memorable experience for guests. The chain has implemented a number of initiatives to improve guest satisfaction, including the creation of a "mystery shopper" program to ensure that staff are delivering exceptional service at all times.

- St. Regis: St. Regis is a luxury hotel chain that has been praised for its attention to detail and commitment to providing the highest level of service to guests. The chain has implemented a number of initiatives to improve guest satisfaction; including a "Butler Service", that offers personalized assistance with everything from packing and unpacking to arranging transportation. In terms of employing AI to reach the highest level of guest satisfaction, some luxury hotel chains took to the max considering that these hotels were aware that AI is increasingly being employed in the hospitality industry to enhance guest satisfaction and improve operational efficiency. Some examples of luxury hotel chains worldwide that have implemented AI technology in guest satisfaction Bharwani and Mathews (2021); Wang (2020) and Prentice (2020):
- Marriott International: Marriott International has implemented AI-powered chatbots to enhance the guest experience and improve customer service. The chatbots use natural language processing (NLP) to provide guests with instant responses to their queries and requests, enabling them to access information and services quickly and easily.
- Hilton Hotels & Resorts: Hilton Hotels & Resorts has implemented an AI-powered concierge service that uses machine learning to provide personalized recommendations and assistance to guests. The concierge service can suggest local restaurants, attractions, and activities based on the guest's preferences and previous behavior.
- InterContinental Hotels Group (IHG): IHG has implemented AI-powered voice assistants in its hotel rooms to provide guests with personalized services and recommendations. The voice assistants can control room temperature, lighting, and TV, as well as provide information about hotel services and local attractions.

4. Related Studies

Nam et al (2021) explored the adoption of artificial intelligence (AI) and robotics in the hotel industry and identified the prospects and challenges associated with this adoption. The authors conducted a literature review of previous research on the adoption of AI and robotics in the hotel industry. They analyzed the literature to identify the main trends, drivers, and challenges associated with the adoption of these technologies. The authors found that the adoption of AI and robotics in the hotel industry is driven by several factors, including the need to improve **operational efficiency, enhance the guest experience, and reduce labor costs.** They also identified several challenges associated with the adoption of these technologies, including concerns about **job displacement, data privacy and security, and the need for staff training and support**.

Nozawa et al (2022) investigated consumer attitudes and responses to the use of artificial intelligence (AI) in restaurants, both in luxury and non-luxury settings. The authors conducted a survey of 300 consumers in the United States to assess their attitudes and responses to the use of AI in restaurants. The survey was designed to elicit information about consumers' perceptions of AI, their attitudes toward the use of AI in restaurants, and their willingness to use AI-based restaurant services. The authors found that consumers generally have positive attitudes toward the use of AI in restaurants, particularly in the areas of order taking and payment processing; they also found that consumers in luxury restaurants were more likely to have positive attitudes toward the use of AI than consumers in non-luxury restaurants.

Roy et al (2020) explored customer acceptance of the use of artificial intelligence (AI) in the hospitality industry in India. The authors conducted a survey of 300 customers in the Indian hospitality sector to assess their attitudes and acceptance of the use of AI in hospitality services. The survey was designed to elicit information about customers' perceptions of AI, their attitudes toward the use of AI in hospitality services, and their willingness to use AI-based services. The authors found that customers in the Indian hospitality sector generally have positive attitudes toward the use of AI in hospitality services, particularly in the areas of **booking and reservation management and personalized services**. They also found that customers who are younger, more educated, and have higher incomes are more likely to have positive attitudes toward the use of AI in hospitality services. Jabeen et al (2022) provided an overview of the current state of automation and artificial intelligence (AI) in the hospitality and tourism industry, and identified the challenges and opportunities associated with the adoption of these technologies. The authors found that the adoption of automation and AI in the hospitality and tourism industry is driven by several factors, including the need to improve **operational efficiency, enhance the guest experience, and reduce labor costs**. Hussein et al (2022) explored the potential of artificial intelligence (AI) in providing hotels with a competitive advantage, and identified the challenges and opportunities associated with the adoption of these technologies in the United Arab Emirates (UAE). The authors conducted a qualitative study using semi-structured interviews with 20 hotel managers and IT professionals in the UAE. The authors found that hotels in the UAE are increasingly adopting AI technologies to improve **operational efficiency, enhance the guest experience, and gain a competitive advantage**. They also identified several challenges associated with the adoption of AI, including concerns about d**ata privacy and security, the need for staff training and support, and the high cost of implementation**.

Prentice et al (2020) investigated the impact of artificial intelligence (AI) and employee service quality on customer satisfaction and loyalty in the hospitality industry. The authors conducted a survey of 400 customers who had recently stayed at a hotel to assess their perceptions of AI and employee service quality, as well as their levels of satisfaction and loyalty to the hotel. The authors found that while customers generally have positive attitudes toward the use of AI in the hospitality industry, the impact of AI on customer satisfaction and loyalty is mediated by employee service quality. Specifically, the authors found that the **positive impact of AI on customer satisfaction and loyalty** is stronger when employees provide high levels of service quality. The authors concluded that while the use of AI in the hospitality industry can enhance the **guest experience and improve operational efficiency**, the impact of these technologies on customer satisfaction and loyalty is dependent on the quality of employee service. They also noted the importance of employee training and support to ensure that employees are able to effectively use AI technologies to enhance the guest experience.

Wang (2022) investigated the impact of service quality of hotel intelligent systems on customer satisfaction, using artificial intelligence (AI) evaluation. The author collected data from 300 customers who had recently stayed at a hotel and used the hotel's intelligent system. The author used an AI-based evaluation system to assess the service quality of the hotel's intelligent system, and then analyzed the data to identify the relationship between service quality and customer satisfaction. The author found that there is **a positive relationship between the service quality of hotel intelligent systems and customer satisfaction**. The author also found that the use of AI-based evaluation systems **provide more accurate and objective assessments of service quality** than traditional evaluation methods. The author concluded that the use of high-quality intelligent systems in hotels enhance **the guest experience and improve customer satisfaction**.

Limna (2022) provided a comprehensive review of the current state of artificial intelligence (AI) in the hospitality industry, including its applications, benefits, challenges, and future prospects. The author conducted a literature review of previous research on the use of AI in the hospitality industry. The review included articles from academic journals, conference proceedings, and industry reports. The author found that the use of AI in the hospitality industry is becoming increasingly prevalent, with applications ranging from customer service and marketing to operations and management. The author identified several benefits associated with the adoption of AI in the hospitality industry, including **improved operational efficiency, enhanced guest experiences, and cost reductions**. Mariani and Borghi (2021) investigated customers' perceptions and evaluations of mechanical artificial intelligence (MAI) in hospitality services using online review analytics. The authors conducted a quantitative study using online review data of five hotels in Italy that had implemented various MAI technologies such as chatbots and virtual assistants. The authors found that the use of MAI in hospitality services was generally well-received by customers, with positive sentiment outweighing negative sentiment. However, the authors also found that the effectiveness of MAI varied depending on the specific application and context. For example, customers were more positive about MAI in customer service tasks such as booking and reservation management, but were less positive about MAI in more complex tasks such as personalized recommendations. The authors also found that the perceived quality of MAI was positively associated with overall **customer satisfaction and loyalty, indicating the potential of MAI to enhance the guest experience and drive customer loyalty**.

Mariani and Borghi (2023) investigated customers' assessments of the impact of artificial intelligence (AI) on service production and resilient service operations in service industries. The authors conducted a quantitative study using survey data collected from 400 customers who had recently received services from companies that had implemented AI technologies. The authors found that customers generally have positive attitudes toward the use of AI in service industries, with high levels of satisfaction with AI-enabled service production. Specifically, customers identified the benefits of AI in terms of **increased efficiency, accuracy, and personalization of services**. Bharwani and Mathews (2021) explored the techno-business strategies used by luxury hotels to enhance guest experience. Authors depended on qualitative methodology based on in-depth interviews with senior managers of luxury hotels in India. The study focuses on the techno-business strategies employed by luxury hotels to enhance guest experience, including the use of technology such as AI, mobile applications, and social media. The study found that luxury hotels are increasingly using technology to enhance the guest experience and increase guest satisfaction. The use of **AI-powered chatbots and virtual assistants** to provide **personalized recommendations** and assistance to guests was identified as a key strategy for enhancing guest experience. The study also found that mobile applications and social media are being used to improve communication with guests and provide them with a more seamless and convenient experience. The study highlights the importance of integrating technology with traditional hospitality practices to provide guests with a personalized and memorable experience.

MODEL, HYPOTHESES AND OBJECTIVES OF STUDY

Launching from the above argument, this current study highlighted the relationship between variables as according to the following model:

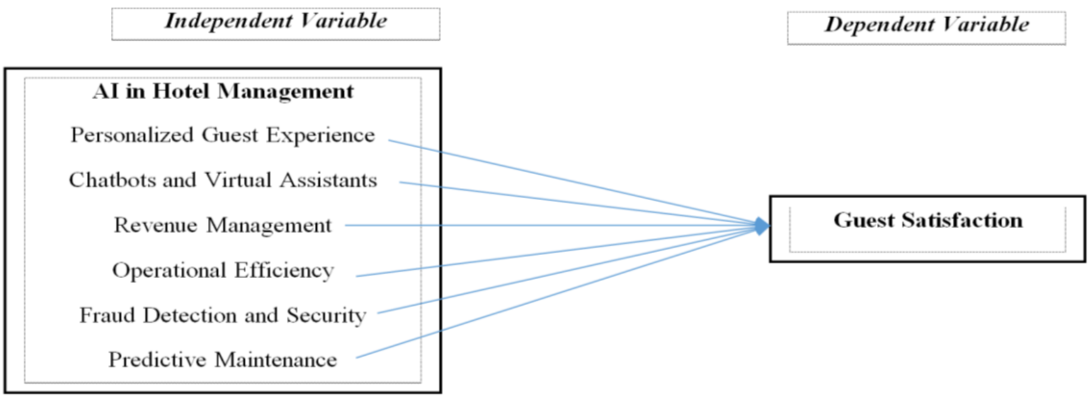

Figure 1. Study Model (Mnyakin, 2023; Kacar, 2023)

From above model, researcher was able to reach the following set of hypotheses:

Main Hypothesis:

H: AI in luxury hotels facilitates a better guest satisfaction from perspective of managers within five stars hotels

Sub-Hypotheses:

H1: Personalized guest experience facilitates a better guest satisfaction from perspective of managers within five stars hotels

H2: Chatbots and virtual assistants facilitates a better guest satisfaction from perspective of managers within five stars hotels

H3: Revenue management facilitates a better guest satisfaction from perspective of managers within five stars hotels
H4: Operational efficiency facilitates a better guest satisfaction from perspective of managers within five stars hotels
H5: Fraud detection and security facilitates a better guest satisfaction from perspective of managers within five stars hotels
H6: Predictive maintenance facilitates a better guest satisfaction from perspective of managers within five stars hotels

METHODS AND MATERIALS

1. Methodological Approach

Quantitative methodology was adopted in current study as it appeared to be the most suitable for gathering primary data from the largest population there could be.

2. Population and Sampling

Population of study consisted of managers within five stars hotels in Amman the Jordanian capital. Total of five stars hotels in Amman reached (35) hotels which were classified as luxury hotels. Total of (3) mangers were taken from each hotels which made a total convenient sample of (35*3 = 105) managers to respond the study questionnaire. After application process, author was able to retrieve (89) properly filled questionnaires which were valid for statistical processing. This indicated a response rate of (84.7%) as statistically accepted.

3. Tool of Study

Through the aid of previous studies, researcher was able to build a questionnaire based on likert 5-point scale. The questionnaire consisted of two main sections. The first section took into perspective demographics of study sample; while the other section presented statements related to study sub-variables including (Personalized Guest Experience, Chatbots and Virtual Assistants, Revenue Management, Operational Efficiency, Fraud Detection and Security, Predictive Maintenance) and (guest satisfaction) as a dependent variable. The questionnaire was presented before a group of specialized professors in the fields for the purpose of arbitration.

After arbitration process; the questionnaire was modified and fixed according to their perspective in a way that increased the reliability and consistency of questionnaire items with the main aim of study. In its final version, the questionnaire consisted of (37) statements divided on sub-variables of study.

Table 1. Alpha Values
(Source: SPSS Prepared the Authors)

Variable	Alpha
Personalized Guest Experience	0.943
Chatbots and Virtual Assistants	0.881
Revenue Management	0.856
Operational Efficiency	0.887
Fraud Detection and Security	0.938
Predictive Maintenance	0.935
Guest Satisfaction	0.958

Table 2. Demographics
(Source: SPSS Prepared the Authors)

	Frequency	Percent
Age		
22-26	10	11.2
27-31	17	19.1
32-36	21	23.6
+37	41	46.1
Gender		
Male	65	73.0
Female	24	27.0
Education		
BA	69	77.5
MA	20	22.5
Experience		
2-5	12	13.5
6-9	18	20.2
10-13	26	29.2
+14	33	37.1
Total	89	100.0

Table 3. Questionnaire Analysis (Source: SPSS Prepared the Authors)	Mean	Std. Deviation
AI can analyze guest data to create personalized experiences	3.854	.948
Adopting AI can customize room amenities for special guests	3.854	.972
AI has the ability to personalize restaurant recommendations based on dietary preferences	3.888	.885
AI can curate activity itineraries based on guest interests.	3.730	.986
AI can enhance the overall guest experience and increase guest satisfaction.	3.753	1.037
Personalized Guest Experience	**3.827**	**.871**
AI-powered chatbots and virtual assistants can provide 24/7 assistance to guests	3.258	1.257
It facilitates answering their questions and fulfilling their requests in real-time	3.843	.916
Chatbots and virtual assistants can improve operational efficiency	3.753	1.026
It can provide a more seamless and convenient experience for guests	4.056	.759
Chatbots and virtual assistants can lead to increased guest satisfaction.	3.798	.881
Chatbots and Virtual Assistants	**3.742**	**.809**
AI can analyze data on room rates and occupancy rates	3.652	.841
It can deal with guest demographics to optimize pricing strategies, such as dynamic pricing	3.303	1.142
AI can personalize pricing based on guest profiles	3.618	.886
This can increase revenue and profitability of hotels	3.697	.884
AI can provide competitive prices that meet guest expectations.	3.843	.976
Revenue Management	**3.622**	**.758**
Employing AI can automate routine tasks such as check-in and check-out processes	4.079	.882
It manages room assignments, and housekeeping schedules	4.022	.953
It can free up staff time to focus on providing personalized service to guests	3.955	1.117
Employing AI in hotel management can result in a more efficient and effective luxury hotel experience	3.708	.944
AI has the ability to increase guest satisfaction.	3.539	1.023
Operational Efficiency	**3.861**	**.819**
AI can monitor and analyze guest behavior patterns and transactions to detect potential fraud and security threats	3.730	.974
It ca monitor credit card fraud or identity theft	3.798	.967
AI is useful for luxury hotels maintain to secure environment for guests	3.753	.980
It can increase guest satisfaction and trust in the hotel	3.416	.998
It has the ability to provide safe and secure environment for guests	3.360	.980

Fraud Detection and Security	**3.611**	**.878**
AI can use sensors and data analytics to predict maintenance needs and equipment failures	3.562	1.087
AI allow luxury hotels to schedule maintenance before issues impact the guest experience	3.067	1.204
AI improve operational efficiency and quality of services presented	3.247	1.058
It can ensure that luxury hotels provide a reliable and high-quality experience for guests	3.360	1.141
It can lead to increased guest satisfaction through 24/7 high quality services	3.607	1.062
Predictive Maintenance	**3.369**	**.990**
The hotel is aware that guest satisfaction is the cornerstone of successful luxury hotel management.	3.382	1.163
Luxury hotel management must invest in the development of a customer-centric culture.	3.506	1.035
Luxury hotel management must monitor guest satisfaction through regular feedback and surveys.	3.618	1.103
Luxury hotel management must manage guest expectations by being transparent and providing clear information about the hotel's services, amenities, and policies.	3.775	.938
Luxury hotel management must invest in the development of staff training programs that focus on delivering exceptional service.	3.416	1.166
Luxury hotel management must prioritize the safety and security of guests.	3.607	1.040
Luxury hotel management must value guest feedback and use it to drive continuous improvement.	3.652	1.046
Guest Satisfaction	**3.565**	**.958**

4. Screening of Primary Data

Statistical package for social sciences SPSS was employed in order to screen and analyze primary data. The reliability of the study was evaluated using Cronbach Alpha. Because each variable's alpha value was higher than the bare minimum permitted percentage of 0.70, it was acceptable and table 1 below confirmed the reliability and consistency of study tool (Sekaran and Bougie, 2016).

Table 4. Multicollinearity test
(Source: SPSS Prepared the Authors)

Variable	Tolerance	VIF
Personalized Guest Experience	.373	2.681
Chatbots and Virtual Assistants	.320	3.122
Revenue Management	.439	2.279
Operational Efficiency	.504	1.985
Fraud Detection and Security	.710	1.408
Predictive Maintenance	.954	1.048

RESULTS AND DISCUSSION

1. Demographics

Table 2 below presented frequency and percentage of study sample's demographics, it was seen that all respondents were males forming 73% of total sample who were more than 37 years old and formed 46.1%. Also, majority of respondents held BA degree forming 77.5% with an experience of more than 14 years forming 37.1% of total sample.

2. Questionnaire Analysis

Table 3 below presented the mean and standard deviation of questionnaire analysis. It was seen that variables and statements were positively received as they all scored higher than mean of scale 3.00. the highest variable was Personalized Guest Experience and scored 3.82/5.00 compared to the lowest mean – but still positive – scored by Predictive Maintenance with mean of 3.36/5.00.

3. Multicollinearity test

Calculations for VIF and Tolerance were performed on the independent variables to look for multicollinearity. As it appeared in table 4 below, there was no multicollinearity in the data, as shown by the fact that all of the VIF values in the table 4 were less than 10 and all of the tolerance values were more than 0.10 (Gujarati and Porter, 2009).

4. Hypotheses Testing

H: AI in luxury hotels facilitates a better guest satisfaction from perspective of managers within 5 stars hotels

Multiple regression was used to test the aforementioned hypothesis, and the findings indicated that the F value of 29.991 was significant at the 0.05 level. This suggested *"AI in luxury hotels facilitates a better guest satisfaction from perspective of operational managers within 5 stars hotels"*. Additionally, it was found that the correlation coefficient, r=0.829, was high and that the independent variables accounted for **68.7%** of the variation in the dependent variable under study.

Table 5. Main Hypothesis Testing (Source: SPSS Prepared the Authors)

Coefficients							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.		
	B	Std. Error	Beta			R	R Square
(Constant)	-1.243	.396		-3.136	.002	.829[a]	.687
Personalized Guest Experience	.229	.111	.209	2.062	.042		
Chatbots and Virtual Assistants	.265	.129	.224	2.049	.044		
Revenue Management	.248	.118	.196	2.106	.038		
Operational Efficiency	.205	.102	.175	2.013	.047		
Fraud Detection and Security	.214	.080	.196	2.672	.009		
Predictive Maintenance	.141	.061	.146	2.309	.023		

Table 5 above presented coefficients and showed that the t-values for each variable were statistically significant at the 0.05 level, which accepted all presented sub-hypotheses as the following:

1. Personalized guest experience facilitates a better guest satisfaction from perspective of managers within five stars hotels, since t- value =2.062 was significant at 0.05 level
2. Chatbots and virtual assistants facilitates a better guest satisfaction from perspective of managers within five stars hotels, since t- value =2.049 was significant at 0.05 level and has the greatest influence on the guest satisfaction (as measured by beta=0.224).
3. Revenue management facilitates a better guest satisfaction from perspective of managers within five stars hotels ,since t- value =2.106 was significant at 0.05 level
4. Operational efficiency facilitates a better guest satisfaction from perspective of managers within five stars hotels, since t-value =2.103 was statistically significant at the 0.05 level
5. Fraud detection and security facilitates a better guest satisfaction from perspective of managers within five stars hotels, since t- value =2.672 was significant at 0.05 level
6. Predictive maintenance facilitates a better guest satisfaction from perspective of managers within five stars hotels, since t- value =2.309 was significant at 0.05 level

DISCUSSION

The current study aimed at examining the impact of artificial intelligence (AI) (Personalized Guest Experience, Chatbots and Virtual Assistants, Revenue Management, Operational Efficiency, Fraud Detection and Security, Predictive Maintenance) on guest satisfaction in luxury hotels in Amman from perspective of managers. Quantitative methodology was employed, and a questionnaire was self-administered by (89) managers within luxury five stars hotels in Amman – Jordan. SPSS was used to tackle the primary data through multicollinearity test and multiple regression.

The main hypothesis of study argued, "AI in luxury hotels facilitates a better guest satisfaction from perspective of managers within 5 stars hotels". This hypothesis was accepted, and it appeared that (AI) has the potential to revolutionize the hospitality industry by providing personalized and efficient services to guests. Luxury hotels, in particular, can benefit from the use of AI to enhance guest satisfaction and loyalty, leading to increased revenue and growth.

Results of study also indicated that one of the key ways in which AI can increase guest satisfaction in luxury hotels is by providing personalized experiences through gathering data on guests' preferences and behavior, such as their room preferences, dining preferences, and preferred activities. This result agreed with Roy et al (2020) and Mariani, and Borghi (2021) who argued that through personalized recommendations and experiences to guests, the hotel could enhance guests' overall experience.

Another result of study indicated that could increase guest satisfaction with chatbots. AI-powered chatbots are employed to provide guests with instant assistance and support. Chatbots can handle routine requests such as room service orders, housekeeping requests, and booking requests, freeing up staff to focus on tasks that are more complex. Such results came into agreement with Mariani and Borghi (2021) who argued that chatbots provide guests with information about the hotel and local area, such as restaurant recommendations and tourist attractions. This can enhance the guest experience by providing quick and efficient assistance and reducing wait times.

Predictive maintenance was another way that appeared in study results in which AI can increase guest satisfaction in luxury hotels. AI is used in this sense to monitor hotel equipment and predict when maintenance is needed before a problem occurs. Wang (2022) have agreed on the same result arguing that predictive maintenance help to prevent equipment failures and minimize downtime, ensuring that guests have a seamless experience.

CONCLUSION

General Conclusion

These luxury hotel chains have all leveraged AI technology to enhance the guest experience and improve operational efficiency. By providing guests with personalized recommendations and assistance through AI-powered chatbots and virtual assistants, these hotels have been able to improve guest satisfaction while also reducing the workload of hotel staff. As AI technology continues to develop, it is likely that more luxury hotel chains will adopt these innovative solutions to better meet the needs and expectations of their guests. These luxury hotel chains have all demonstrated a commitment to delivering exceptional service and creating unforgettable experiences for guests.

In conclusion, AI has the potential to increase guest satisfaction in luxury hotels by providing personalized and efficient services to guests. AI-powered tools such as chatbots, voice assistants, facial recognition, recommendation engines, and virtual reality can all enhance the guest experience and increase their satisfaction and loyalty to the hotel. While it is important to balance the use of AI with human interaction, the use of AI in luxury hotels has the potential to revolutionize the hospitality industry and provide guests with a more seamless and personalized experience.

Recommendations

Based on above discussion and conclusion, author of current study recommended:

- Employing AI to gather data on guests' preferences and behavior, such as their room preferences, dining preferences, and preferred activities.
- Providing guests with instant assistance and support through AI tools and handle routine requests such as room service orders, housekeeping requests, and booking requests, freeing up staff to focus on more complex tasks.
- Integrating voice assistants such as Amazon's Alexa or Google Assistant into hotel rooms, allowing guests to control various aspects of their room such as the temperature, lighting, and entertainment systems, all through voice commands.

Theoretical and Practical Implications

Examining the impact of artificial intelligence (AI) on guest satisfaction in luxury hotels has both theoretical and practical implications. As for the theoretical implications; studying the impact of AI on guest satisfaction in luxury hotels can help advance our theoretical understanding of the role of technology in the hospitality industry. This can lead to new insights into how hotels can use technology to enhance the guest experience and ultimately, increase guest satisfaction.

Practical implications of current study can summarized enhancing guest satisfaction by understanding the impact of AI on guest satisfaction, luxury hotels can implement AI-powered solutions that enhance the guest experience and ultimately, increase guest satisfaction.

Limitations of Study

Current study was limited to five stars hotels in the Jordanian capital Amman, the study was also limited to managers of these hotels as they are more aware of the budget stated for employing AI in their operations and have the needed awareness of AI-empowered services in five stars and luxury hotels.

Future Studies

Current study suggested future research that included:

- Examine the role of chatbots and smart receptions in increasing guest satisfaction in hotels
- Examine the effect of employing social media smart analytics to collect data about guest and reach the maximum level of their satisfaction and loyalty.

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EVENT ATTENDEES' PERCEPTIONS OF THE IMPACTS OF A CULTURAL EVENT IN VICTORIA FALLS, ZIMBABWE

Gift MURESHERWA
School of Tourism and Hospitality, College of Business and Economics,
University of Johannesburg, Johannesburg, South Africa, e-mail: giftmuresherwa@gmail.com

Kamilla SWART
College of Science and Engineering, Hamad Bin Khalifa University, Doha, Qatar; Tourism and Hospitality, College of Business and Economics, University of Johannesburg, Johannesburg, South Africa, e-mail: KSwartArries@hbku.edu.qa

Tembi Maloney TICHAAWA*
School of Tourism and Hospitality, College of Business and Economics,
University of Johannesburg, Johannesburg, South Africa, e-mail: tembit@uj.ac.za

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Abstract: This study explores the triple bottom line impact of a cultural event hosted in the resort town of Victoria Falls. To accomplish the study aims, and objectives, the socio-cultural, economic, and environmental impacts of hosting carnival events were evaluated. Using a systematic random sampling approach, data were gathered from 307 spectators of the tenth edition of the Victoria Falls Carnival event in a popular tourist destination in Zimbabwe. Relevant excerpts from in-depth interviews with the event organizing team were also used to support quantitative data and emphasize how the event impacts the local community. The study results showed general support for carnival events especially the positive impacts associated with the hosting of these community spectacles. The participants were generally happy with the carnival event and would recommend it to friends and relatives demonstrating potential future success through visitor attraction. The event organizers are keen to improve each edition of the carnival to enhance satisfaction and continuous support. The study highlights the importance of attendees' perceptions in informing event tourism strategies.

Key words: local tourism events, Victoria Falls Carnival, event impacts, event tourism development

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INTRODUCTION

Tourism remains a significant economic sector for many developing countries particularly because of the vast opportunities that emanates from this industry (Gogitidze et al., 2023). For this reason, many countries have channeled efforts to promot different forms of tourism development (Stone et al., 2021; Nyasha et al., 2021; Khoi et al., 2022; Ramkissoon, 2023), aimed at tapping into the benefits provided (Yiamjanya et al., 2022). Meanwhile, researchers continue to examine various aspects of this sector to advance knowledge regarding developments in the tourism industry (Abdel-Azim-Ahmed, 2017; Benabdelhadi et al., 2021; Nyasha et al., 2021; Acha-Anyi and Ndolose, 2022; Boulhila et al., 2022). However, within these ongoing debates, the cultural tourism facet, focusing on various type of events has grabbed the attention of scholars in emerging economies (Nyikana, 2017; Machisa et al., 2018b; Moyo et al., 2020; Shereni et al., 2021; Muresherwa et al., 2022a; Liedemann et al., 2022) thus adding to discussions which had global North dominance for ages.

Cultural tourism that involves the production and consumption of various types of events has witnessed the growth of small-scale communities hosting events of international stature. This kind of tourism has been termed event tourism which Getz (2014) views as a field of study as well as an important sector of the global economy. Despite gaining much scholarly attention in the 1980s, the concept of event tourism continues to capture interest from social scientists keen to expand on the already existing knowledge on the subject. Researchers have explored the various aspects of cultural events, including their socio-economic, and cultural impacts on local communities hosting them (Yolal et al., 2016; Yozukmaz et al., 2020; Richards and King, 2022). In addition, several studies have shown that cultural tourism events can generate significant economic benefits for host communities by creating jobs, increasing tourism revenue, and stimulating the local economy (Jani and Mwakyusa, 2021; Yoopetch, 2022; Tichaawa et al., 2022; Ezeuduji, 2023). Moreover, cultural tourism events have also been recognized for their ability to generate positive social impacts whereby they promote community pride (Yoopetch, 2022), create cultural diversity (Kourkouridis et al., 2023), and enhance social cohesion (Doe et al., 2021). These events can create a sense of belonging and have the power to bring people together (Ezeuduji, 2023). As events bring people from different backgrounds and cultures together, it helps promote cross-cultural understanding and tolerance which is key when building communities and states (Mathabathe, 2019). Cultural tourism events can also contribute to the

* Corresponding author

preservation and promotion of cultural heritage by showcasing traditional arts, crafts, music, dance, and other cultural expressions (Chen et al., 2020; Gilman, 2020). Such events can help to preserve cultural traditions and practices and create opportunities for local artists and artisans to showcase their skills and at the same time, generate income (Ezeuduji, 2023). Despite the existence of vast literature available examining the impacts associated with cultural tourism events, these events need to be continuously evaluated to determine their contributions particularly to communities hosting them.

Event attendance as spectators or participants, has become one of the ways utilized for people's leisure time (Theodorakis et al., 2015; Vegara-Ferri et al., 2020), becoming a crucial aspect of event tourism since it is through this attendance that the benefits are realized. Regardless of the quality of the event or other aspects, the attendees will always hold their own perceptions regarding the event, and these vary from one attendee to the other (Luo et al., 2022). These variations could be due to several factors such as previous experiences with the event or influenced by attendees' socio-demographic characteristics or even attitude towards the event organizing team (Kim et al., 2020). Therefore, an understanding of these perceptions is crucial as it helps event organizers and other key event stakeholders to identify areas that require improvement for the future editions of the event, thereby helping sustain the event. Despite Victoria Fall hosting different types and sizes of events (business, festivals, sports etc.), an investigation of how attendees to these events perceive the impacts emanating from tourism events has not been pursued. This study therefore attempts to fill this gap in literature and provide empirically supported information reading how the attendees perceives a major annual carnival event in Zimbabwe.

The current study examined event attendees' perceptions regarding the impacts of a cultural event in the resort town of Victoria Falls in Zimbabwe. The study is intended to shed light on the importance of cultural events in Zimbabwe, and their impact on the local economy, tourism, and community development. In accomplishing this, the key factors that contribute to the success of events in Zimbabwe are highlighted. By analyzing event attendees' perceptions, the study can assist to identify areas for improvement in the planning, hosting, and management of cultural events in the global South, in particular. The article starts by providing an overview of event tourism and relevant literature that offer a theoretical foundation for understanding the impacts of tourism events. The research design and methodology adopted in completing the study are also elaborated. The study results are also presented and discussed in the study.

LITERATURE REVIEW

Cultural tourism events refer to events and activities that showcase the cultural heritage of a particular community, aimed at attracting tourists and promoting local culture (Liu, 2014; Jani and Mwakyusa, 2021). These events can take various forms, such as carnivals, festivals, fairs, exhibitions, performances, and cultural tours (Du Cros and McKercher, 2020). Typically, they involve traditional music and dance, food, arts, and crafts, as well as other customs that showcase the history, values, and traditions of certain areas. Cultural tourism events provide an opportunity for visitors to immerse themselves in the local culture and gain a deeper understanding and appreciation of the people and visited places (Ezeuduji, 2023). These kinds of events have been instrumental in supporting local economies through the providing job opportunities and generating revenue from tourism (Tichaawa et al., 2022; Kourkouridis et al., 2023). Cultural events therefore remain important elements of the tourism sector and have witnessed great improvements in recent years. Diversification and innovativeness are some of these improvements that have enabled the continuous growth of events.

In tourism literature, there have been increasing research studies on events and tourism events. Getz and Page (2019) note the wider usage of the term 'events tourism' in academia, especially from the late 1980s. However, in the past two decades, 'events tourism' became well-established in academia and as a sub-industry of the tourism sector. Tourism events have thus been in existence throughout human history (examples include rites of passage, funerals, and political meetings), and today they have become central to people's culture (Bowdin et al., 2006; Damirovich et al., 2022). Several factors have led to this phenomenon, including a need to engage in celebrations, increased leisure time, and spending money. Events have been visible in several cultures, planned and hosted at all times (Njerekai, 2016). From the second half of the twentieth to the early twenty-first century, single events have grown into a broad event industry, with several sectors (Šušić and Đorđević, 2011). An initial discussion around the concept of 'event(s) tourism' was spearheaded by Getz (1989). However, before that, the most common concepts around event tourism included special events, mega-events, major events, hallmark events, and specific types of events (Getz, 2008). Now this concept of 'event tourism' encompasses all planned events which follow an integrated approach to development and marketing (Getz, 2008; Hemmonsbey and Tichaawa, 2019; Daniels and Tichaawa, 2021).

Event tourism scholars (e.g., Getz, 2008; Getz and Page, 2016; Wu and Ai, 2016; Todd et al., 2017; Machisa, 2018; Swart and Maralack, 2020; Hemmonsbey and Tichaawa, 2020; Yozukmaz et al., 2020; Daniels and Tichaawa, 2021; Muresherwa et al., 2022a; Richards and King, 2022) have elaborated on event tourism studies with a focus on various types of tourism events. These studies have presented various aspects of event tourism including planning, management, marketing, and promotion. In addition, issues around event impacts, visitor behavior and experiences as well as sustainability were highlighted illustrating the key areas gaining much attention. Cultural event tourism as a sub-category of tourism events has attracted much attention from researchers and academics (Rojek, 2014; Laing, 2018; Echeta and Onuchukwu, 2022). In trying to raise awareness about tourism events, most tourism destinations apply and implement marketing plans, with tourism-related events acting as the hub for tourism flows (Getz, 2008; Getz and Page, 2016). To ensure that tourism events are beneficial to communties, it is important that they are planned and managed with the view of maximizing the triple bottom line (TBL) outcomes for the host communities and other related stakeholders.

TBL impacts of cultural tourism events

Many tourism destinations are putting resources and effort into organizing events of various types and sizes so that they can benefit from them. Events therefore play a major role in becoming tourist offerings, which consequently helps increase travel interest to participate in the event (Panfiluk, 2015). The impact of tourism events irrespective of their type and size on the host destination can be huge and diverse. Many studies have been conducted on the impact of tourism events (e.g., Machisa, 2018; Pirnar et al., 2019; Wu and Ai, 2016), and most suggest that events result in three types of impacts; economic, socio-cultural, and environmental (Andersson and Lundberg, 2013; Gibson et al., 2012; Liedemann et al., 2022). These are generally viewed from two angles, positive and negative. Examples of economic impacts include international branding (Wee et al., 2017), employment creation (Bob et al., 2019), and contributions to local taxes (Houhou and Rahal, 2020) among others. The social impacts include aspects such as raising awareness and social activity (Benabdelhadi et al., 2021), enhancing local ties (Mair et al., 2021), and sustainable preservation of local resources and facilities (Getz, 2013; Liu et al., 2019). Getz further (2013) notes that, when properly managed, events create a positive image of the region. On the environmental part, David (2009) asserts that events have both direct and indirect links with the environment. Some of the negative environmental consequences of event tourism include contributing to pollution, littering, depletion of natural resources, and traffic congestion (Wee et al., 2017; Machisa et al., 2018a). Since the attendance of events involve locational changes where individuals travel to where tourist events are hosted, it may result in the movement and transmission of infectious diseases. These diseases may include the Ebola virus, Zika virus, SARS, Swine Flu, and Covid-19 (Coronavirus). The global South, which has witnessed negative stereotypes and several challenges, could use cultural events to project a positive message about the achievements made. These positive messages could in the end generate interest in visiting places that showcase their cultural artefacts in unique ways. Considering this, it is thus important for organizers of cultural tourism events to ensure that the event is favorable to the environment through the adoption of sustainable planning and development principles (David, 2009; Muresherwa et al., 2022a).

When tourism events are hosted at a destination, several stakeholders are affected in different ways. Stakeholders are those individuals with a stake and interest in the planning, hosting, and management of tourism events (Todd et al., 2017). The impact felt by the hosting community is different from those felt by participants, local businesses, sponsors, and organizers. In most cases, the developmental expectations, particularly the benefits associated with planning and hosting, and managing tourism events influence destinations' endeavors to organize tourism events (Elendu, 2013). It is therefore important for destination planners to first analyze potential impacts (benefits vs costs, positive and negative impacts) before organizing any event. Failure to do this is normally associated with unsustainable tourism development (Hinch and Higham, 2009; Machisa et al., 2018b). Table 1 provides a general indication of the impacts, both positive and negative, along the TBL perspective of the tourism events. Several studies have reported the various impacts that tourism events of any size have on the communities and destinations where they are hosted (Ntloko and Swart, 2008; Daniels and Swart, 2012; Tichaawa and Bama, 2012; Moisescu et al., 2019; Cortese et al., 2019; Jani and Mwakyusa, 2021). The potential impacts of tourism events have been mainly categorized into three groups, as highlighted previously; with a generic tag, TBL impacts (Hede, 2007; Cortese et al., 2019; Jani and Mwakyusa, 2021).

Table 1. Impacts of tourism events (Source: adapted from Ntloko and Swart (2008), Banjo (2011), Daniels and Swart (2012), Tichaawa and Bama (2012), Hermann et al. (2013), Bason et al. (2015), Muresherwa et al. (2017) and Moisescu et al. (2019)

Sphere	Positive Impacts	Negative impacts
Socio-cultural	Production of ideas; induce innovativeness; local skills development; urban revival; Enhances the quality of life in the community - urban regeneration; Cultural exchange – visitors and host communities (residents); Fosters community unity thus leading to a perception of positivity; Preservation of local culture – showcasing to visitors; Establishment of networks within the communities and outside of the community; enhances community spirit	Loss of permanent visitors; Creation of temporary tourism; Increased levels of criminal and delinquent activities; disruption of daily lives (road closure etc); Noise, overcrowding, and traffic congestion; rowdy, poor/undesired behavior, and hooliganism; prostitution; drug abuse; Vandalism and property damage; Only some people benefit from the event; Pressure on and over-usage of local services and infrastructure
Economic	Improvement of welfare through increased employment; Promotion of tourism; Skills development; Cash injections for local businesses; Increased public spending for sport; Development of companies and organizations directly or indirectly serving the event	Creation of 'temporary' employment; Increased prices due to increased demand; Waste of taxpayer's money; Increased cost of living; Many economic benefits for a few with few benefits for the masses
Environmental	Maintenance and improvement of existing infrastructure; Greening initiatives; Tourism infrastructure development, conservation	Litter; Overcrowding and parking problems; Damages to the natural environment

Theoretical framework

The concept of TBL was originally invented by Elkington (1981, 1999) for businesses especially on their capability to either create or destroy value in the three domains. The concept of TBL has been applied in various studies that assess the impacts of tourism activities and events (Hede, 2007; Abdel-Azim-Ahmed, 2017; Ziakas, 2020). Previous research studies investigating the impact of tourism activity and cultural events have taken a narrow approach that examines each element in isolation (Ahmad et al., 2016). Tourism studies especially on impact assessment have always been undertaken from the perspective and discipline of investigators (Fredline et al., 2005). For instance, economists have assessed the economic impact of events (Dwyer et al., 2016; Allen et al., 2022), while psychologists, sociologists, and geographers have investigated the social impacts (Viviers and Slabbert, 2012) and environmental scientists and geographers have also investigated the environmental impacts of events (Ahmad et al., 2016; Collins and Cooper, 2017;

Van Rheenen, 2017; Kurgun and Ozseker, 2020). This approach has been lambasted by several researchers who view the economy, society, and environment as hierarchically structured requiring a holistic approach that embraces all elements (Fredline et al., 2005; Ahmad et al., 2016). Despite this, the TBL approach remains relevant especially when analyzing the impacts of any tourism development initiative as it provides an understanding of both the positive and negative aspects related to development. Knowledge about the TBL impact is useful to various event tourism stakeholders as it helps inform development-related decisions.

The Victoria Falls Carnival – An overview

The context of the study was the tenth edition of the Victoria Falls Carnival event held between the 29th of April and the 1st of May 2022 in the Zimbabwean tourism capital of Victoria Falls. Since its inception in 2012, this event has been running annually without any interruption until 2020 when the globe was confronted by the Covid-19 pandemic. For two years (2020 and 2021), the carnival event could not proceed as nations battled to control the spread of the pandemic. Despite the impact of Covid-19 on the events industry, the Victoria Falls Carnival remains a major three-day music festival in Africa. The event features music celebrations and parties hosted by both local and international musicians (Banga, 2017; Muresherwa et al., 2022a). Historically, the Carnival was one of the largest and most well-known New Year's celebrations in Africa. However, the dates of the event were moved away from New Year's in large part because the organizers felt that the event celebrates Africa's diverse culture, food, music, and arts, thus justifying its stand-alone dates (We Are Victoria Falls, 2020). In addition, moving the dates from New Year's celebrations to April/May was carefully thought to help draw visitors to the town during the low tourist season thereby extending the tourist season (Bright, 2022; Richards and King, 2022).

Methods, study population, and analysis

In trying to achieve the study objectives, a mixed method, making use of both quantitative and qualitative approaches were adopted. The target population for the study was the event attendees (spectators and participants) of the tenth edition of the Victoria Falls Carnival in Zimbabwe as well as the event organizing team. According to the event organizers of this event, to ensure that the Covid-19 protocols were observed, 6,000 people were targeted to attend the event (Bright, 2022). Following Isaac and Michael (1981)'s recommendation on sample size, with a study population of 6000 attendees, a representative sample of 382 would be ideal. A survey instrument was designed and distributed to the participants by the researchers and a team of trained field workers. All ethical considerations were taken into account. The variables relevant to the study were agreed upon by the researchers and these were derived from scholarly sources (See e.g., Ntloko and Swart, 2008; Muresherwa et al., 2017; Moisescu et al., 2019). The study questionnaire was informed by the TBL impact variables as noted in literature. The survey instrument had three sections which all contained close-ended questions, while the TBL impact statements were on a five-point Likert scale. After excluding unusable surveys, three hundred and seven (307) were captured and used in this study. These surveys were collected following a spatially based systematic sampling method used to sample the participants. Despite the total number of usable surveys falling under the targeted 382, Pallant (2013) argues that samples above 300 are acceptable.

Table 2. Interviewee profile (Source: Author's construction)

Participant number	Role(s) in events tourism	Gender	Duration in the current position	Highest qualification
P1	Festival Director (CEO)	Male	20 years	PGDip
P2	Events director/organiser (Productions Manager)	Male	>30 years	PG Degree
P3	ZTA – COO, research and planning head, diplomatic assignments, tourism attaché	Male	13 years	Master's and MBA
P4	ZTA – Assistant Manager - Events & Festivals 'experiential marketer'	Female	15 years	Master's
P5	Managing Director – National Convention Bureau	Female	9 years	Master's

To further support the findings from the quantitative data, relevant extracts highlighting the emerging themes from five in-depth virtual interviews with the event organizing team were used. This team included those involved in the planning/organizing, hosting and management of the Victoria Falls Carnival event including the Festival Director and Productions Manager, Zimbabwe Tourism Authority (ZTA) representatives and National Convention Bureau representative. For reporting purposes, the interviewees were assigned an identifying number to assist link the responses to the participating interviewees (Festival Director – P1; Productions Manager – P2; ZTA Chief Operating Officer – P3; ZTA Festivals Manager – P4 and National Convention Bureau Managing Director – P5). The interview questions used were designed to reveal what the study participants thought was the TBL impact of the Victoria Falls Carnival event. Table 2 shows the interviewees' profile.

RESULTS AND DISCUSSIONS

This section presents the results of the data analysis. First, the outputs generated from SPSS regarding the demographic characteristics of the study participants are reported. This is followed by a presentation of the socio-economic and environmental impacts of the carnival event. Finally, the aspects around satisfaction and future support are presented in this section.

Socio-demographic characteristics of the study sample

The researchers found it imperative to present the participants' profiles of those who partook in this study. According to

Muresherwa et al. (2022b:4), understanding the profile of a study's participants assists in giving "context that could give meaning to the interpretation of the study findings." As a result, the socio-demographic profiles of the overall study sample involving event attendees and spectators are presented. Six socio-demographic characteristics questions related to participants' age, gender, level of education, monthly income, occupation, and marital status are presented.

As illustrated in Table 3, more females (55.0%) than men (45.0%) attended the event. This finding was not surprising noting that previous studies (see e.g., Tichaawa and Swart, 2010; Tichaawa, 2013; Nyikana et al., 2014; Tichaawa and Bob, 2015) showed more women denoting that the market for events tourism is moving away from male-dominance and embracing more women. The average age of the study participants was 32.2 years, with more attendance by young to middle-aged spectators (20 – 40 years – 69.8%). Recent studies (see e.g., Moyo et al., 2020; Ozturk et al., 2021; Shereni et al., 2021) have also reported a trend of events attracting a relatively young population. The study results showed just above 50.0% of the study participants (50.2%) declaring that they were single while 38.4% were married. Given that the event attracted a younger attendees cohort, it would be expected to find a higher proportion of single attendees and align to study results reported by Sobitan and Vlachos (2020). Regarding participants' employment status, more than half (56.0%) indicated that they were employed on a full-time basis. The Victoria Falls Carnival also attracted mostly spectators who held a tertiary qualification (certificate/diploma and degrees) and this constituted an overwhelming majority (82.1%). The finding regarding a higher proportion of the participants holding at least a tertiary qualification was not surprising noting that most of the sampled events were attended mostly by citizens of Zimbabwe (83.3%), a nation that boasts having a "highly educated population" (Pasara et al., 2020:2). The average monthly net income (after deduction of taxes) in United States Dollars (USD$) for the study participants was USD$826.37 (based on those who disclosed monthly salary).

Table 3. Description of the respondents' demographic characteristics
(in %, n=307) (Source: Authors' construction - Survey Data 2022)

Variable	Category	Frequency	Percentage
Gender	Male	138	45.0
	Female	169	55.0
Age	18 -20	41	13.4
	21 - 30	107	34.9
	31 - 40	107	34.9
	41 – 50	34	11.1
Average age = 32.3	51 - 60	11	3.6
	61 - 70	7	2.3
Marital status	Single	154	50.2
	Married	118	38.4
	Divorced	2	0.7
	Separated	26	8.5
	Widowed	7	2.3
Employment status/Occupation	Unemployed	32	10.4
	Employed (part-time)	35	11.4
	Employed (full-time)	172	56.0
	Student/Learner	59	19.2
	Retired	9	2.9
Highest level of education	No formal education	4	1.3
	Primary completed	6	2.0
	Secondary completed	45	14.7
	Certificate/diploma	46	15.0
	Undergraduate degree	150	48.9
	Postgraduate degree	56	18.2
Monthly net income (after deduction of taxes) in US$	None	89	29.0
	$1–100	14	4.6
	$101-200	26	8.5
	$201–500	62	20.2
Mean: USD$826.37 based on those who disclosed monthly salary	$501–1000	34	11.1
	$1001 - 2500	22	7.2
	$ 2501–5000	13	4.2
	$5001–10000	1	0.3
	Confidential	46	15.0

An overwhelming majority (87.9%) of the study participants were event spectators while the remaining 12.1% were participating in different event activities as either artists or workers. The study also showed that most of the study participants were overnight visitors or tourists (56.0%) while those coming from the local community, where the event was hosted constituted 23.9% and these were identified as local residents.

The remaining 11.1% were study participants classified as day visitors, coming from nearby towns for the event and traveling back to wherever they were from. The tenth edition of the Victoria Falls Carnival event was mostly attended by study participants who had attended the previous carnival events (86.0%) with the remaining 14.0% as first-timers to the event. These event attendees were mostly in the friends and family category (74.2%).

The impact of the Victoria Falls Carnival event

Socio-cultural impacts

The socio-cultural impacts of event tourism are the ways in which the event tourism sector contributes to changes in moral conduct, individual behavior, collective lifestyles, value systems, family structure and relationships, safety levels, traditional ceremonies, and community organizations (Jovičić, 2011). Table 4 reveals the results that were obtained from the participants regarding their views of the socio-cultural impact associated with the different event categories.

The first statement (SC1) relating to destination profiling, 'Zimbabwean culture is profiled by hosting these types of events' saw a significant majority of the participants (99.4%) generally agreeing (mean=4.86 and Std.Dev=.363). This finding shows that the event attendees believe that through event hosting, destination profiling could be achieved. The notion that an event has the power to significantly influence the destination image (Kaplanidou and Vogt, 2007) thus suggests that there could be a convergence of the destination and event image, each correlated with the other. Meanwhile, the hosting of recurring events could contribute to the formulation of a destination image profile that has the power and potential to create marketing and co-branding benefits. A larger proportion of the study participants agreed with the statement 'this event will be a major boost for national/ community pride' (SC2) (mean=4.78 and Std.Dev=.481).

Table 4. Mean and Standard Deviation of variables - The impact of the Vic Falls Carnival (*n*=307)
(Source: Authors' construction - Survey Data 2022)

Triple Bottom Line (TBL) impact statements	Mean	Std. Dev
Social impacts (SC)	**4.47**	
SC1: Zimbabwean culture is profiled by hosting these types of events (determined by event type)	4.86	.363
SC2: This event will be a major boost for national/ community pride	4.78	.481
SC3: Entertainment opportunities related to the event will be provided for residents	4.71	.541
SC4: Training opportunities have been provided to residents because of this event (e.g., volunteerism, training, and skills development, etc.)	4.64	.507
SC5: Events help foster social cohesion among the local community members	4.70	.621
SC6: Events disrupt the local communities, which could lead to the displacement of potential tourists	3.10	1.527
Economic impacts (EC)	**4.58**	
EC1: This event leads to increased spending in the local area and increases economic benefits for local businesses	4.70	.542
EC2: The hosting of this event ensures employment opportunities for local community members	4.58	.664
EC3: Events encourage investment in infrastructure development and expansion for the local communities	4.47	.525
EC4: The hosting of events helps attract tourists to the local area	4.54	.555
EC5: Because of event hosting, foreign exchange earnings and regional development for the community can be achieved	4.50	.532
EC6: Events help to increase the markets for local products in the community and other areas	4.71	.481
Environmental impacts (EV)	**3.68**	
EV1: Events provide an incentive to keep public spaces neat and tidy	4.78	.529
EV2: This event creates opportunities for environmental education and awareness	4.76	.513
EV3: The event resulted in excessive littering	1.51	.951
EV4: The event created excessive noise	2.68	1.489
EV5: The event supports the protection and conservation of the environment	4.69	.679
Note: *Five-point Likert-type scale was used (1-strongly disagree, 3-neutral, and 5-strongly agree)*		

Van Nierkerk (2016) highlights that tourism events in reference to festivals, positively impact communities by bringing in relaxation and entertainment opportunities for both attendees and community members at the destination. Further highlighting the importance of events in enhancing entertainment opportunities for both residents and visitors, the study participants generally agreed (mean=4.71 and Std.Dev=.541) that 'entertainment opportunities related to the event will be provided for local residents' (SC3). This finding, while conforming to Van Nierkerk (2016)'s postulations, must be contextualized. The Victoria Falls Carnival event is characterized by several performances (arts and music) and thus would be expected to impress the study participants and resulting in such a response. The intangible feel-good effect of the event could thus be utilized by event organizers and key stakeholders to enhance social cohesion.

With events coming to destinations, additional staff may be required to work in several parts of the event, and this could include volunteers, marshals, ticketing staff, and other roles (Mair, 2009). These individuals could require some training which would eventually lead to skills development. The fourth statement (SC4) which relates to training opportunities because of event tourism development was asked 'training opportunities have been provided to residents because of this event (e.g., volunteerism, training, and skills development, etc.)'. The study results showed a general agreement (mean=4.64 and Std.Dev=.507) with the statement denoting that indeed events offer training opportunities, a finding also reported by Swart and Bob (2007). The study participants were also requested to indicate a level of agreement with the statement relating to event impact on social cohesion (SC5), 'events help foster social cohesion among the local community members.' The study results showed almost all the participants (96.4%) in agreement with the statement (mean=4.70 and Std.Dev=.621) thereby further endorsing earlier studies that found that events are key for enhancing social cohesion (Pyke and Ong, 2019; Asero and Tomaselli, 2021; Daniels and Tichaawa, 2021). Regarding the statement that 'events disrupt the local communities, which could lead to the displacement of potential tourists', the study results showed an equal distribution between agreement (43.3%) and disagreement proportions (43.3%) while 13.4% assumed a neutral position. The mean score for statement SC6 was 3.10 while the Std.Dev was 1.527 denoting agreement and disagreement levels.

Despite some studies (e.g., Chen, 2011) revealing that tourism events disrupt the community's daily routine, the current study showed an equal proportion of participants agreeing and disagreeing about community disruption emanating from tourism events. It is however important that this finding may need to be interpreted with the context in mind.

Economic impacts

The findings in relation to event spectators' perceptions regarding the economic impacts of the carnival event in Victoria Falls are presented in Table 4. The first economic impact statement (EC1) was related to the ability of tourism events to lead to increased spending in the local area and increase economic benefits for local businesses. Almost all (99.0%) of the study participants generally agreed with the statement and revealed a mean and standard deviation of 4.70 and .542 respectively. This conception had been reported in earlier studies such as that of Duarte et al. (2018) who note the value of event tourism in enhancing local economies. Regarding statement EC2 that entails job opportunities, 'the hosting of this event ensures employment opportunities to local community members' the study results showed a large proportion of the study participants agreeing (mean=4.58 and Std.Dev=.664) with the statement. Recent studies such as that of Allen et al. (2022) maintain that the hosting of events results in jobs being created further endorsing the current study findings. In addition, when the study participants rated the statement 'events encourage investment in infrastructure development and expansion for the local communities' (EC3), the results were encouraging as most saw the value of events in bringing infrastructure to the area (mean=4.47 and Std.Dev=.525). This finding regarding infrastructural development has been reported in several studies that discussed the economic impact of tourism events (See e.g., Stankova and Vassenska, 2015; Yolal et al., 2016; Nyikana, 2017).

Destinations usually pursue several objectives and among these, include hosting events of international stature, which have the power to attract visitors to help stimulate tourism (Atkinson, 2016). Depending on their category and type, events are generally meant to appeal to different people (locals and visitors). Within this perspective, the fifth statement, 'the hosting of events help attract tourists to the local area' (EC4) was asked as it related to the event attractiveness. The study results showed a large proportion (mean=4.54 and Std.Dev=.555) of the study participants agreeing with the statement. However, to keep attracting more visitors or a bigger audience, destination managers and event organizers should focus on proper marketing of the event (Atkinson, 2016). Tichaawa (2013) notes that when more visitors are attracted to destinations to attend events, more benefits such as job opportunities can be realized. For most tourism destinations, tourism and events contribute to foreign exchange earnings (Adu-Ampong, 2019; Doe et al., 2021). With this in mind, the study participants were asked to rate the statement 'because of event hosting, foreign exchange earnings and regional development for the community can be achieved' (EC5) and results showed revealed a general agreement with the statement (mean=4.50 and Std.Dev=.532). Furthermore, a larger proportion of the study agreed that 'events help to increase the markets for the local products in the community and other areas' (EC6) with a mean score of 4.71 and Std.Dev of .481.

The economic impact of events can also be assessed by examining spectators' spending while attending tourism events. Table 5 presents the expenditures of each of the attendees that pertain to seven categories which included (i) food & drinks, (ii) event merchandise or event-related items, (iii) transportation – within the country where the events were hosted, (iv) accommodation – only for overnight visitors, (v) souvenir – arts and craft purchases (vi) other- entertainment or visits to tourist attractions and (vii) overall total for all the expenditure. Concerning visitor spending on various categories or items, the study results showed an average overall spent of USD$247.87. The total spent on all the categories nearly reached US$76,096.00. Examining the spending categories more closely, food and beverages spent amounted to a total of USD$5,266.00 which ranged from USD$2.00 to USD$500.00 and yielded an average of USD$32.71. As expected, the category with the highest spent was accommodation with a total of USD$23,432.00 with an average of USD$334.74.

Table 5. Spent amounts on items for the entire period of the event (Source: Authors' construction - Survey Data 2022)

Item	Minimum spent in US$	Maximum spent in US$	Average spent (US$)	Total amounts disclosed by all participants Amount in US$
Food and drinks	2	500	32.71	5266
Event Merchandise	5	150	37.44	936
Shopping	2	200	90.11	1622
Transportation (e.g., travel in Zimbabwe)	2	1500	81.45	7575
Accommodation (*only for non-locals*)	20	1480	334.74	23432
Souvenir purchase (e.g., arts and craft)	5	2500	162.81	4233
Other (entertainment, visits to tourist attractions, etc.)	3	800	116.34	8493
Overall total estimate	**US$2.00**	**US$4,800.00**	**US$247.87**	**US$76,096.00**

Reflecting on the themes that emanated from the interview with the Victoria Falls Carnival director regarding the economic impact of the event, it was apparent that the carnival helps address seasonality issues of tourism. Events help to increase accommodation occupancy, particularly through the low season. During the last event in 2019, it was quite difficult '*to get a bed in town* [Victoria Falls area] *as there was 100% occupancy*.' In trying to allow more tourists to come to Victoria Falls during the low season, the dates have been moved from the high season (New year) to April and early May. In this regard the Festival Director (P1) and ZTA Events Experiential Marketer (P4) mentioned:

"We've moved the date to a date where it's low season …you chat to all the hotels, you chat to everyone, and … the last 20 years you can take the stats of the occupancy around the date we did Vic Falls carnival, now its end of April to early

May. Occupancy was at around 20%. This year [2022] the whole town was full. We brought 1000s of people into the town, 1000s of people eating at the restaurants, all the hotels were full, all the backpackers were full, people were doing activities, all the sunset cruises were full … it's a massive economic impact on the locals …" [P1, Festival Director].

"… we use these [events i.e., Vic Falls Carnival] as a catalyst for attracting tourists to destination during times when we are in low season. We used to have this challenge mainly in Victoria Falls, which then brought about the need for Victoria Falls carnival. But then you find that Victoria Falls is now overcrowded, has become overcrowded during that time of the year …" [P4, ZTA – Assistant Manager - Events & Festivals].

The theme regarding events' power to 'enhance local economies' was reported by all the event organizing team. Highlighting this theme, the study participants indicated "… *they create jobs for the local communities"* [P5, Managing Director, NCB] which was expressed differently, however revealing 'job or employment opportunities' as a positive outcome from events hosting. There was also consensus amongst the study participants that events 'attract investment' as highlighted by P5 "… *out of those people that come in for conferences, some of them end up being investors*."

In addition to benefiting the accommodation and hospitality sector, the travel sector also benefited from the Victoria Falls Carnival event. The Festival Director (P1) added that '*every single flight was taken … there was not one seat available on the flight …*' illustrating the power of tourism events in driving different sectors of the economy. The carnival organizers are also closely working with the local community and striving to ensure that locals benefit in different ways for example '*through conservation, education, and employment for the local community*.' It was also indicated that the organizers of this event have partnered with local community members to bring the event into their area and thereby '*providing more jobs …, we are using the locals for security, barmen or bar staffs … and the smaller traders are getting more extra work*' which are all some of the positive impacts emanating from the planning, hosting, and management of the Victoria Falls Carnival event.

Environmental impacts

The respondents were asked to rate the statement 'events provide an incentive to keep public spaces neat and tidy' (EV1) and the results showed a general agreement with a mean and Std.Dev score of 4.78 and .529 respectively. This finding was anticipated noting that these days, most event stakeholders are pursuing sustainable developmental goals which amongst its tenants include keeping places clean and tidy. Regarding the statement that 'this event creates opportunities for environmental education and awareness' (EV2) most participants generally agreed (mean=4.76 and Std.Dev=.513). Another positive environmental impact statement that was perceived positively by the study participants was 'the event supports the protection and conservation of the environment' (EV5). Statement EV5 had a mean and Std.Dev scores of 4.69 and .679 respectively denoting a strong agreement with the notion that events help support the protection and conservation of the environment. The two negative environmental impact statements (EV3 and EV4) have widely been covered in literature and continue to trouble event organizers and destination managers (Collins and Cooper, 2017; Bob et al., 2019; Yozukmaz et al., 2020). With statement EV3 which relates to events contributing to excessive littering, a larger proportion (86.9%) of the study participants disagreed while a smaller 4.9% agreed (mean=1.51 and Std.Dev=.951). While some studies have shown that littering is a big concern that comes with event hosting, the current study showed that this is not a major problem as had been reported in earlier research (Perić, 2018; Mchunu et al., 2021). Concerning higher noise levels caused by the event (EV4), most of the study participants disagreed (48.6%) whereas some (35.2%) thought that the event resulted in excessive noise in the local area while the remaining 16.2% assumed a neutral position. The mean and Std.Dev on statement EV4 was 2.68 and 1.489 respectively. This finding regarding the disruptive community aspects such as noise at times is unavoidable. However, despite this, the organizers of the Victoria Falls Carnival strive to limit noise levels by doing several activities. This can articulated in the following quote from the Festival Director who had this to say:

"… on the noise levels, I think when you're doing a music event … like in the low season … everyone that is coming into the town is expecting this and it's a celebration and unfortunately there will always be noise … we've got everything sorted out on the river out at the Elephant Hills, which is not in the suburbs anymore. We moved it from the school. The school used to be right in the urban area there, so we've really made a big step by moving everything out as far as we are now. And I think it had a big impact on the local community. So, I mean, you don't hear the noise in the urban community or area. So that [noise] have been alleviated." [P1, Festival Director].

The above shows that event organizers are considerate of the communities they operate in and at times alter their operations as ways to minimize the impact on locals. Traffic congestion is also a characteristic of most events which would require a multi-stakeholder effort in addressing this. The event director thinks that '*people should not be driving cars but, use buses which could pick up people every ten minutes*' to help decongest the roads and help resolve undesirable behavior such as '*drinking and driving*.' Members of the event organizing team such as P3, P4 and P5 also raised concerns regarding congested roads and were also in support of ways to decongest the roads such as 'promote public transport usage' which Mair and Smith (2021) report as a behavior that could help enhance event experience for both the host and visitors.

The study results showed the majority (93.26%) of the respondents rating the event 'good' to 'excellent' illustrating that the events delivered satisfaction. In general, the study participants were pleased with the 10th edition of the Victoria Falls Carnival event and thus rated it positively denoting satisfaction with the event. With high satisfaction levels with the event, it was expected that most of the study participants would consider attending the future edition of the event (94.8%) with almost all the study participants (99.6%) declaring that they would advise friends, relatives, or colleagues to attend the event in the future. It is thus imperative for the event organizers to keep delivering unique experiences and ensure that the attendees would consider attending the future edition of the events. In addition, event organizers should continue to direct energy and focus on the delivery of events that resonates with quality.

CONCLUSION

The current study is considered important as it sheds light on the transformative power of events tourism especially in promoting and preserving the rich cultural heritage of Zimbabwe. Noting that Zimbabwe boasts a diverse collection of ancient archaeological sites, cultural traditions, and brilliant creative artistic displays and expressions, makes the country an ideal destination for cultural tourism. Moreover, the current study goes beyond the conventional boundaries by considering the impact of the Covid-19 pandemic on event tourism, thus offering unique insights into the recovery and resilience-building strategies. The qualitative data collected for the study, coupled with quantitative approach, help strengthen the significance of the study' contribution, while its wider implications make it relevant not only for Zimbabwe but also for cultural tourism in Africa and the global South in general.

By examining the impact of event tourism, the researchers uncovered the TBL impact of a major carnival event in the resort town of Victoria Falls. The study revealed a generally positive perception towards the impacts of tourism events implying support for the event. The negative aspects usually associated with hosting events such as littering, high noise levels, and disruption of local communities were perceived negatively though most participants did not see this event bringing undesirable impacts. The organizers of this event strive to ensure that the event continues sustainably and most importantly presents vast opportunities to the host community.

Since the event has the support of spectators, especially since the event participants indicated that they would attend future editions of the event and recommend it to others, this is of interest to the organizers as it could denote future success and assist in planning. In addition, since the event is perceived positively, and has high spectator satisfaction levels, stakeholders such as local authorities and event organizers could use this information to keep improving the event and exceed expectations since this usually helps boost satisfaction from the event (Fytopoulou et al., 2021).

Noting that the data collection process was undertaken when the government of Zimbabwe and other jurisdictions were relaxing Covid-19 rules and regulations, people's perceptions could have changed over time as 'normal activities' resume. Considering this, it could be interesting to advance and replicate the study and see if there could be some differences in the results obtained. In addition, since individuals' perceptions can change over time and mainly because of some of the following factors global crises, financial crises, political stability/ instability, government policy, terror activities, climate change, and country achievements, follow-up studies could reveal some interesting facts which could shape a better understanding of event tourism impacts. Moreso, since host residents or locals are the ones who are mostly exposed to both pre-and post-event impacts (Yolal et al., 2016), future studies could explore how residents within an event-hosting region perceive the socio-economic and environmental impact of events in their area.

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EXAMINING THE DIMENSIONS AFFECTING FOOD TOURISM INTENTIONS ON LOCAL FOODS IN ODISHA, INDIA

Pramathadhip KAR*
Institute of Hotel Management (IHM), Bhubaneswar, under Govt. of India, Faculty of Hospitality & Tourism Management, Siksha "O" Anusandhan University, Bhubaneswar, Odisha, India, e-mail : pramathadhip.kar@gmail.com

Sasmita MOHANTY
Faculty of Hospitality & Tourism Management, Siksha "O" Anusandhan University, Bhubaneswar, Odisha, India, e-mail : smohanty@soa.ac.in

Ashish MOHANTY
Institute of Business & Computer Studies, Siksha O Anusandhan University, Bhubaneswar, Odisha, India, e- mail: ashishmohanty@soa.ac.in

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Abstract: The objective of this study is to examine the dimensions impacting the food tourism intention on local foods in Odisha, India. The hypothetical study framework espoused four independent variables – physical surroundings, health concerns, excitement and prestige and independent variable – food tourism intentions on local foods and studied the relationships between them. 275 respondents were taken under the study. Convenient sampling method was used to collect the data via online survey. The study employed Factor Analysis, Correlation Analysis and Regression Analysis to identify and examine the relationships between the constructs. The results revealed that all the dimensions – physical surroundings, health concerns, excitement and prestige had a positive and significant impact on food tourism intentions on local foods. Based on the findings on the study, practical implications in the food tourism intentions and local foods and suggested limitations and scope for future research are also discussed.

Key words: local foods, food tourism, physical surroundings, health concerns, prestige, food tourism intentions

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INTRODUCTION

Food is a vital aspect of our daily life and has gained prominence in the field of academia especially in terms of why people and how it is bought and consumed. In recent past, a lot of interest has been generated to know the role of food in the tourism sector and its effect on tourists' experience. Food has become an important part of the travel experience and has been seen as source of entertainment and major attraction of culture & traditions plus a main reason for people to visit a particular destination (Bessière, 1998; Björk and Kauppinen, 2014; Cohen and Avieli, 2004; Mak et al., 2017; Sengel et al., 2015, Correia et al., 2008; Henderson, 2009; Horng et al., 2012, Kim et al., 2009).

The term "local food refers to local food systems or short food chains where the food is produced near the consumer" (Roininen et al., 2006). Local food has been one of the key drivers of decision making for the tourists to choose a destination and also provides a huge contribution towards tourism experience (Björk and Kauppinen, 2016). It is also a focal point of cultural capital and improves the experiences of the travellers by explaining the destination's cultural identity (Bessière, 1998; Cianflone and Cardile, 2014).

The typical regional cuisine correctly captures a location's cultural and historical history. Gastronomic tourism can play a dual role both as tool to market a destination and as an alternative to develop the socio-economical conditions of regional population (Azmi et al., 2023). Food tourism is defined as "visits to primary and secondary food producers, festivals, restaurants, and specific locations where food fasting or experiencing the characteristics of specialist food production regions are the primary motivation for travel" (Jeaheng and Han, 2020). In addition, food tourism was defined as "activity that provided experiences of consumption and appreciation of food and beverages presented in such a way that values the history, culture and also the environment of particular region" (Patwary, 2022).

According to (World Food Travel Association, 2020), food tourism started trending on social media from the year 2012 onwards. Since then, it has been a major source of motivation for the visitors and their intention to decide upon travel destinations. Cole (2016) contended that more than eighty per cent of tourists and travellers considered that one of the most important elements of travel destination is food and further more than one third of their spendings is on food only. Similarly, (Lai et al., 2017) are of the opinion that food is an important factor for any country's culture and a major element to enhance a country's tourism related activities. As per the chronological data of the past, there have been records of various sites that offered unique food experiences and major attraction to the visitors and tourists (Cohen and Avieli, 2004; Tsai and Wang, 2017). Local foods are a powerful medium to enhance the visitor's views about a destination since it exemplifies diverse cultural identities whether it is national, regional and individual (Bessière, 1998;

* Corresponding author

Chang et al., 2010; Henderson, 2009). The visitor's taste senses are piqued by locations with a wealth of gourmet resources and culinary collections. So, in this perspective, the distinctive cultural fabric of Odisha is reflected in its food or cuisine as well as in its customs and in its art and architecture, fairs and festivals, music, and dances.

Gastronomy is widely recognised as one of the key components of tourism, but in the state of Odisha in particular, the cuisine culture has branded itself as a brand-new type of travel. A new type of tourism known as "gastronomic tourism" or "culinary tourism" was created as a result of the rich history and tradition of Odisha's cuisine and its cultural diversity. Although local cuisine and the eating habits of people have generated a lot of interest (Mirosa and Lawson, 2012), there are a few researches taking local foods and tourism as a relationship dimension (Björk and Kauppinen-Räisänen, 2016). The researches carried out taking local foods and tourism to examine the relationship dimension are notably on cultural and environmental and their impacts such as attraction and experience, etc. (Hjalager and Johansen, 2013; Cohen and Avieli, 2004). The study conducted by (Mgonja et al., 2017) was on foreign tourists' perception on local foods based on experience and previous knowledge, however, there aren't any researches that were focused at finding the intentions, behaviours and motivations and other dimensions as far as local food consumption is concerned.

To assess the relationship between the dimensions - physical surroundings, health concerns, excitement and prestige and food tourism intentions on local foods dimension, Shoufurah et al. (2022) was carried out on a research in Kota Bharu, Kelatan, Malaysia and found all the dimensions had a positive and significant relationship. Keeping in view that empirical research on local foods consumption by tourists and visitors (Frisvoll et al., 2016) is scarce, the present study will empirically investigate the dimensions – physical surroundings, health concerns, excitement and prestige and their influence on food tourism intentions on local foods in the state of Odisha, India.

LITERATURE REVIEW AND RESEARCH HYPOTHESES DEVELOPMENT

Food Tourism Intentions

Tourists find the local foods in tourist places to be appealing since it differs from their regular fare, which makes them more likely to spend more money (Apak and Gurbuz, 2022). According to them, local cuisine is viewed as a helpful instrument for the sustainable development of tourist sites and the creation of sustainable tourism experiences. Food tourism is one strategy that adheres to the experience tourism ideals. This has to do with food and drink, which are necessary for survival, even when travelling (Nugroho and Putri, 2023).

Authentic and traditional local cuisine are the main focus of the growing phenomenon known as 'food tourism'. It can be a vehicle for advancement of regional identity, elevation of environmental consciousness, and preservation of traditional customs. In this way, it is possible to identify tourists based on their impressions of the local cuisine and their dining experiences while travelling, both of which had an impact on their pre-travel eating habits (Patwary and Rashid, 2016). Their study offers empirical support for the idea that visitors' opinions on the regional cuisine and the local food market that can be used to classify them (Birch and Memery, 2020).

Physical Surrounding

Local cuisine plays a significant role in differentiating one region from another, which has led to a rapid growth in culinary tourism in recent years. When visiting a place, tourists would prefer locally produced cuisine to satiate their appetites. This provides a pleasant experience for them and increases the value of their destination choices. Anything that we may physically perceive through touch, smell, sight, hearing, or taste is referred to as a physical environment. When choosing where to eat local cuisine, tourists value a physical affecting visitor food consumption and choice (Soo-Cheng and Chai, 2020). Regarding the physical aspect, the perception of regional cuisine is distinctive because it influences travellers' eating preferences by highlighting the distinctiveness of a location. Three crucial elements make up food photos in this context: food accessibility and originality, food diversity and enjoyment, and food quality and presentation (Soo-Cheng and Chai, 2020). The physical environment with its visual components, the service delivery and its entertainment component, among other factors, can therefore contribute to tourists' emotions of enjoyment and satisfaction as well as their intention to return (Nugroho and Putri, 2023). Based on the above, we hypothesized the following:

H1: Physical surroundings and food tourism intention dimensions on local foods are positively and significantly related in Odisha

Health concerns

Consumers place a premium on food quality, safety, and environmental friendliness. Global demand for a healthy diet has caused a sharp increase in the consumption of organic food (Kushwah et al., 2019; Waqas and Hong, 2019). Together with taste and value, travellers are also concerned with their health (Choe and Kim, 2018). With the food that tourists eat, health benefits have been emphasised as a top consumption priority. The quality of tourist dining experiences, particularly in terms of food flavour, physical components of food, and food service, greatly influences positive feelings (Choe and Kim, 2018). The number of travel experiences is growing due to factors like cultural encounters, interpersonal interactions, excitement, sensory appeal, and health (Ademoglu and Sahan, 2023). Hence, in this study we propose:

H2: Health concerns and food tourism intention dimensions on local foods are positively and significantly related in Odisha

Excitement

In recent times, food tourism has grown in popularity among visitors from other countries (Choe and Kim, 2018).

Visitors gain fresh information and awareness of a destination's distinctive local cultures, which is crucial for the destination's reputation and intended future tourism (Ellis et al., 2018; Kuhzady et al., 2020). Food has cultural and educational characteristics that are symbolic. By observing the production, presentation, and consumption of local dishes, tourists can learn about a culture. The symbolic element is the culinary experience. The obligatory dimension of food refers to "the rise in perceived risk provided by international and ethnic cuisine and cuisines when travelling, when there are more opportunities to try new foods. Nonetheless, visitors eat the local fare in a tourist area to fully enjoy their travels" (Choe and Kim, 2018; Vesci and Botti, 2019). While the compulsory dimension also involves health concerns, the symbolic dimension encompasses exhilaration and status. A high expectation for an exciting event might serve to enhance the experience of trying new foods, which can be energising. Often, food tourism is seen as a way for travellers to escape their everyday routines and exhaustion. By fostering a feeling of cosiness, enjoyment, and anticipation, it goes beyond what tourists typically experience (Nugroho and Putri, 2023). As per the above discussion, we hypothesized:

H3: Excitement and food tourism intention dimensions on local foods are positively and significantly related in Odisha

Prestige

An essential component is prestige values. When a service or product's perceived usefulness is linked to one or more social groups, prestige or social value is established (Riordan Gonçalves, 2016). According to Riordan-Gonçalves (2016), social values have an effect on visitors' attitudes and behaviours because they may help people improve their self-esteem and underlying self-worth. Visitors are thought to be driven by a sense of prestige and social worth. Local cuisine and culture offer many options to create a good association between food style and destination because cuisine is branded by country (e.g., Chinese, French, Italian, Turkish, etc.). Particularly, the local economy's tourist and agricultural sectors can be strengthened and complemented through local food tourism. Tourists can physically experience abstract culture through food. A three-way interaction between agriculture, culture, and tourism is seen as the key to local food production (Gardiner and Scott, 2006; Garibaldi and Pozzi, 2018). Based upon the above views, we hypothesized the following:

Table 1. Respondents Profiling Source: Primary Data

Variable	Category	Distribution	Percentage
Gender	Male	100	36.36
	Female	175	63.64
Age	Less than 30 years	100	36.36
	30 to 40 years	75	27.27
	41- 50 years	75	27.27
	51 to 60 years	15	05.46
	Above 60 years	10	03.64
Education	Under Graduate	75	27.27
	Graduate	115	41.82
	Post Graduate	85	30.91
Annual Income (INR)	Less than Rs.20,000	35	12.73
	Rs.20,000 – Rs.30,000	62	22.54
	Rs.31,000- Rs.40,000	90	32.73
	Rs.41,000- Rs. 50,000	56	20.36
	Above Rs.50,000	32	11.64

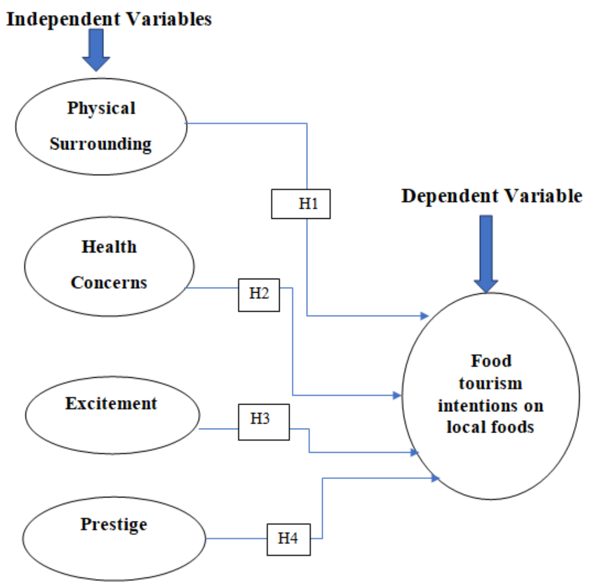

Figure 1: Hypothetical Conceptual Framework
(Source: Conceptual Framework by Shoufurah et al., 2022)

H4: Prestige and food tourism intention dimensions on local foods are positively and significantly related in Odisha

Thus, the study incorporates the Hypothetical Conceptual Framework (Shoufurah et al., 2022), taking physical surrounding, health concerns, excitement and prestige as independent variables and food tourism intentions on local foods as dependent variable as mentioned below (Figure 1).

METHODOLOGY

Collection of Data

The researchers used structured questionnaire to obtain primary data from the respondents and collected secondary data from various books, journals, research publications, and other related information from websites.

Sample Size, Sampling Method & Procedure

To carry out the research researcher used convenience sampling method to carry out the research on the basis of an online- survey. 275 respondents were taken under the study. To test the veracity of the hypotheses, statistical tools such as Descriptive statistics (mean and standard deviation), Factor Analysis, Correlation Analysis and Regression Analysis were applied using SPSS 23 software.

Scale & Measurement

To gather the information, a standardised questionnaire with four sections was employed, including Part-A (Demographic Profile of the Respondent), Part-B (Travel Patterns), Part-C (Travel Dining Experience), and Part-D (Intention to Consume Local Food When Traveling). All the items were scored using a five-point Likert scale.

ANALYSIS OF DATA

Demographic Profile

The demographic profiling of the respondents is represented in tabular form (table 1) and as well as through graphical presentation (Figure 2). The analysis revealed that females accounted for a total of 175 with 63.64 per cent share and the remaining 100 constituted males with 36.36 per cent of the total sample. As far as the age group is concerned, 100 of them fall under 30 age group with 36.36 % and under the age group (30 - 40) & (41-50), there were 75 respondents with 27.27 per cent shares. Additionally, the study revealed,75 of them is under graduates which is 27.27 % of the entire sample, whereas, 115 of them were graduates accounting for 41.82 % of the total sample. In the annual income category, 90 respondents were under (Rs.31,000-Rs.40,000), accounted for 32.73 %, whereas, only 32 of them accounted for under (above Rs. 50,000, accounted for 11.64 % of the total sample.

Descriptive Analysis

Table 2. represents the mean & standard deviation of four dimensions - Physical surroundings (M=3.84, SD= 0.88), Health Concerns (M= 3.69, SD= 0.93), Excitement (M= 3.80, SD= 0.83), Prestige (M= 3.66, SD= 0.91) and Food Tourism Intentions on Local Foods (M= 3.99, SD= 0.99).

Test of KMO and Bartlett's Test of Sphericity

In order to test the sample adequacy, the study used the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity (Table 3). For a satisfactory factor analysis to proceed, the KMO value should be greater than 0.5. Similarly, for the Bartlett's Test of Sphericity, the significance value is $p< 0.05$ (Bartlett, 1937). As per the above table, the value of KMO statistics is .826, indicating an excellent partial correlations and the Bartlett's Test of Sphericity value is significant, that is $p< 0.05$, confirming that the data is suitable for Factor Analysis (Kaiser, 1974).

Overall Reliability of Coefficient

When a construct is measured, reliability gives a scale that should consistently reflect the construct. This coefficient of reliability varies from 0 to 1. For social science and management research, a value of.7 to.8 is appropriate for the Cronbach's Alpha test (Bland and Altman, 1997). In this study, Cronbach's Alpha Score was used to check for internal consistency and the overall scale reliability (Table 4). As per the above table, the Cronbach Alpha on 17 indicators and five factors is .779, which indicates that the indications are internally consistent.

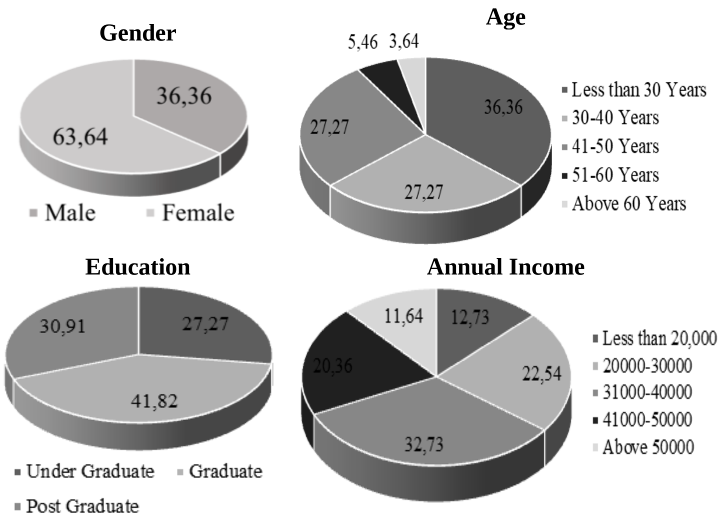

Figure 2. Demographic Profiling (Graphical Representation)

Table 3. KMO and Bartlett's test of Sphericity (Source: Primary Data)

	KMO and Barlett's Test	
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.826
Bartlett's Test of Sphericity	Approx. Chi-Square	9003.076
	Df	751
	Sig.	.000

Table 2. Descriptive Statistics (Mean & Standard Deviation) of Dimensions under the study (n= 275) (Source: Primary Data)

Items	Mean	Standard Deviation
Physical Surroundings	3.84	0.88
Health Concerns	3.69	0.93
Excitement	3.80	0.83
Prestige	3.66	0.91
Food tourism intentions on local foods	3.99	0.99

Table 4. Reliability Statistics (Source: Primary Data)

Cronbach's Alpha	Sample Size	Number of Items
.779	275	17

Table 5. Communalities (Source: Primary Data)

SL.No.	Items	Initial	Extraction
1	I am likely to consume local cuisines during my travels	1.000	.861
2	I seek different types of cuisines during destination travel which is very vital to me.	1.000	.790
3	When traveling, I think it is important to try local foods in the hosting destinations.	1.000	.764
4	I have interest in gathering information about local foods traditions before travelling.	1.000	.759
5	I prefer clean local restaurants during my destination travel.	1.000	.831
6	Ambience and settings of the restaurant is important for my travel dining experience.	1.000	.779
7	I purposefully dine at restaurants offering local foods with good surroundings	1.000	.769
8	Nutrition is important for my choice of local foods.	1.000	.766
9	Use of garnishes and flavours is important for my dining experience.	1.000	.771
10	I prefer local foods that are healthy, appetizing and palatable.	1.000	.723
11	Excitement about local food experience stems from the motivation to search them during my travel.	1.000	.774
12	Satisfaction about local foods motivates me to share such experience with others.	1.000	.743
13	I find it quite exciting to try local food items that were never savoured earlier.	1.000	.786
14	During my travel, I am keen in experimenting various food items with local ingredients.	1.000	.719
15	I am interested to record my experiences and capture them through pictures and videos and upload them in the social media	1.000	.741
16	My dining experiences are important for overall satisfactory of my travel.	1.000	.670
17	Trying out varieties of local foods accompanied by different beverages during the travel creates a long-lasting feeling of self-satisfaction and personal achievement.	1.000	.709

Factor Analysis - I

Factor analysis refers to a group of processes that are typically used to reduce and summarise data. It is a procedure for condensing a vast number of variables into a manageable quantity that can be interpreted and inferred logically. The relationship between a number of connected variables is investigated and represented in terms of the essential underlying elements. The factor loadings are meant to explain the functional relevance of a given indicator in relation to one factor with which indicators are closely linked. A simple correlation coefficient or regression coefficient is a factor loading and a loading with an absolute value greater than .60 is conventionally used as an indicator.

Communalities

Communalities relate to the degree of variance that a variable share with all other variables in the factor analysis. The table-5 provides the output of communalities to find out the common relationship among variables.

Extraction Method: Principal Component Analysis (PCA)

When performing factor analysis, it's critical to determine how much common variance is there in the current primary data, also known as common variance. This study used PCA and Alpha factoring in conjunction with factor analysis to determine the proportion of shared variance. According to the findings, there is a wide range of communalities between .670 and .861. Because each variable's relationship to other variables is significant and have a strong interrelationship (Table.5).

Extraction Method: Principal Component Analysis.
Rotation Method: Varimaxwith Kaiser Normalization. a. Rotation converged in 5 iterations.

The above table shows the output for factor loadings, Eigenvalues, and variance percentage. To make interpretation of the data easier and simpler, any individual indicator with factor loadings of more than .6 is acceptable. Physical Surroundings, Health Concerns, Excitement and Prestige are the four factors. These factors with Eigenvalues of 1 or more explained over 70% of the variance in the dataset.

Table 6. Factor Loading, Eigen Values and Variance (Source: Primary Data)

Name of Factors	Indicators	Factor Loadings	Initial Eigen Values	Var %	Cum %	Alpha
Physical Surroun-dings	I have interest in gathering information about local foods traditions before travelling.	.830	9.756	30.731	30.731	.921
	Ambience and settings of the restaurant is important for my travel dining experience.	.851				
	I purposefully dine at restaurants offering local foods with good surroundings	.859				
	I prefer clean local restaurants during my destination travel.	.867				
Health Concerns	Nutrition is important for my choice of local foods.	.821	5.444	17.001	47.732	.913
	Use of garnishes and flavours is important for my dining experience.	.878				
	I prefer local foods that are healthy, appetizing and palatable.	.860				
Excite-ment	Excitement about local food experience stems from the motivation to search them during my travel.	.871	3.808	14.140	61.872	.902
	Satisfaction about local foods motivates me to share such experience with others.	.829				
	I find it quite exciting to try local food items that were never savoured earlier.	.885				
	During my travel, I am keen in experimenting various food items with local ingredients.	.840				
Prestige	I am interested to record my experiences and capture them through pictures and videos and upload them in the social media.	.894	2.911	8. 779	70.651	.869
	My dining experiences are important for overall satisfactory of my travel.	.868				
	Trying out varieties of local foods accompanied by different beverages during the travel creates a long-lasting feeling of self-satisfaction and personal achievement.	.843				

Factor 1 (Physical Surroundings): A total of four indicators were loaded in the first factor to represent physical surroundings dimension with Factor Loadings values vary between (.830 to .867), Eigen Value of 9.756 and Alpha value of .921 (Table 6) that is accounted 30.731 percent of the total variance. The significant amount of variance shown by this factor explains that Physical Surroundings is an important indicator of Food Tourism Intentions on Local Foods.

Factor 2 (Health Concerns): A total of three indicators were loaded in the second factor to represent the Health Concerns dimension with Factor Loadings values vary between (.21to .860), Eigen Value of 5.444 and Alpha value of .913 (Table 6) that is accounted 47.732 per cent of total cumulative variance. The amount of variance explained suggests that Health Concerns is a dominant cause of Food Tourism Intentions on Local Foods.

Factor 3 (Excitement): A total of four indicators were loaded in the third factor to represent Excitement dimension with Factor Loadings values vary between (.829 to .885), Eigen Value of 3.808 and Alpha value of .902 (Table 6) that is accounted 61.872 per cent of total cumulative variance. The variance explained by this factor shows that Excitement has an influence on Food Tourism Intentions on Local Foods.

Factor 4 (Prestige): A total of three indicators were loaded in the fourth factor to represent Prestige dimension with Factor Loadings values vary between (.843 to .894), Eigen Value of 2.911 and Alpha value of .869 (Table 6) that is accounted 70.651 per cent of total cumulative variance. This explains that the factor Prestige is a vital determinant of Food Tourism Intentions on Local Foods. The results of factor analysis explained the data set with four identified variables as mentioned above will be taken for further analysis.

Pearson Correlation Analysis

The Pearson correlation is a statistical tool and commonly used method to use numerical variables wherein the values range between -1 and 1 (Boslaugh and Watters, 2008). The study has employed the Pearson Correlation Analysis to examine the relationship between the dimensions Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods. The statistical measures of correlation coefficients of all the variables are shown in the below mentioned Table 7. From Table 7, it is understood that the Pearson's correlation tool was used to assess the strength of the relationship between the dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods dimension. From the analysis, it is inferred that all the ten coefficients are positive which suggest that the relationship between all the dimensions is significant.

Table 7. Correlation between dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods (Source: Primary Data)

Variable	Pearson Correlation	PS	HC	EX	PR	FTILF
PS	Correlation	1	0.66**	0.65**	0.62**	0.70**
	Sig. (2-tailed)		0.00	0.00	0.00	0.00
HC	Correlation	0.66**	1	0.71**	0.61**	0.62**
	Sig. (2-tailed)	0.00		0.00	0.00	0.00
EX	Correlation	0.65**	0.71**	1	0.59**	0.68**
	Sig. (2-tailed)	0.00	0.00		0.00	0.00
PR	Correlation	0.62**	0.61**	0.59**	1	0.61**
	Sig. (2-tailed)	0.00	0.00	0.00		0.00
FTILF	Correlation	0.70**	0.62**	0.68**	0.61**	1
	Sig. (2-tailed)	0.00	0.00	0.00	0.00	

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

PS: Physical Surroundings, HC: Health Concerns, EX: Excitement, PR: Prestige, FTILF: Food Tourism Intentions on Local Foods

Multiple Regression Analysis

Even though the correlation analysis is reliable and has confirmed the positive relationship between the dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods dimension, it does not imply causal and effect relationship. Therefore, a multiple regression analysis has been carried out to assess the causal relationship between independent and dependent variable and to test the proposed hypotheses (Field, 2005; Hair et al., 2010). Tables: 8, display the results of multiple regression analysis of the dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods dimension separately.

Table 8. Model Summary of Regression Analysis between dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige and Food Tourism Intentions on Local Foods Dimension

Model	R	R Square	Adjusted R Square	Std. Error of the Estimates
1	.851	.731	.724	.31645

a. Predictors (Constant): Physical Surroundings, Health Concerns, Excitement & Prestige
b. Dependent Variable (DV): Food Tourism Intentions on Local Foods

The above table shows that value of R Square is .724 which indicates that 72.4 per cent variation in Food Tourism Intentions on Local Foods was explained by dimensions – Physical Surroundings, Health Concerns, Excitement & Prestige.

Table 8.1. Analysis of Variance (ANOVA)

Source	SS	Df	Mean Square	F	P
Regression	122.011	4	30.502	376.56	0.000
Residual	22.113	270	0.081		
Total	144.124	274			

a. Predictors (Constant): Physical Surroundings, Health Concerns, Excitement & Prestige
b. Dependent Variable (DV): Food Tourism Intentions on Local Foods

The above table shows F-ratio for the regression model. The greater the value of F ratio, greater the variance will be in the dependent variable. Here, the regression analysis with the F ratio at 376.56 is significant at the .000 level. The degree of variance is explained by the independent variables (Physical Surroundings, Health Concerns, Excitement & Prestige) with dependent variable (Food Tourism Intentions on Local Foods dimension).

The above table shows the standardized coefficient values of the independent variables - Physical Surroundings, Health Concerns, Excitement & Prestige significant at $p < 0.05$. The overall analysis confirms that there is a significant impact of independent variables on the dependent variable - Food Tourism Intentions on Local Foods.

Table 8.2. Coefficients (Source: Primary Data) *Dependent Variable (DV): Food Tourism Intentions on Local Foods

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
Physical Surroundings> Food Tourism Intentions on Local Foods	0.662	.031	.694	14.612	.000
Health Concerns> Food Tourism Intentions on Local Foods	0.642	.027	.744	15.514	.000
Excitement> Food Tourism Intentions on Local Foods	0.631	.018	.642	13.861	.000
Prestige> Food Tourism Intentions on Local Foods	0.572	.025	.625	11.416	.000

Table 8.3. Summary of Results about Hypotheses Testing

No.	Hypotheses	Result
H1	Physical surroundings and food tourism intention dimensions on local foods are positively and significantly related in Odisha	Accepted
H2	Health concerns and food tourism intention dimensions on local foods are positively and significantly related in Odisha	Accepted
H3	Excitement and food tourism intention dimensions on local foods are positively and significantly related in Odisha	Accepted
H4	Prestige and food tourism intention dimensions on local foods are positively and significantly related in Odisha	Accepted

DISCUSSION

The study made a conscious attempt to assess the underlying relationships between the independent variables – physical surroundings, health concerns, excitement & prestige and the dependent variable – food tourism intentions on local foods in Odisha. Specifically, it examined whether these dimensions have a significant impact on food tourism intentions on local foods in the state of Odisa. The study's suggested model was dependable and accurate.

The study's results also demonstrated that all the above-mentioned dimensions had a significant and positive influence on food tourism intentions on local foods. The results of these connections are theoretically in line with those of earlier investigations by (Soo- Cheng and Chai, 2020) who found out that the tourists appreciate a physical location with an authentic and traditional ambience when selecting local cuisine intake.

Similarly (Kushwah et al., 2019; Waqas and Hong, 2019; Choe and Kim, 2018 highlighted that the food quality, safety, and environmental friendliness are important to consumers. According to their research, organic food consumption has risen rapidly worldwide in response to the growing demand for a healthier diet. In addition to taste and quality value, tourists are concerned about their health. Further, (Choe and Kim, 2018; Vesci and Botti, 2019) expounded that the tourists eat the local cuisine in a tourist destination to fulfil their travel experiences. The symbolic dimension includes excitement and status, while the obligatory dimension includes health concerns.

Ultimately (Riordan- Goncalves, 2016) found through their research that social value or prestige is established when a service or product's perceived usefulness is linked to one or more social groups. Visitors who have visited and consumed local cuisine are generally regarded as having significant cultural capital. According to them, social values impact the attitudes and behaviour of visitors because they may assist them in improving their underlying approbation and self-image; the notion is that they are motivated by a feeling of prestige and social worth.

IMPLICATION & CONCLUSION

Odisha is not only famous for its rich cultural, traditions and heritage, but it is also famous for local cuisine. Due to that, it has become a very significant tourist attraction and tourists who come to the state of Odisha to try the local cuisine. This factor is influencing food tourism intentions to consume local cuisine because the food is a great influencer in attracting tourists to a destination (Robinson, 2021). The local community must do something to keep tourists coming to different tourist destinations of Odisha with respect to providing the best surroundings, high quality of local cuisine, follow the new trend and give a good perception. In summary, the result of our study reveals the aspects that contribute to the existing body of literature through empirical evidence. Four dimensions were identified in this study that are needed to strengthen food tourism intentions on local foods which in turn can contribute immensely to Odisha tourism sector. The results of this study imply that it is crucial to emphasise on the four dimensions – physical surroundings, health concerns, excitement and prestige which can assist tourism policy makers and marketers in creating successful strategies for enhanced tourists' inflow and improved business.

LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

This study was limited to the state of Odisha in India. As a result, similar study involving tourists and visitors in other states/regions of the country where there is a large potential for local food tourism might be reproduced. However, additional aspects such as local identity, food engagement, and food-related behaviours, among others, should also be explored. The current study focuses the influence of physical surroundings, health concerns, excitement, and prestige dimensions on food tourism intents on local foods. Future research might be longitudinal in nature to allow prospective tourists to be monitored throughout time from visiting a site to post-visit, allowing the same individual's food tourism intents and purchase behaviour to be measured. This would further support the findings.

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