



Research Paper

## The Impact of COVID-19 on Environmental Resources in River Ethiope Region, Delta State, Nigeria

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### ABSTRACT

This study examined impact of COVID-19 on tourism environmental resources in the River Ethiope region in Delta State, Nigeria. The study identified the tourism resources and destinations in the different locations along the River Ethiope Region and compared tourism patronage/participation before and after the 1<sup>st</sup> and 2<sup>nd</sup> phase of Covid-19 pandemic the Region. A total of 350 questionnaires were administered to the respondents in the study area using the descriptive survey research design. 298 copies of these were retrieved and the data obtained were analyzed and the study hypotheses were tested using regression analysis. The results of the first hypotheses tested showed significant effect on environmental resources affected by the Covid-19 pandemic, and significant variation in the effect of Covid-19 pandemic on the tourism potentials of the tourism regions. The study recommends support by the government in the area through provision of financial resources to help affected tourist centres cope with the economic shock associated with the COVID-19 and the World Health Organization (WHO) and other tourism regulatory authorities should continuously monitor the use of Covid-19 vaccines to identify and respond to safety issues that might arise.

**KEYWORDS:** Impact, COVID-19, Environmental resources, River Ethiope, Region.

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### I. INTRODUCTION

The outbreak of Covid-19 pandemic brought uncertainty and spillover impact on almost all the sectors of the global economy. The enduring crisis of Covid-19 on tourism is still a burning issue. The tourism industry is a gigantic, global business accounting for 10.4% of GDP and 10% of global employment (Menegaki, 2020). Similarly, the tourism industry is fast becoming a major source of employment, contributing greatly to the GDPs of many countries of the world, both developed and developing respectively (Awaritefe, 2012). Although Nigeria has not taken advantage of the great potentials of its tourism resources over the years, the sector is increasing contributing to the country's GDP and economic development in recent times. For example, Nigeria recorded a total of 5 million tourists in 2016, ranking 59<sup>th</sup> in the world in absolute terms with revenue of 1.98 billion USD in the same year, accounting for 0.50 percent of the gross national product (WorldData Info, ND). Constraints on freedom of movement laid down by several governments around the world to halt the propagation of the corona virus, have not only affected tourism services providers that incurred massive turnover losses, but have also impacted tourism demand (Scaglione, Larpin, Mabillard, & Schegg, 2020).

The Covid-19 pandemic can be considered a global, national and local crisis because it halted mobility of people from the global to the community level, forced countries to close borders, and slowed national, regional and local economies due to less or even suspended goods production and distribution, among other things. The pandemic affected diverse sectors such as education, communication, religion, agriculture, security, banking, politics, tourism, etc. It changed the face of the natural and social environment in that the natural environment became volatile to health risks and the economic and social environment was impacted with adverse socio-economic implications that were far reaching. Hotels, resorts, sites of attraction, parks for children and games centres were shut down, thereby stripping these places of the income vibe, and boom that was before then the order of the day. The environmental impact of the corona virus was such that besides the health implication, local dwellers struggled with the problem of trying to adjust to the new realities that the pandemic brought. This in the long run led to cutting down of staff strength in many of these tourist centres, inability to

manage and keep some of the facilities within these resort facilities in good shape thereby defacing them. Several tourist centres have not been able to recover from the economic and environmental impact of the COVID-19. This paper therefore sought to investigate the environmental impact of COVID-19 at the local level, using the Ethiope River tourism region to ascertain how tourist facilities within the River Ethiope region was impacted by the Covid-19 pandemic. In view of this, the paper will be guided by two formulated research hypotheses.

### **1.1 Hypotheses**

- i. There is no significant impact on the environmental resources around the River Ethiope region by the Covid-19 pandemic.
- ii. There is no significant variation in the effect of Covid-19 pandemic on the tourism resources of the various types of tourism region along the River Ethiope.

### **1.2 Theoretical Framework and Literature Review**

#### **Integrated System Theory**

The integrated system theory was postulated by Ludwig von Bertalanffy in 1988. Integrated systems theory is manifest in the work of practitioners in many disciplines, for example the works of biologist Ludwig von Bertalanffy, linguist Béla H. Bánáthy, and sociologist Talcott Parsons; in the study of ecological systems by Howard T. Odum, Eugene Odum; in Fritjof Capra's study of organizational theory; in the study of management by Peter Senge; in interdisciplinary areas such as Human Resource Development in the works of Richard A. Swanson; and in the works of educators Debora Hammond and Alfonso Montuori (Rajabalinejad & Dongen, 2018).

The theory as applied by Awaritefe and Awaritefe (2007), there is presently a global shift from formal/institutionalized tourism, characterized by mass tour and guided visit to specific places, to alternative small scale tourism forma, that emphasize individual search for self fulfillment and unique experiences in diverse environments within a region which is applicable to the River Ethiope Region. A holistic rather than reductionist framework of tourism planning is therefore desirable in order to fulfill the diverse travel needs and expectations of contemporary tourist, while simultaneously ensuring sustainability of environmental resources in destination regions (Awaritefe and Awaritefe, 2007).

The integrated system theory brings together principles and concepts from ontology, the philosophy of science, physics, computer science, biology, and engineering, as well as geography, sociology, political science, psychotherapy (especially family systems therapy), economics, and other related social science theory. Integrated system theory promotes dialogue between autonomous areas of study as well as within systems science itself. In this respect, with the possibility of misinterpretations, Hong, Chi, Chao, & Tang (2003) believed a general theory of systems "should be an important regulative device in science," to guard against superficial analogies that "are useless in science and harmful in their practical consequences."

Systems integration is a major challenge across many disciplines, with a large number of technical, project, organisational or environmental problems occurring as a result of improper integration. 'Integration' is defined as 'an act or instance of combining into an integral whole'. In engineering practices, integration may have different meanings depending on the different phases of the lifecycle and across different disciplines. For example, integration in requirements, software, hardware, design, production or green engineering has different meanings. According to White (White, 2020), 'integration' refers to the activity of combining several implemented system elements and activating the interfaces to form a realised system (product or service) that enables interoperation between the system elements and other systems in the environment to satisfy system requirements, architecture characteristics and design properties. In addition, 'integration engineering' is seen as a set of activities that define, analyse and execute integration across the lifecycle, including interactions with other lifecycle processes (White, 2018). Integration engineering concerns the discovery, analysis, learning, planning, designing, developing, executing, managing and monitoring of integration matters across the full product or system lifecycle. Integration matters may be related to technical systems, humans or the related environment, and may include structural, operational, functional or other technical or non-technical characteristics.

People demand products, systems, or services (PSS) to fulfill their needs. These PPS must function well and perform the tasks required. Furthermore, they should not harm people, or damage their property or the environment. The expectation is that products and services will be able to easily integrate with the related environment and deliver optimal performances (Rajabalinejad, et al., 2019). The satisfaction of these needs is a fundamental economic driver, which may provide great competitive advantage for different industries. Harmonious integration creates a unique selling point for businesses. In fact, smooth integration is a prerequisite in modern society. In other words, societies need products and services that can be used effortlessly in the appropriate context. Augmented Reality and its integration with human life in the form of cameras, wearables, games or educational products reminds us of the need for the integration of technology with everyday life.

Artificial Intelligence and machine learning are other examples of technology being used to facilitate higher capabilities and better performance (Rajabalinejad, 2018a,b, 2019a,b,c, ).

The optimal integration of products with everyday life faces numerous challenges due to the high pace of technological advancement and the dynamic needs of the environment across the full system lifecycle. Systems must remain fit for purpose and adapt their services according to their environmental dynamics. The optimal integration of new technology with operational systems is becoming increasingly important, with resilient services increasingly demanded (Wied, Oehmen, & Welo, 2020). Failure to achieve proper integration creates risks and wastes valuable resources. The improper integration of new systems may expose stakeholders to additional costs, lead to suboptimal services, waste scarce resources, harm people, damage assets, or even damage other systems or the environment. Suboptimal integration often leads to the redesign and reengineering of products or services, which can become very expensive if problems are recognised too late, for example in the operational phase or at the end of a project lifecycle. A survey conducted by the Standish Group revealed that risk mitigation during the operational phase may be up to 30 times more expensive than risk management in early design phases (Bijan, Yu, Stracener, & Woods, 2013). Brombacher (2019) showed that a high percentage of consumer electronic products are returned to the manufacturer without any fault, primarily because of issues concerning their integration with human life or the environment (Brombacher, 2019).

Geographers must be aware of this need to overcome the integration challenges and deliver the services demanded. They need to design for integration because it ensures that the products are modular, reusable, upgradable, context aware, self-organising and interoperable, as well as offering data-driven capabilities. In relation to systems, integration by design facilitates implementation and operation, and also simplifies the training of operators for capital assets. This implies the need for methods and techniques to support the proper integration of newly developed systems or products. The challenge here is far beyond technical installation and entails more than the integration of hardware, software and humans in relation to a single product or system. In fact, integration issues occur at different levels, and their consequences may extend beyond technical matters. The high pace of technological development demands strategies that not only fulfill the technical requirements but also successfully address the interoperability and dependability of systems, data integrity, security or privacy matters (Rajabalinejad, 2018).

The integrated system theory is applicable to tourism destination regions since the theory identified the tourism resources in Nigeria which River Ethiope Region is inclusive. The theory can be applied in comparing the patronage/participation of tourism facilities in tourists sites in Nigeria by looking at the residents' perception on the state of tourism. The theory can be applied in ascertaining whether the environmental potentials of the various tourism resources/regions around River Ethiope are affected by Covid-19 pandemic.

### **1.3 Literature Review**

The Covid-19 pandemic situation badly hit on the economic development of almost all countries in the world. It caused the largest downfall of the economy in history. More advanced economies like the USA, UK, Japan, and Europe are also experiencing the downfall of their economies due to the spread of Covid-19. The World Trade Organization forecasts that trade activities may drop by 32% in 2020. The poor economic performance occurs due to the weak demand, supply chain disruptions, travel restrictions, and the Lockdown policy, which are preventive actions for further spread of the virus. Those restrictions may pose pressure on the economic growth of the world. The International Labor Organization (ILO) estimates the impact of the Covid-19 pandemic to increase global unemployment between 5.3 million to 24.7 million (ILO, 2020). This leads to the loss of economic activities with loss of jobs. The Covid-19 outbreak impacts all sectors of the economy, such as manufacturing, tourism, financial, service, trade, transport, and people in every field in every country with more significant economic shocks. Due to the uncertainty and fear of the pandemic, most firms are more likely to have low profits as people are advised to stay at home, with travel bans and cancellation of events, and the prohibition of mass gatherings (Horowitz, 2020).

#### **1.3.1 Impact of Covid-19 on the Tourism Resources**

Covid-19 affects every aspect of human life across the globe. These ranges from postponement of many social and cultural events, games and sporting events, shutting down of institutions and centres of learning and closing of internal and international borders. The tourism resources is dealing with an unprecedented crisis due to the disruption caused by the global Covid-19 pandemic. The challenges created by Covid-19 impacts almost every part of a tourism business operation, revenue generation, room occupancy levels, staffing plans, and food and beverage provisions among others as further explained below.

#### **1.3.2 Strain on the Operations and Revenue Generation of the Tourism resources:**

The restrictions enacted and enforced by the government of Nigeria to curb the spread of the Covid-19 virus, especially, the closure of the country's land borders, air-space and sea borders put a strain on the inbound tourists and business travelers who come from outside the country; thus, the border closures and restrictions on

public gatherings, deprived tourism resources such as hotels, restaurants, and aviation catering of their major patrons thus, affecting their revenue generation. For instance, hotel revenue before emergence of Covid-19 in Nigeria expanded at 22.6% compound annual rate of \$US1.1 billion in 2018 (PricewaterhouseCoopers, 2018). The report further opined that Nigeria's hotel revenue was expected to grow by 507 million dollars by 2020. However, reports from four of the major listed hotels on the Nigerian Stock Exchange, shows a revenue decline of nearly 90%, due to a fall out of the COVID-19 induced lockdowns (Nairametrics, 2020). The index in the above information shows that Covid-19 has a negative impact on revenue generation capacity of the Nigeria's tourism resources.

It is pertinent to report that occupancy rate of all hotels in Nigeria are decreasing as well as wearing a deserted look due to Corona virus outbreak. The Pre-Covid-19 statistics on hotel occupancies in Nigeria shows that Nigeria's hotel industry accounted for 49.8%, 44.7%, 43.6%, 42.4%, and 42.6% occupancies in 2014, 2015, 2016, 2017, and 2018 respectively (PricewaterhouseCoopers, 2018). This however implies that demand for hotel accommodation for instance is on the average. However, recent statistics shows that "the slow pick up of international travels, restriction on large gatherings, the switch to virtual meetings, and fear of the virus, has further reduced demand for hotels in Nigeria thus, steeping occupancy levels to its lowest – less than 5%" (Nairametrics, 2020). The implications of this are that Nigeria tourism resources is seriously losing demands of her major products hence, the physical capacity of hotel facilities in Nigeria are underutilized especially in places like Lagos, Abuja, Calabar, Port Harcourt, Asaba, Uyo, Kano, Kaduna, etc.

### **1.3.3 Job Losses:**

It has been reported that tourism resources in Nigeria is highly labour intensive despite recent trend of technology integration. However, recent realities in the Nigeria's tourism resources especially in places like Lagos, Abuja, Calabar, Port Harcourt, Asaba, Uyo, Kano, Kaduna, etc show low patronage of restaurant businesses, major crashes in aviation catering services, closed hotels, and clubs including, event centers due to emergence and resurgence of Covid-19 pandemic. These have resulted in huge losses and large-scale unemployment (ILO, 2020). The dire state of financial capabilities of major hotels listed on the Nigerian stock exchange for instance has forced them to consider massive job cuts, and cost reduction measures in a bid to survive. At the inception of the pandemic, these four major hotels maintained a 100% salary payment to over 900 employees in March and April, 2020. As at the end of November, 2020, their workforce headcount had reduced by more than 60%.

### **1.3.4 Mass Sales of Tourism Business Facilities:**

One observed concern occasion by the emergence and resurgence of Covid-19 on the Nigeria's tourism resources is uncontrolled rate of putting up tourism business premises and facilities for sales in recent time due to bankruptcy. The crushing impact of Corona virus on the travel industry has a devastating effect on hotels in Nigeria. International travelers also cancelled their travel schedule due to Covid-19. Thousands of small hotels, resorts, motel, travel agencies and other travel related organization have to close their service due to this pandemic. Due to this, Nigeria hotel owners, and restaurant entrepreneurs practically finds it extremely difficult to run and sustain their businesses thus, exerting intense pressure on them to putting up sales advertisement of their properties on the country social media, and television stations seeking for interested buyers. This situation is worsened by poor government support and weak business recovery policy for tourism business owners.

UNWTO (2020) made initial assessment to potential economic impact by comparing the SARS outbreak of 2003 as benchmark and come to several conclusions. It predicts that there will be a decrease of 1% to 3% in international visitor arrivals worldwide in 2020, which is down from a 3% to 4% expected growth in the beginning of January 2020. It equals to a loss of USD 30 to 50 billion in expenditure of international visitors. Up until this point, UNWTO predicts that Asia Pacific region will be affected the most where they can face a 9% to 12% decline in tourist arrivals, which is down from 5% to 6% expected growth as forecasted in early January 2020. Another reason why the tourism resources will need time to recover is because it is 80% comprised by small and medium sized enterprises, which will be impacted in particular. This may impact people that highly dependent on tourism as their main income.

### **1.3.5 The impact on hotels:**

Hotels across the world witnessed booking cancellations worth billions of dollars, and the hotel industry sought a \$150bn bailout (Ozili & Arun, 2020). Resorts and hotels that were booked by excited vacationers and corporate conference-goers before the present covid-19 pandemic received calls to postpone plans or cancel entirely their earlier proposed events. This has made most of the hotels and restaurants to embark on temporary suspension of normal operations which puts the estimated loss of jobs to 24.3 million globally, and 3.9 million in the US alone due to the decline in hotel occupancy during the pandemic period (Ozili & Arun, 2020). The economic losses of the covid-19 pandemic on the hotel and tourism resources was enormous. The impact of Covid-19 made it extremely difficult for many of the tourism resource's players to continue paying

staff with a sharp drop in sales and income, resulting in job loss. Many hotels closed down because of low patronage and inability to meet up with payment of worker's salary and electricity bills. Many have already cut down on their workforce, while others slash their workers' salaries by 50 per cent. This was common in Lagos State, Delta State, Bayelsa State, Rivers State, Akwa Ibom State, Cross River State, Enugu State, Anambra State, Kano State, Kaduna State and other affected States.

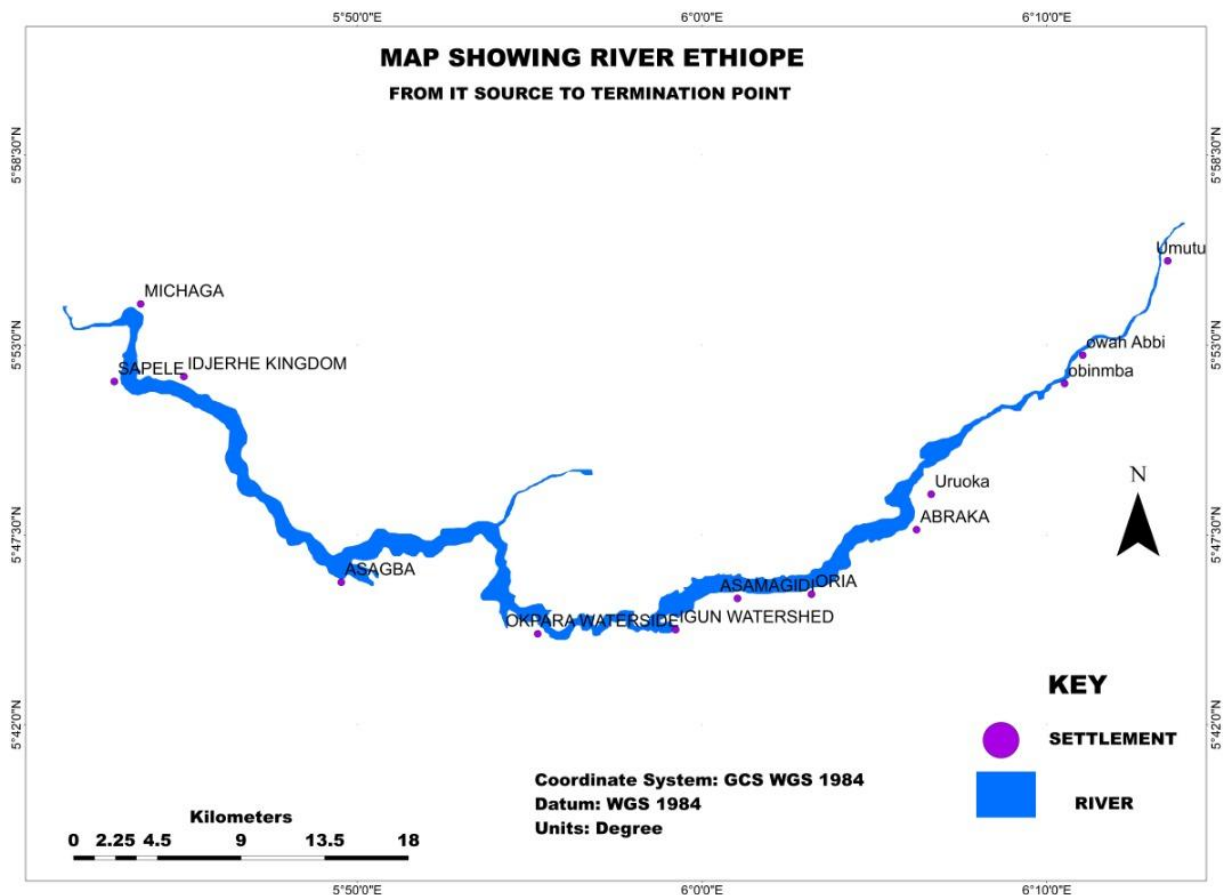
### 1.3.6 Tourist Inflow:

Although the tourist inflow into Nigeria has reduced in recent times owing to increasing security challenges in the country such as the Boko Haram insurgency, armed banditry and kidnapping among others. The recent outbreak of covid-19 and lockdown policies that follows has only exacerbated the challenges of reduced tourist inflow into the country. According to IATA as at 23rd April, 2020, it is estimated that because of covid-19, Nigeria will have 4.7 million fewer travellers resulting in US\$0.99 billion revenue loss, risking 125,400 jobs and US\$0.89 billion in contribution to Nigeria's economy (Interview, 2020).

## II. METHODOLOGY

### 2.1 Study Location and Size

River Ethiope Region is located in Delta State which is situated in the southern part of the Niger Delta region of Nigeria. River Ethiope Region lies approximately within latitude  $05^{\circ}00'1\text{N}$  and  $06^{\circ}30'1\text{N}$  of the equator and longitude  $05^{\circ}00'1\text{E}$  and  $05^{\circ}45'1\text{E}$  of the Greenwich meridian. It is bounded by Edo State in the North, Bayelsa State in the South-East, Anambra State in the East and the Atlantic Ocean in the West. Delta, as a state, has experienced rapid increase in population over the years, due to the presence of various tourist sites such as the River Ethiope Source, shrine, hotels, bars, beaches and restaurant. This attracts people from surrounding area, to the state, thus resulting to the rapid development of the area. The River Ethiope region covers  $1,920\text{km}^2$ .



**Fig 1: Map Showing River Ethiope Region**

Source: Arc GIS Design (2021)

The study adopts the quantitative method that made use of a structured questionnaire as the instrument of data collection. The questionnaire was randomly distributed to a sample of 350 respondents that was from a population of 497,668 with the aid of Taro Yamane formula. The stratified random sampling was used to select the participants for the study divided the population into different strata and simple random sampling method was used to select respondents that participated in the survey. A reliability value of 0.89 established the internal consistency of the instrument, which and its reliability for use in data collection. The Geographic Information System software (ArcGIS, 2021 version) was used to produce spatial analysis map to depict the spread of Covid-19 pandemic in Delta State. The data collected was analyzed and the hypotheses of the study were tested with the use of regression analysis obtained with the aid of the Statistical Package for the Social Sciences (SPSS version 21) and results obtained were presented in tables for presentation and discussion.

### III. RESULTS AND DISCUSSION

Table 1 showed the tourism facilities available before and after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic within River Ethiope tourism region in Delta State. About 128 tourism facilities was recorded within River Ethiope tourism region in Delta State with 76 facilities recorded before the outbreak of Covid-19 which reduced to 52 after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic. It was observed that tourism patronage increased during events, occasion, festivals, memorial events and other relevant occasions which took place before the outbreak of Covid-19 which recorded a high turn up especially in Abraka, Umuaja, Umutu, Obiaruku, and Eku which reduced drastically after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic. It could also be deduced that most of the tourists who patronize tourism resources within River Ethiope tourism region in Delta State are not residence of the region thus, corroborates findings in the study by Ndakara & Boyitie (2019). They do so for tour purpose other than mere tourist visit.

**Table 1:** Tourism facilities available before and after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic within River Ethiope tourism region in Delta State

Towns/Cities	Total No. of Facilities	Availability of Tourism Facilities	
		Before the Covid-19 outbreak	After the 1 <sup>st</sup> & 2 <sup>nd</sup> phase of Covid-9 pandemic
Abraka	46	29	17
Umutu	15	9	6
Umuaja	18	9	9
Obiaruku	22	12	10
Eku	27	17	10
<b>Total</b>	<b>128</b>	<b>76</b>	<b>52</b>

**Source:** Delta State Tourism Board, Ministry of Commerce and Tourism, 2021

Table 2 showed the seasonal variation of tourism patronage in the area. It could be deduced that about 123, 45, 110, 880, 19, 243, and 155 people patronized of Hotel, Natural Park, Monument, Beach, Palace, Tourist tour and Bar/Restaurant respectively from January to December indicating that tourism patronage is higher in seasonal period than non-seasonal period. It could therefore be deduced that places with natural monuments, hotels, natural parks, palace, gardens, bar/restaurant, and eateries have higher patronage than places which don't have.

**Table 3:** Tourism Patronage within river Ethiope tourism region in Delta State

Months	Tourism Patronage						
	Hotel	Natural Park	Monument	Beach	Palace	Tourist tour	Bar/ Restaurant
January	13	5	3	89	1	2	11
February	6	3	2	36	0	27	9
March	4	2	5	88	2	7	0
April	2	1	1	69	0	5	20
May	5	4	17	34	1	18	24
June	7	1	3	78	1	9	14
July	7	1	4	67	1	8	27
August	8	3	2	71	2	51	0
September	11	2	12	43	1	35	0
October	25	6	28	37	0	44	19
November	13	2	10	82	2	16	0
December	22	15	23	186	8	24	31
<b>Total</b>	<b>123</b>	<b>45</b>	<b>110</b>	<b>880</b>	<b>19</b>	<b>243</b>	<b>155</b>

**Source:** Delta State Tourism Board, Ministry of Commerce and Tourism, 2021

Table 3 showed the Patronage and Participation of hotel facilities before and after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic within River Ethiope tourism region in Delta State. A total of 116,835 tourists patronized

major hotels in Abraka (such as Bysl Suits, Regent, 3Cee, Hotel De Bovo, Rivotel, Gordons, etc) of which Abraka had a total patronage of 65,586 before the outbreak of Covid-19 pandemic and 51,249 after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic. A total of 26,940 tourists patronized major hotels in Umutu (such as MCAngel) of which Umutu recorded 15,123 patronage before the outbreak of Covid-19 pandemic and 11,817 patronage after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic. No hotel facilities was found in Umuaja as such hotel patronage was not recorded. In Obiaruku, a total of 69,596 tourists patronized major hotels in Obiaruku (such as Fregmond, GNN, etc) of which Obiaruku recorded 39,069 patronage before the outbreak of Covid-19 pandemic and 30,527 patronage after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic. Lastly, in Eku, a total of 62,860 tourists patronized major hotels in Eku (such as Rejigal, etc) of which Eku recorded 35,287 patronage before the outbreak of Covid-19 pandemic and 27,573 patronage after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic. A total of 276,231 tourists patronized major hotels in Abraka, Umutu, Eku, and Obiaruku with 155,065 patronage recorded before the outbreak of Covid-19 pandemic and 121,166 patronage after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic indicating that hotel patronage increased before the outbreak of Covid-19 and reduced drastically after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of covid-19 Pandemic.

**Table 4:** Patronage and Participation of hotel facilities before and after the 1<sup>st</sup> and 2<sup>nd</sup> Phase of Covid-19 Pandemic within River Ethiope tourism region in Delta State

Hotel Destinations	Hotel Patronage		
	Total Number of Patronage	Before the Covid-19 outbreak	After the 1 <sup>st</sup> & 2 <sup>nd</sup> phase of Covid-9 pandemic
Abraka	116,835	65,586	51,249
Umutu	26,940	15,123	11,817
Umuaja	0	0	0
Obiaruku	69,596	39,069	30,527
Eku	62,860	35,287	27,573
<b>Total</b>	<b>276,231</b>	<b>155,065</b>	<b>121,166</b>

Source: Fieldwork, 2021

Table 5 shows the cases of Covid-19 in Delta State. A total of 1800 confirmed cases, total active cases was 100, total discharge cases was 1,650, and total death cases was 49 was recorded in Delta State between December, 2019 to October, 2021. It was observed that Oshimili North (515 confirmed cases, 19 death cases), Uvwie (224 confirmed cases, 7 death cases), Warri South (206 confirmed cases, 1 death case) and Oshimili South (174 confirmed cases, 27 death cases), Ughelli North (148 confirmed cases, 9 death cases), and Sapele (118 confirmed cases) recorded the highest while Patani and Burutu (1 confirmed case respectively) recorded the lowest. However no Covid-19 case was confirmed in Warri South West region.

**Table 5:** Covid-19 Cases in Delta State

S/N	L.G.A	No. of Confirmed Cases	No. of Active Cases
1	Aniocha North	7	1
2	Aniocha South	24	3
3	Bomadi	13	0
4	Burutu	1	0
5	Ethiope East	17	0
6	Ethiope West	83	0
7	Ika North East	26	3
8	Ika South	46	6
9	Isoko North	5	3
10	Isoko South	15	4
11	Ndakwa East	2	0
12	Ndakwa West	23	2
13	Okpe	45	0
14	Oshimili North	174	27
15	Oshimili South	515	19
16	Patani	1	0
17	Sapele	118	0
18	Udu	73	1
19	Ughelli North	148	9
20	Ughelli South	17	4
21	Ukwuani	14	7
22	Uvwie	224	7
23	Warri North	3	3
24	Warri South	206	1
25	Warri South West	0	0
	<b>Total</b>	<b>1,800</b>	<b>100</b>
	<b>Mean</b>	<b>72</b>	<b>4</b>

Source: Our World in Data, 2021; JHU CSSE Covid-19 Data, 2021

### Hypothesis one

There is no significant effect of environmental /resources around the River Ethiope region affected by the Covid-19 pandemic.

**Table 4.1: Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.958 <sup>a</sup>	.917	.876	12.85082

Source: SPSS Output, 2021

Table 4.1 shows that the Regression model of .958 is significant ( $P; .958 > 0.05$ ) at 0.05 level of significance indicating that there is significant effect of environmental potentials/resources around the River Ethiope region affected by the Covid-19 pandemic. From the analysis above,  $H_0$  is rejected while  $H_1$  is accepted. It could therefore be deduced that environmental potentials/resources around the River Ethiope region is seriously affected by the Covid-19 pandemic. The impact of covid-19 on environmental resources was observed by Obi & Ndakara (2020), while the attraction levels of regional resources are of great importance (Ukoji and Ndakara, 2021).

### Hypothesis two

There is no significant variation in the effect of Covid-19 pandemic on the tourism potentials between the various types of tourism region along the River Ethiope region.

**Table 4.2: Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877 <sup>a</sup>	.769	.606	29.613185

Source: SPSS Output, 2021

Table 4.2 shows that the Regression model of .877 is significant ( $P; .877 > 0.05$ ) at 0.05 level of significance indicating that there is significant variation in the effect of Covid-19 pandemic on the tourism potentials between the various types of tourism region along the River Ethiope region. From the analysis above,  $H_0$  is rejected while  $H_1$  is accepted. It could therefore be deduced that Covid-19 pandemic have noticeable effects on tourism potentials within the various types of tourism region along the River Ethiope region.

## IV. CONCLUSION

The analysis from the above findings are in line with the findings of Sanagustin, et al. (2019) who observed that new environmental regulations have been applied to protect the environmental assets, and adopt new laws in order to control the use of the landscape and to reduce damage so as to motivate tourists in their travel, values, motivation and activities in destination regions. This also conforms with the findings of Long and Perdue (2020), who found that tourism companies are to survive, training and educating the workforce is of great importance especially as a result of Covid-19 pandemic. This also corroborates with the findings of Uysal (2020), Charters and Saxon (2021), who observed that tourism destinations are poorly managed and patronized after the 1<sup>st</sup> and 2<sup>nd</sup> phase of Covid-19 pandemic which have serious impact on tourism and contributes to the loss of cultural integrity and identity of the destination.

The study suggest that there is significant effect of environmental resources around the River Ethiope region affected by the Covid-19 pandemic since the model ( $R = .958$ ) is significant at 0.05 level of significance and the F-calculated value of 2.60 is greater than the F-critical table value of 0.553 at 0.05 level of confidence.

The study concluded that there is significant variation in the effect of Covid-19 pandemic on the tourism potentials between the various types of tourism region along the River Ethiope region since the model ( $R = .877$ ) is significant at 0.05 level of significance and the F-calculated value of 2.237 is greater than the F-critical table value of 0.553 at 0.05 level of confidence

## V. RECOMMENDATIONS

There should be some support provide by the government in the area of the provision of financial resources to help tourist centres cope with the economic shock witnessed in the COVID-19. This to be able to manage these facilities and operate with affordable fees that are moderate enough to attract customers. World Health Organization (WHO) and regulatory authorities should continuously monitor the use of Covid-19



vaccines to identify and respond to any safety issues that might arise, and through that process to assure they remain safe for use around the world.

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