

EFFECT OF INFRASTRUCTURE DEVELOPMENT ON THE EXPANSION OF TOURISM BUSINESSES IN AGODI GARDENS IBADAN OYO STATE, NIGERIA

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Abstract

This study investigates how infrastructure development influences the expansion of tourism businesses in Nigeria using several regression analyses on data from 270 respondents. The study found that the security infrastructure positively and significantly influences the increase in tourism, with a coefficient of 0.496 and a t-value of 5.794 ($p = 0.000$). The communication infrastructure showed a negative influence with a coefficient of -0.275 and a t-value of -3.309 ($p = 0.001$). Utility infrastructure equally negatively affected tourism growth with a coefficient of -0.201 and a t-value of -3.064 ($p = 0.002$). Furthermore, the study found a negative correlation between utility infrastructure and tourism growth, with a coefficient of -0.110 and a t-value of -2.252 ($p = 0.032$). The study ends with several suggestions: investing in better security infrastructure to increase safety, modernising communication systems to improve accessibility, addressing utility shortcomings by guaranteeing consistent energy and water supply, and strengthening financial infrastructure by improving credit access and reducing interest rates. These recommendations attempt to fix the infrastructure problems, thereby promoting the expansion of Nigerian travel agencies.

Key words: infrastructure development, tourism expansion, businesses, Nigeria

INTRODUCTION

People are increasingly realizing how important tourism is to the global economy and how much it can drive social development. Infrastructure development is heavily dependent on improving tourism experiences and ensuring continuous development. This research investigates the importance of infrastructure development in tourism, specifically referencing worldwide trends and Nigerian-specific observations. Infrastructure building is absolutely essential for global travel business expansion. Developing infrastructure spanning transportation networks, hotel facilities, communication systems, and utility services can help to draw visitors and enhance their experiences. Highways, railroads, and airports, among other efficient means of mobility, help visitors simply move to and from different points. Furthermore, contemporary infrastructure enhances the safety and comfort of travel, therefore affecting visitor satisfaction and return trips

[13].

Furthermore, better infrastructure helps to diversify the tourism offerings. Creating cultural centres, museums, and entertainment venues, for instance, gives guests more options of activities, thereby extending their stay and increasing the tourism revenue. Important in the digitisation of tourism services as well is the integration of information and communication technology (ICT) into travel infrastructure, enabling more effective marketing and management of tourist destinations [3].

Sustainable infrastructure is another critical factor because it guarantees that the increase in tourism does not compromise environmental integrity. To help the long-term survival of tourism destinations, the Global Sustainable Tourism Council (GSTC) underlines the need for creating infrastructure that lowers negative environmental effects, such as pollution and resource depletion [6]. Infrastructure development is particularly critical given Nigeria's outstanding cultural and ecological legacy, which has outstanding

tourism potential. Infrastructural development is especially important in that nation. However, poor infrastructure has significantly hampered the realisation of this promise. Unlocking Nigeria's tourism potential and positioning the country as a competitive tourist destination in Africa depends on improvements in utilities, housing, and transportation, as well as in infrastructure. Connecting tourism spots across Nigeria's several areas depend on the state of transportation infrastructure such as road networks, airports, seaports, among other things. Often, poor road conditions and restricted air connectivity have made it difficult for visitors to reach isolated but naturally significant areas [2]. Improving these infrastructure aspects will help to greatly increase visitor experience and access. Furthermore, the support of tourism operations in Nigeria depends on the evolution of utilities, including electricity, water supply, and telecommunications. Many tourist locations experience frequent power outages and insufficient water supplies, which lowers the quality of the services provided and therefore affects the overall visitor experience [5]. Improving tourism service delivery depends on addressing these infrastructure issues. Investment in digital infrastructure is also required to modernise Nigeria's tourism sector. ICT's application in tourism marketing and management can raise the global awareness of Nigerian tourist locations, draw more guests, and enhance sectoral operational effectiveness[9].

We cannot overestimate the importance of infrastructure improvement for travel. Globally, infrastructure is the backbone of the travel sector since it makes it possible to provide services with efficiency and sustainability. Unlocking Nigeria's tourism potential and promoting economic development depend on addressing infrastructure gaps. Thus, the sustainable growth of tourism in Nigeria depends on calculated investment in security, utilities, and digital infrastructure.

Hypotheses

H01: Security infrastructure has no significant effect on the expansion of tourism businesses in Agodi Gardens, Ibadan.

H02: Communication infrastructure has no significant effect on the expansion of tourism businesses in Agodi Gardens, Ibadan.

H03: Utility infrastructure has no significant effect on the expansion of tourism businesses in Agodi Gardens, Ibadan.

H04: Financial infrastructure has no significant effect on the expansion of tourism businesses in Agodi Gardens, Ibadan.

Problem statement

Although economic development depends on tourism, its spread usually depends on enough infrastructure. Agodi Gardens in Ibadan, Oyo State, has enormous potential as a major tourist destination.

The gardens sit on 150 acres of land. At the beginning, Agodi Gardens were named **Agodi Zoological and Botanical Gardens** and were created in 1967. In 1980, the garden was destroyed by the Ogunpa flood disaster when most of the animals were swept away by the raging water. In 2012, The Oyo State Government started to renovate the gardens which were reopened in 2014.

It was founded as a biological and recreational centre as well as a source of educational services both for inhabitants and visitors who want to spend time, learn about and enjoy admiring the nature in the garden and animals. It is a reference meeting point for botanists, zoologists, environmentalists, naturalists and users of medicinal plants. It was created as a gene pool and biodiversity complex and amusement park.

Its recovery after more floods transformed the gardens into a modern theme park and zoological garden [12, 8,10].

However, infrastructure in this garden is very important for the expansion of tourism-related companies.

In this field, current research does not thoroughly investigate the link between infrastructure development and corporate expansion. By looking at how infrastructure affects the expansion and sustainability of tourism companies in Agodi Gardens, this study seeks to close this gap. The results aim to provide stakeholders and legislators with

practical information so they can improve tourism growth in this and related areas.

Literature review

Theoretical framework

Simon Kuznets's substantially developed Economic Development Theory from the 1950s offers a basic framework for appreciating the part infrastructure plays in economic development. According to Kuznets' thesis, promoting economic development depends critically on infrastructure enhancements, including changes in utilities, transportation, and communication networks. These gains in efficiency, reduced transaction costs, and investment attraction all contribute to economic growth.

This theory is quite relevant regarding tourism. It suggests that investments in infrastructure directly affect the growth of tourist businesses by increasing the attractiveness of tourism locations, enhancing access to destinations, and boosting the quality of services. Better utilities and communication infrastructure, for example, can improve the visitor experience; better transport systems can help encourage easier movement to and within tourist destinations. Using Kuznets' Economic Development Theory, researchers can explore how infrastructure development contributes to the growth and success of tourism companies, providing insights into how targeted investments can stimulate economic activity and sustainable development within the sector.

Empirical review

Michael Porter (2015) [11] conducted research in Switzerland, looking at a sample of three hundred travel agencies to see how contemporary infrastructure might affect travel growth. The results revealed that by increasing access and operational efficiency, Switzerland's highly developed communication and transport systems significantly helped tourism businesses grow. Porter's studies showed how contemporary infrastructure investments help to maintain the competitiveness of tourism companies in developed economies. In 2016, [4] investigated how infrastructure

construction influences the expansion of Taiwanese tourism businesses. The study concentrated on how better infrastructure might affect the growth and operations of 250 travel agencies spread over different areas of Taiwan. [4] studies indicate that improved transport infrastructure, particularly the construction of high-speed rail and improved road networks, significantly contributed to the growth of tourist businesses by increasing visitor accessibility and reducing trip times. The study also showed that improved utility infrastructure—including consistent electricity and water supply—significantly influences the quality of services provided by these businesses.

Because [4] empirical studies demonstrate a clear link between tourism business expansion and infrastructure development, they are important. It provides a useful foundation for legislators seeking to increase tourism through infrastructure upgrades because it demonstrates how focused infrastructure investments can result in significant gains in company performance within the tourism sector.

[7] conducted research in India looking at how infrastructure development affects the travel industry. Using a sample size of 400 travel-related companies, [7] found that changes in road networks, utilities, and telecommunications significantly influenced the growth of tourist businesses. The study underlined the need for focused infrastructure projects in underdeveloped nations to release the potential of the tourism sector, usually hampered by poor amenities. [1] examined how infrastructural development affected Lagos State's tourism industry in Nigeria. According to [1], from a sample of 200 travel companies, inadequate infrastructure—especially in utilities and transportation—has hampered the expansion of the travel industry. The study highlighted that the greatest obstacle to Nigerian tourism companies' growth is still infrastructural shortcomings, implying that achieving the nation's tourist potential depends on wise infrastructure investments.

Conceptual framework

Tourism expansion

Expanding tourism refers to the development and diversity of tourism-related activities and services, therefore generating more visitors and more general economic effects. This expansion drives infrastructural development, improves world connectivity, and stimulates economic growth through job creation and cultural interaction. Moreover, we require sustainable methods to manage environmental impacts and ensure enduring sustainability. Knowing how tourism interacts with economic, cultural, and environmental elements becomes essential as it grows because it helps to create strategic plans and policies that maximise the advantages of tourist expansion while reducing possible negative consequences for destinations.

Infrastructure development

Infrastructure development is the systematic construction, improvement, and maintenance of fundamental physical and organisational systems required for a society's or economy's operation. Public infrastructure, utilities, communication networks, and transport systems are crucial for facilitating economic activity and raising quality of life. Effective, improved access to resources and services, as well as effective infrastructure development, can support sustainable development, drive economic growth, and aid social integration. In the context of tourism, adequately built infrastructure is essential for improving accessibility, attracting visitors, and guaranteeing a seamless and gratifying experience, thereby supporting the sector's long-term viability and competitiveness.

Security infrastructure

Within a specific context, security infrastructure is the physical, technological, and organisational system meant to guard people, assets, and information. Surveillance systems, safe communication networks, access control mechanisms, and emergency response protocols are all crucial for maintaining safety and order. Strong security infrastructure is absolutely essential in the context of tourism to guarantee the safety of guests and employees, improve destination appeal, and create a feeling of security that promotes travel activity. By reducing risks and fostering a safe environment for all

stakeholders, effective security infrastructure helps the viability and stability of tourism businesses.

Communication infrastructure

There are telecommunications networks, internet connectivity, and broadcasting services. Communication infrastructure refers to the technologies and systems that allow the distribution of knowledge over distances. It forms the foundation of modern communication, facilitating the exchange of data, voice, and multimedia among individuals and organizations. Strong communication infrastructure is critical in the travel industry for operational coordination, improving service delivery, and providing real-time information to visitors. It advances digital marketing, online booking systems, and mobile apps, enhancing the whole travel experience and operational effectiveness. The development, competitiveness, and sustainability of tourism locations depend on strong communication infrastructure.

Utility infrastructure

Utility infrastructure is the basic services and facilities needed by companies and communities to offer waste management, water, electricity, and sanitation. As a result, these systems are fundamental; public health, safety, and the smooth operation of economies depend on them. Reliable utility infrastructure is essential in tourism for the operation of hotels, restaurants, and other services, thus directly influencing the quality of the visitor experience. By lowering operating interruptions and improving service delivery, sufficient utilities help tourism businesses to be sustainable. Therefore, the long-term survival and appeal of tourism locations depend on strong investment in utility infrastructure.

Financial infrastructure

Financial infrastructure refers to the organisations, markets, and systems that facilitate capital access, financial resource management, and financial transactions. This covers financial stability and efficiency—ensuring banking services, payment systems, credit facilities, and regulatory systems. Well-developed financial infrastructure is essential in tourism if we are to support the expansion

of tourism companies, enable investments in tourism projects, and ease visitor transactions. It ensures that financial services are available to both customers and industry providers, thus strengthening financial resilience. Strong financial infrastructure is necessary to maintain tourism growth and promote economic development in travel destinations.

MATERIALS AND METHODS

Researchers investigated how infrastructure development affected the growth of tourism-related companies using multiple regression analysis. Drawing from tourism companies in the study area, the study had a sample size of 270 respondents. The study chose this statistical approach to evaluate the simultaneous effect of several independent variables, such as security, communication, utility, and financial infrastructure, on the dependent variable, the expansion of tourism enterprises.

Throughout data collection, researchers extensively verified the questionnaire for validity and dependability. Expert evaluation helped us ensure content validity by matching the questionnaire items to the research goals. The researcher verified construct validity via factor analysis and ensured that the items

fairly assessed the intended constructions. This study used Cronbach's alpha to evaluate dependability. Results on all scales exceeded 0.70, indicating a high degree of internal consistency. The questionnaire's strong validity and dependability guaranteed the precision and confidence of the data acquired, thereby supporting the legitimacy of the study's results.

RESULTS AND DISCUSSIONS

The model summary shows a quite favourable correlation between tourism increase and infrastructural development ($R = 0.362$).

An R square value of 0.131 helps to explain 13.1% of the variance in tourism expansion: financial, utilities, communication, and security infrastructure.

With a modified R square of 0.118, the number of predictors explains 11.8% of the variation.

The 0.84292 standard error points to a noteworthy, inexplicable variance. Still, the model is statistically significant, as evidenced by a F change of 9.980 and a significance level of 0.000.

With a Durbin-Watson score of 1.197, the residuals show modestly positive autocorrelation (Table 1).

Table 1. Model Summary on Effect of Infrastructure Development on the Expansion of Tourism Businesses in AgodiGardens, Ibadan. Oyo State Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change		df1	df2	Sig. F Change	
1	.362 ^a	.131	.118	.84292	.131	1.197	4	265	.000	1.197

a. Predictors: (Constant), Financial Infrastructure, Utility Infrastructure, Communication Infrastructure, Security Infrastructure

b. Dependent Variable: Tourism Expansion

Source: Field work, 2024.

According to the ANOVA (Table 2), the regression model explains the statistically significant impact of infrastructure development on tourism growth. The independent variables, such as financial, utility, communication, and security infrastructure, explain the heterogeneity in the expansion of tourism with 28.365 as the regression sum of squares. The residual sum

of squares, 188.287, reveals the inexplicable variance. The mean square for the regression is 7.091 with 4 degrees of freedom; for the residuals, it is 0.711 with 265. With a significance level of 0.000, the F -statistic of 9.980 verifies that the independent factors taken together have a statistically significant influence on the growth of tourism.

Table 2. ANOVA on Effect of Infrastructure Development on the Expansion of Tourism Businesses in Agodi Gardens Ibadan, Oyo State, Nigeria

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.365	4	7.091	9.980	.000 ^b
Residual	188.287	265	.711		
Total	216.652	269			

a. Dependent Variable: Tourism Expansion.

b. Predictors: (Constant), Financial Infrastructure, Utility Infrastructure, Communication Infrastructure, Security Infrastructure

Source: Field work, 2024.

The coefficient table (Table 3) provides an understanding of how different types of infrastructure affect tourism growth. When other infrastructure factors stay constant, the constant ($B = 3.919$) implies a baseline level of 3.919 for travel development. With an unstandardised coefficient (B) of 0.496 and a high t -value of 5.794 ($p = 0.000$), security infrastructure shows a strong positive impact on tourism growth. The communication infrastructure suffers with a coefficient of -0.275 and a t -value of -3.309

($p = 0.001$), indicating a significant negative association.

Utility infrastructure has similar adverse impacts on tourism development ($B = -0.0201$, $t = -3.064$, and $p = 0.002$). Though its influence is less evident, financial infrastructure also exhibits a negative effect ($B = -0.110$, $t = -2.152$, $p = 0.032$). These findings show that while other forms of infrastructure have negative effects, security infrastructure favourably stimulates tourism growth.

Table 3. Coefficients on Effect of Infrastructure Development on the Expansion of Tourism Businesses in Agodi Gardens Ibadan, Oyo State Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	3.919	.384		10.208	.000	3.163	4.675			
Security Infrastructure	.496	.086	.462	5.794	.000	.327	.664	.206	.335	.332
Communication Infrastructure	-.275	.083	-.261	-3.309	.001	-.438	-.111	-.023	-.199	-.190
Utility Infrastructure	-.201	.066	-.183	-3.064	.002	-.330	-.072	-.130	-.185	-.175
Financial Infrastructure	-.110	.051	-.133	-2.152	.032	-.211	-.009	-.046	-.131	-.123

a. Dependent Variable: Tourism Expansion

Source: Field work, 2024.

Discussion of findings

With a coefficient (B) of 0.496 and a high t -value of 5.794 ($p = 0.000$), our findings show that security infrastructure has a positive and noteworthy influence on tourism development. This is consistent with the general knowledge that tourism expansion depends on security, since safe surroundings motivate more travel and investment in tourism companies. Previous research, however, paid less attention to this particular emphasis on security infrastructure, implying

that in environments such as Nigeria, where security issues are more salient, this element may be especially important. On the other hand, [11] research in Switzerland found that increased access and operational efficiency of advanced communication infrastructure significantly boosts tourism firms. The state and functionality of the communication infrastructure in a developed nation like Switzerland and a developing nation like Nigeria could help to explain this disparity. In

Nigeria, inadequate or poor communication infrastructure could still cause problems rather than help tourism flourish. In our analysis, utility infrastructure likewise had a negative impact on the growth in tourism ($B = -0.0201$, $t = -3.064$, $p = 0.002$). Improvements in utilities, such as electricity and water supply, significantly improve the quality of services provided by tourism companies, supporting their growth in Taiwan [4] and [7]. In our case, the inadequate or erratic quality of utility services may discourage rather than inspire travel behaviour.

The study also highlights the less significant negative impact of financial infrastructure on tourism growth ($B = -0.110$, $t = -2.252$, $p = 0.032$). This outcome contradicts most of the studies, as improved financial infrastructure typically enables companies to expand by providing access to capital and financial tools. Our study indicates that problems including limited credit availability, excessive interest rates, or ineffective financial institutions could impede rather than encourage the growth of the travel sector. Although our findings emphasise the importance of security infrastructure in promoting tourism development, they overall show major difficulties with Nigeria's communication, utility, and finance infrastructure. These results emphasise the need for context-specific infrastructure development plans, especially in underdeveloped countries where infrastructure deficiencies may be the main impediments to tourism growth.

Contribution to knowledge

It highlights the importance of security infrastructure in promoting travel expansion. The study demonstrates the significant and beneficial impact of investing in security to create suitable environments for tourism expansion. This outcome adds to the body of knowledge by stressing the importance of security in the expansion of tourism, which could be especially relevant in circumstances when security concerns are of major relevance.

Unlike results from affluent nations, the research demonstrates an unexpected

detrimental influence of communication infrastructure. This implies that the present level of communication infrastructure in Nigeria could be insufficient or ineffective, therefore influencing travel negatively. This paper provides fresh ideas on how communication infrastructure could impede rather than promote tourism expansion in underdeveloped areas.

The study also notes how negatively utilities and banking infrastructure affect tourism growth. These results contradict the conventional wisdom based on earlier studies in developed and underdeveloped nations, where such infrastructure usually helps tourism to flourish. This study provides important evidence of the need for targeted improvements in utilities and financial systems to remove obstacles to Nigeria's tourism growth.

This study enhances the scholarly debate in general by providing a thorough understanding of the various effects of different infrastructure forms on the growth of tourism in a developing nation environment. It gives legislators a basis to customise infrastructure development plans that address specific possibilities and problems in the Nigerian travel industry.

CONCLUSIONS

This paper exposed the surprising negative effects of communication, utility, and financial infrastructure, as well as the vital need for security infrastructure. It also looked at how various infrastructure components influence the growth of Nigerian travel agencies. The findings reveal that in this aspect, shortcomings in communication, utility, and finance systems may hinder development, even if security infrastructure encourages tourism expansion.

These results emphasise the need for a cautious approach to infrastructure development that handles the specific issues faced by the Nigerian travel sector.

The study implies the following:
1. Invest in improved security systems to ensure a safer environment for companies and guests. This can mean improving monitoring

systems, increasing police presence, and ensuring ready availability of emergency services. Enhanced security will most likely attract more guests and boost company growth.

2. Modernising and improving communication infrastructure would help to support tourism companies' effective operations. To guarantee better accessibility and service delivery, these covers enhancing internet connectivity, telephone networks, and digital platforms.

3. Invest in dependable energy and water delivery systems to help solve flaws in the utility infrastructure. Improvements in these areas will help tourism companies deliver better services and reduce running interruptions, promoting the sector's growth.

4. Enhance Financial Infrastructure: By implementing improved banking services, facilitating easier access to credit facilities, and lowering interest rates, we can increase the financial resources available to tourism firms. Supporting financial infrastructure will allow companies in the tourism industry to overcome financing obstacles and enable expansion and investment. Following these suggestions will help Nigeria solve the identified infrastructural deficiencies and provide a more favourable environment for the establishment of tourism businesses, thereby promoting sector growth and supporting economic development.

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