

EVALUATION OF CROSS RIVER NATIONAL PARK AS A CATALYST FOR COMMUNITY LIVELIHOOD SUSTENANCE, NIGERIA

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Abstract: This research focused on evaluation of Cross River National Park as a catalyst for community livelihood sustenance, Nigeria. Interviews and Focus Group Discussions were used to obtained primary data. Reconnaissance survey was conducted for one month in the National park to assess the situation on ground and with the aid of a check-list. The Pearson Product Moment Correlation Coefficient was used to analyzed the data obtained from the study. Results findings shows that the current programs aimed at the development of the park's management were insufficient. To mitigate tensions between the park management and the communities, it is imperative to explore alternative livelihood options, with livestock rearing emerging as a viable avenue. This approach would provide the communities with improved economic opportunities.

Keywords: communities livelihood, development, ecosystem, economic opportunities, national park

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INTRODUCTION

A national park is an officially designated protected region established by a government to conserve and safeguard the natural environment and its distinctive elements, comprising wildlife, flora, scenery, and cultural legacy. Its primary purposes are to offer public enjoyment, facilitate educational activities, and promote scientific research. National parks are universally recognized as invaluable assets for preserving natural landscapes, fostering biodiversity, and offering recreational opportunities to visitors (Weijie, 2023). Nevertheless, National parks, designed primarily for conservation purposes, have the potential to contribute significantly to community livelihoods (Abukari and Mwalyosi, 2020; Mabibibi, 2023). In most countries of the world researches highlights the importance of considering the specific needs and aspirations of local communities while developing sustainable tourism and livelihood initiatives within national parks (Rule et al., 2022; Buhalis et al., 2023). Community engagement and participatory decision-making processes are vital for ensuring that conservation and livelihood goals align effectively, emphasizing local involvement in the management and governance of these protected areas (Armitage et al., 2020). Consequently, Sustainable tourism within

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national parks can contribute to job creation, income generation, and overall economic development in the surrounding communities (Hribar et al., 2023; Sharpley, 2020). Additionally, these parks provide opportunities for small businesses, artisans, and service providers to thrive, promoting local entrepreneurship and economic diversification (Taecharungroj and Prasertsakul, 2023; Felzensztein and Gimmon, 2023; Cho and Kim, 2023; Castanho et al., 2023).

Furthermore, national parks have a broader societal and economic impact by promoting cultural and environmental awareness within communities. Tourism within these parks often includes educational and interpretive programs, enhancing comprehension of the environment, biodiversity, and conservation efforts (Matshusa, 2020). This positive influence on livelihoods is manifested through increased job opportunities and income generation, underscoring the potential benefit of national park development (Agyeman et al., 2019). However, several challenges, such as inadequate infrastructure, limited funding, and policy gaps, persist and hinder the optimal role of national parks as drivers of community livelihood sustainability (Stephenson et al., 2021; Bourgeois et al., 2023; Khuu et al., 2023). Overcoming these challenges necessitates adequate investment and sustainable development initiatives to unlock the full potential of national parks in supporting both conservation efforts and community well-being (Ellwanger et al., 2022; Purwoko et al., 2022). The rapid expansion of tourism can lead to the commercialization of local culture, environmental degradation, and alterations in traditional land use practices (Ma et al., 2021; Baloch et al., 2023). These shifts can threaten the social cohesion of communities and undermine their reliance on traditional livelihood activities. For example, heightened demand for land and resources due to tourism can trigger disputes over land tenure and access, potentially resulting in the displacement of local residents and disruption of their way of life (Zielinski et al., 2020; Cai et al., 2023; Leal Filho et al., 2021).

Consequently, limitations imposed on resource extraction endeavors, such as logging or mining, can have adverse effects on industries that were previously reliant on these activities for employment and income, ultimately resulting in job cuts and a decline in the overall economic prosperity of the community (Mayer, 2022; Lobao et al., 2021). Therefore, the successful implementation of alternative livelihood programs requires acquiring new skills, accessing markets, and establishing infrastructure. In specific circumstances, communities may lack the necessary capacity and resources to effectively engage in these new livelihood activities (Snyman and Bricker, 2021; Newsome et al., 2012). Additionally, most emphasizes has been place on the need to promote a responsible tourism practices that alleviate potential disruptions in livelihoods, preserve ecological integrity, and mitigate conflicts related to natural resource utilization Viñals et al., (2023) and Richardson (2021). However, the effectiveness of alternative livelihood programs is contingent upon the complex interaction of socio-economic and cultural factors (Manda and Mukanda, 2023; Hewitson and Sullivan, 2021; Ndonye, 2022). In numerous communities, deeply ingrained traditional practices and perceptions of resource use, resistant to change, play a significant role in preventing the overexploitation of natural resources (Mekonen, 2020; Ariomet al., 2022).

The establishment of national parks in Nigeria has played a crucial role in safeguarding and conserving the country's diverse and valuable biodiversity. These parks act as vital habitats for a wide variety of plant and animal species, including those that are endangered and exclusive to these areas (Tang and Adesina, 2022). Additionally, these natural sanctuaries draw in both local and international tourists, thereby making substantial contributions to the economies of the regions in which they are located. This contribution is evident through visitor expenditures, the creation of job opportunities, and the enhancement of tourism-related infrastructure within the rural communities surrounding these parks (Ofori et al., 2023; Buhalis et al., 2023). Specifically in Cross River State, the establishment of national parks has yielded significant economic benefits for both the indigenous local communities and the state as a whole.

These parks have become focal points for nature-based tourism, attracting a diverse range of visitors, both domestic and international, seeking to immerse themselves in the natural marvels of the region (Barbosa et al., 2022). Furthermore, the sustainable utilization of forest resources, encompassing non-timber forest products and ventures associated with ecotourism provides viable alternative livelihood avenues for the local population (Lobry de Bruyn et al., 2022). Significantly, the matter of national park development and its repercussions has been thoroughly explored, encompassing both a global and local perspective (Matiku et al., 2021; Horigue et al., 2023; Devkota et al., 2023). Conversely, other studies, exemplified have delved into the potential outcomes of national park development concerning biodiversity loss, while others, have emphasized the broader environmental impacts of such development within a regional framework (Zawilińska et al., 2021; Mercado et al., 2023; Harker et al., 2021).

Turning our attention to the specific case of Cross River State, several studies have shed light on the positive effects of national park development on the host communities (Amalu et al., 2020; Mafiana et al., 2022; Sharifian et al., 2022). Unfortunately, despite the presence of the national parks within their local domains, certain communities that rely entirely on the region's abundant natural ecosystem for their livelihoods still struggle with poverty (Ma et al., 2023; Ibrahim et al., 2023). Moreover, although some studies have examined the socio-economic influence of the Cross River National Park on specific host communities, a comprehensive investigation encompassing all communities residing within the park's boundaries, whose livelihoods have been impacted by its establishment, is still lacking (Okosodo and Ogidi, 2023; Harilal et al., 2021; Pamungkas and Jones, 2021). This research aims to delve into additional communities situated within the confines of the Cross River National Park, who similarly depend on its ecosystem for their livelihood sustenance. Through this study, the objective is to identify specific communities within the National Park area and discern their unique requirements. The key areas of focus encompass the primary occupations prevalent among the host communities in the study region, the secondary occupations practiced by these communities, the necessary developmental initiatives needed for these localities, the effectiveness of current development programs within support zone communities, the tangible benefits communities derive from the Cross River National Park, and the challenges encountered in the execution of development programs.

However, this study will facilitate stakeholders in assessing and pinpointing alternative sustainable livelihood options tailored to the distinct circumstances of these communities. Additionally, it will assist policymakers in identifying particular communities that require special attention, considering their historical limited access to the complete benefits of the national park ecosystem—an essential source of their livelihoods. Moreover, this research aims to enhance community engagement in decision-making processes concerning the challenges linked to the development of the Cross River State National Park within the study region. By shedding light on these aspects, the study is expected to contribute to a more inclusive and well-informed approach to park management, ensuring the well-being of both the local communities and the ecological integrity of the park.

MATERIALS AND METHODS

The Cross River National Park is situated within the South-South geopolitical zone of Nigeria, sharing a border with the Republic of Cameroon. Geographically, it occupies the region between longitudes 5°05' and 6°20'N and latitudes 8°15' and 9°30'E. Encompassing a total expanse of 4000km², the park comprises two distinct geographical divisions: the Okwangwo Division located in the central senatorial area of the state, and the Oban Division situated in the southern senatorial region. For the purpose of this research, the investigation will be centered on the Oban division of the Cross River National Park. The Oban Division spans the latitude of 8°00'E (S0 25' 0N N 80 35' O" E) within the Akamkpa and Etung Local Government Areas of Cross River State. Encompassing an area of 3000km², this division shares a contiguous boundary with the Kurop National Park in the Republic of Cameroon. The local economy of the support zone communities hinges on the exploitation and utilization of forest resources. Farming, hunting, and gathering, which includes the collection of both forest and non-timber forest products (NTFPs), constitute the primary occupations of the inhabitants. Crops cultivated in the region include cocoa, oil palm, cassava, banana, and plantain. Hunting activities persist throughout the year, with a traditional division of labor along gender lines. Men engage in tasks such as forest clearing, tree felling, and the management of perennial tree crops. Meanwhile, women oversee other crops like cocoyam and cassava, manage water fetching, and share in the collection of fuel wood.

Method of data collection

The research was carried out within the confines of the Oban division, encompassing a total of thirty villages. From this division, a total of four communities that were close to the National Park enclave were chosen for the study through a random sampling technique process. These selected communities are as follows: Oban, Ubung, Nsan, and Osomba. The rationale behind employing a random sampling technique in the selection of these four communities was to ensure an equitable opportunity for each community to be included in the study. The primary data were collected for the study. Interview and Focus Group discussion was conducted during reconnaissance survey in the various communities for three weeks with the aid of a check-list to evaluate the situation on ground. The Focus Group discussion was conducted with community elders, youth leaders and women leaders who depend solely on the National Park forest ecosystem for livelihood sustenance. Additionally, oral interviews were also conducted with staff of the national park, to gain insights in to the developmental initiatives pursued by park management. All the information obtained from community members and staff of the national park during reconnaissance survey was used for questionnaire design and preparation.

A structured questionnaire was distributed among selected participants within the four communities, maintaining a proportional representation. This serve as the core primary data collection method used for this study. The determination of the sample size followed Yamane's statistical formula, considering the population of the four support zone communities within the study area. This approach ensures a balanced and comprehensive representation for the research endeavor. The Tayo Yamane (1973) was used to determine the sample size and is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = the sample; N = the population of the study; e = Acceptance sampling error at 95% confidence level, e = 0.005;

$$n = \frac{104,959}{1 + 104,959 (0.05)^2} \quad 1 = \frac{104,959}{1 + 104,959 (0.0025)} = \frac{104,959}{263} \quad n = 399$$

A formula adopted by Kathuri and Pals (1993) was used to determine the sample size for each Unit/Department as follows:

$$n_n = \frac{(N_n)}{N} \times n$$

Where, n_n = The sample size of each unit; N_n = Population of the unit; N = Total population; n = Total sample size;

Oban	=	$\frac{46515 \times 399}{104595 \times 1}$	=	$\frac{18559485}{104959}$	=	176
Obung	=	$\frac{24,883 \times 399}{104595 \times 1}$	=	$\frac{9928317}{104959}$	=	95
Nsan	=	$\frac{23603 \times 399}{104595 \times 1}$	=	$\frac{9412597}{104959}$	=	90
Osomba	=	$\frac{9958 \times 399}{104595 \times 1}$	=	$\frac{3973242}{104959}$	=	<u>38</u>
Total	=	399				

Table 1. The distribution of the population in the study area (Source: Field survey, 2022)

S/N	Communities	Base population	Projected to 2020	Sample size
1.	Oban	7,817	46,515.2	176
2.	Ubung	972	24,883.2	95
3.	Nsan	922	23,603.2	90
4.	Osomba	389	9,958	38
	Total	4,100	104,959	399

Two hypotheses were developed and subjected to testing using the Pearson Product Moment Correlation Coefficient. The first hypothesis postulates that there exists no significant relationship between the secondary occupation and the benefits derived from the development of the National Park within the support zone communities. The second hypothesis posits that there exists no significant relationship between the challenges associated with the development of the national park and the benefits derived from the establishment of the national park in the support zone communities.

RESULTS AND DISCUSSION

Socio-demographic Characteristics of the Study Area Communities

The socio-demographic profile of the communities within the study area shows that majority of the respondents were male, comprising 66.2 percent of the sample, while females accounted for 33.8 percent. The data further reveals that the highest percentage of respondents, constituting 28.8 percent, fell within the age range of 39 to 49 years. Additionally, 26.6 percent of the sampled participants also fell within this age group. In terms of educational attainment, it was discovered that 25.6 percent and 23.3 percent of the respondents possessed senior school education and junior school education, respectively. Respondents with tertiary education constituted 14.3 percent of the sample, whereas those with primary education accounted for 17 percent. Analyzing occupational distribution, it becomes evident that 28.32 percent and 22.30 percent of the respondents identified as farmers and traders, respectively, making these the predominant occupations. Fishing emerged as the third most common occupation, with a representation of 18.30 percent. The study also observed that 14.04 percent were artisans, while a smaller portion, specifically 10.02 percent, held formal employment positions (Table 1).

Table 1. Socio-demographic characteristics of communities in the Cross River National Park (Source: Field survey, 2022)

Item	Socio-demographic characteristics	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
Gender	Male	105	23	65	71	264	66.2
	Female	71	15	30	19	135	33.8
	Total	176	38	95	90	399	100
Age	18-29 years	29	10	28	23	90	22.6
	30-39 years	35	12	38	30	115	28.8
	40-49 years	43	9	17	22	91	22.8
	50-59 years	32	3	5	11	51	12.8
	Above 59 years	37	4	7	4	52	13.0
	Total	176	38	95	90	399	100
Education	No formal Education	23	5	12	10	50	12.5
	Primary Education	31	6	14	17	68	17.0
	Junior Sec. School	40	9	23	21	93	23.3
	Senior Sec. School	47	12	26	23	102	25.6
	Tertiary Education	23	4	16	14	57	14.3
	Others(Specify)	12	2	10	5	29	7.3
Total	176	38	95	90	399	100	
Livelihood activities	Farming	47	11	24	33	115	28.82
	Fishing	32	7	21	13	73	18.20
	Trading	41	10	19	19	89	22.30
	Formal employment	20	3	12	5	40	10.03
	Artisan	23	5	14	14	56	14.04
	Others(Specify)	13	2	5	6	26	6.61
Total	176	38	95	90	399	100	

Primary Occupations of the Host Communities

The predominant primary occupations within the host communities in the study area indicate that farming and hunting constitute the most prevalent occupations, accounting for 24.81 percent and 19.70 percent of the sampled respondents, respectively. These are followed by timber and non-timber forest product (NTFP) exploitation, representing 11.80 percent of respondents. Notably, the collected data further illustrates that 11.52 percent and 8.02 percent of community members engage in fishing and petty trading as their primary means of sustenance in the area. Additionally, 7.80 percent and 5.51 percent of the respondents are involved in craftwork, mining, and quarrying as their primary occupations within the study locale. Moreover, the acquired data underscores that a smaller segment of the population, comprising 5.30 percent and 4.01 percent, are engaged in livestock rearing and hairdressing as their primary sources of income. Furthermore, a minimal proportion, specifically 1.50 percent, of the sampled respondents pursues other forms of primary occupation within the study area (Table 2).

Table 2. Primary occupation of the host communities in the study area (Source: Field survey, 2023)

S/N	Alternative source of livelihood	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Hunting	36	6	17	20	79	19.80
2.	Timber and NTFP exploitation	25	5	8	9	47	11.80
3.	Petty Trading	11	2	12	7	32	8.02
4.	Livestock	9	2	4	6	21	5.30
5.	Farming	37	6	27	29	99	24.81
6.	Fishing	20	5	11	10	46	11.52
7.	Craftwork	15	5	9	2	31	7.80
8.	Mining and quarrying	12	4	2	3	22	5.51
9.	Hairdressing	9	2	2	3	16	4.01
10.	Others (specify)	2	1	2	1	6	1.50
	Total	176	38	95	90	399	100

Secondary occupation of the host communities in the study area

The diverse range of secondary occupations pursued by the communities in the study area reveals that business/trading, artisan, tailoring, hairdressing, and related activities emerged as the principal secondary pursuits within the study locale. Again, it was observed that 40 percent and 22.1 percent of respondents within the communities identify as service workers or laborers, with the majority of those sampled indicating involvement in livestock rearing as their secondary occupation. More so, business/trading was ranked as the next most common secondary occupation, representing 21.8 percent of respondents.

Furthermore, hairdressing, artisan, and tailoring encompassed the secondary occupational choices of the communities, accounting for 11.8 percent, 11.3 percent, and 9.8 percent, respectively. Additionally, 5.5 percent and 4 percent of respondents acknowledged engaging in secondary occupations within private companies and as civil servants, respectively, within the study area. However, a smaller portion, constituting 3.7 percent, reported pursuing a secondary occupation in politics, while other miscellaneous occupations accounted for 2.5 percent of the responses within the study region. The aforementioned table collectively outlines the various secondary occupations embraced by the communities in response to the establishment of the Cross River National Park (Table 3).

Table 3. Secondary occupation of the support zone communities in the study area (Source: Field survey, 2022)

S/N	Secondary occupation	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Business/Trading	37	5	28	17	87	21.8
2.	Artisan	22	5	11	7	45	11.3
3.	Tailoring	18	4	9	8	39	9.8
4.	Hair dressing	20	5	12	10	47	11.8
5.	Livestock rearing	29	6	18	35	88	22.1
6.	Private Company Employment	12	3	4	3	22	5.5
7.	Student	15	5	6	4	30	7.5
8.	Civil Servant	11	2	2	1	16	4.0
9.	Politician	9	1	3	2	15	3.7
10.	Others (Specify)	3	2	2	3	10	2.5
	Total	176	38	95	90	399	100

Likewise, the findings corresponding to hypothesis 4, positing that no significant relationship exists between secondary occupations and the benefits accrued by the support zone communities from the development of the Cross River National Park, are detailed in Table 4. A closer examination of the outcomes presented in table 6 indicates the presence of a negative correlation value ($R=0.178$; $P>0.05$) at a significant level. This signifies a detrimental association between secondary occupations and the benefits reaped by the support zone communities within the study area. Consequently, the outcome leads to the acceptance of the null hypothesis and the subsequent rejection of the alternative hypothesis.

Table 4. Pearson Product Moment Result correlating Secondary occupation and communities benefits from Cross River National Park (Source: Output Research from SPSS 22.0) Note: ns = not significant ($P>0.05$)

Parameter	N	R	p-value
Secondary Occupation	10		
		0.178 ^{ns}	0.628
Benefit from park	10		

Development programmes needed by the communities

The imperative development programs essential for the communities within the study area shows that 21.8 percent, 17.5 percent, and 12.8 percent of respondents from various communities concur on the significance of skill acquisition, infrastructural advancement, and rural transportation programs as crucial elements required bolstering the well-being of these communities within the study region. It was also observed that road construction and financial supports are deemed essential

by the communities, garnering respective values of 11.78 percent and 11 percent. However, the data also indicates that health facilities/services, employment opportunities, and educational provisions are identified by 8.5 percent, 7 percent, and 5.3 percent of respondents as vital developmental programs necessary to uplift the communities in the study area (Table 5).

Table 5. Development programmes needed by communities in the study area (Source: Field survey, 2023)

S/N	Most needed support	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Financial assistance	16	3	6	19	44	11.0
2.	Infrastructural development	28	9	15	18	70	17.5
3.	Rural transformation programme	25	5	14	7	51	12.8
4.	Health facility/ service	14	3	7	10	34	8.5
5.	Road construction	24	5	13	5	47	11.8
6.	Education	10	1	7	3	21	5.3
7.	Employment	13	3	6	6	28	7.0
8.	Skill acquisition	37	7	23	20	87	21.8
9.	Others (Specify)	9	2	4	2	17	4.3
	Total	176	38	95	90	399	100

Effectiveness of development programmes in support zone communities

The respondents' evaluation of the development programs within the communities reveals that several programmes were provided by the National park management. Notably, 62.6 percent of respondents acknowledge that the development programs within the communities lack effectiveness, while a lesser proportion of 17.3 percent concur that these programs have proven effective. Furthermore, 6.8 percent of respondents express that the development programs are highly effective, yet 13.3 percent remain uncertain regarding the efficacy of the development initiatives undertaken by the Cross River National Park within the study area. Based on the insights gleaned from the data illustrated in Table 6, it becomes evident that the development programs implemented by the Cross River National Park within the communities of the study area have, on the whole, yielded suboptimal results in terms of their impact and effectiveness (Table 6).

Table 6. Effectiveness of development programmes to host communities in the study area. (Source: Field survey, 2023)

S/N	Effectiveness of development programme	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Very Effective	16	2	4	5	27	6.8
2.	Effective	23	26	21	19	69	17.3
3.	Ineffective	108	26	59	57	250	62.6
4.	Unsure	29	4	11	9	53	13.3
	Total	176	38	95	90	399	100

Communities benefits from Cross River National Park

The advantages extended to the communities through the Cross River National Park indicate that the provision of agricultural products/seedlings and the establishment of rural electrification, constituting notable contributions with respective values of 23.06 percent and 17.29 percent. Furthermore, 14.29 percent and 13.28 percent of respondents recognize the government's role in furnishing boreholes and facilitating road construction, which are recognized as part of the government's obligations to the communities within the study area. The benefits stemming from the Cross River National Park also encompass financial aid, health facilities/services, and employment opportunities, as endorsed by 7.52 percent, 7.77 percent, and 6.77 percent of respondents hailing from these communities. In contrast, education surfaces as the least prevalent benefit, as underscored in Table 7, with a value of 5.51 percent. In summation, the data effectively underscores the multifaceted benefits extended by the government through the Cross River National Park, playing a pivotal role in enhancing the overall quality of life within the study area's communities (Table 7).

Table 7. Communities benefits from Cross River National Park (Source: Field survey, 2023)

S/N	Communities Benefits	Oban Frequency	Osombo Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Financial assistance	15	2	7	6	30	7.52
2.	Provision of rural electricity	29	7	16	17	69	17.29
3.	Provision of bore holes	24	5	15	13	57	14.29
4.	Health facility /services	14	3	6	8	31	7.77
5.	Road construction	22	6	13	12	53	13.28
6.	Education	12	1	5	4	22	5.51
7.	Employment	15	4	5	3	27	6.77
8.	Agricultural products/seedlings	35	9	22	23	89	22.31
9.	Increase in visitors' arrivals	9	1	3	3	16	4.01
10.	Others (specify)	1	0	3	1	5	1.25
	Total	176	38	95	90	399	100

Challenges of implementing development programmes

The obstacles encountered in the execution of development programs within the study area, encompass a range of complexities including financial constraints, funds misappropriation, and a lack of cooperation from the host communities. Notably, it was observed that a significant hindrance to effective development program implementation lies in the absence of incentives for the communities, coupled with instances of funds misappropriation, comprising major challenges with values of 22.1 percent and 21.3 percent, respectively. In addition, improper coordination of programs poses a challenge, accounting for 13 percent of the responses within the study area.

Furthermore, Table 8 highlights that 12.8 percent, 9.7 percent, and 7.7 percent of respondents acknowledge poor transportation, a lack of cooperation from the host communities, and inadequate program coordination as additional challenges affecting the successful implementation of development initiatives within the study area. Moreover, a smaller proportion of 5.3 percent and 4.8 percent of respondents concur that limited community commitment and insufficient funding also present challenges to the execution of development programs within the study area (Table 8).

Table 8. Challenges of implementing development programmes in the area (Source: Field survey, 2023)

S/N	Challenges of implementing development programme	Oban Frequency	Osombo Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Lack of funds	10	3	2	4	19	4.8
2.	Misappropriation of fund	39	8	20	18	85	21.3
3.	Lack of cooperation from host communities	19	3	5	12	39	9.7
4.	Improper programme coordination	20	5	14	13	52	13.0
5.	Insecurity	22	4	13	12	51	12.8
6.	Poor transportation	15	2	10	4	31	7.7
7.	Poor commitment by communities	11	3	5	2	21	5.3
8.	Lack of incentives to communities	33	9	24	22	88	22.1
9.	Others (specify)	7	1	2	3	13	3.3
	Total	176	38	95	90	399	100

Based on the outcomes derived from the hypothesis positing that no substantial relationship exists between the challenges linked to national park development and the benefits derived from the establishment of the park within support zone communities, as presented in Table 9, a discernible pattern emerges.

The analysis showcases that the development arising from the inception of the Cross River National Park demonstrates a positive correlation with both challenges and benefits observed within the park, a phenomenon illuminated by the statistical examination ($R=0.886$; $p < 0.001$) elucidated in Table 9. This conveys that challenges and benefits stemming from park development share a coherent trajectory and exhibit a linear relationship between the two variables under investigation. As a result, the null hypothesis is invalidated in favor of the alternative hypothesis, leading to the conclusion that a significant relationship indeed exists between the challenges originating from the national park and the benefits associated with the park's establishment within the support communities.

Table 9: Pearson Product Moment Results correlating benefits derived from the park development and challenges from Cross River National Park (Source: Output Research from SPSS 22.0)

Parameter	N	R	p-value
Benefits	9		
		0.886**	0.0001
Challenges	9		

Note: N= No of observations; ** = significant of 1% level; R=Pearson Product Moment Correlation

Discussion of findings

The establishment of the Cross River State National Park carries significant socio-economic implications for the communities residing within its boundaries, whose livelihoods are intricately intertwined with the park's ecosystem. Research findings highlight that the primary occupations of these host communities have traditionally revolved around activities such as hunting and fishing. This aligns with the empirical studies which similarly found that inhabitants of protected areas often engage in farming, hunting, and lumbering as their primary means of subsistence conducted by (Dawson et al, 2021; Dayer et al., 2020). This notion is further supported by the analysis performed, who examined the occupational profiles of communities within the national park enclave (Singh et al., 2022). Furthermore, the research demonstrates that the establishment of the national park has introduced various alternative avenues for sustaining livelihoods, including skill acquisition, artisanal endeavors, business, and trade. This concept resonates with the works of scholars, who advocate for diversifying livelihood options to mitigate excessive reliance on the park's resources (Tran et al., 2022; Dick et al., 2022). They propose alternative activities like education provision, livestock rearing, and handicraft production as means to alleviate pressure on the national ecosystem. This perspective is further reinforced, who argue that offering local incentives to rural communities within the park's confines can help minimize conflicts (Thomsen et al., 2023; Smith et al., 2021). Additionally, the research findings underscore the importance of essential infrastructure, such as roads, electricity, healthcare facilities, and other services, in ensuring the sustainability of the national park (Christawan et al.,

2023). Scholars including corroborate this viewpoint, emphasizing the necessity of basic social amenities and programs to support community livelihoods, particularly those residing within national park ecosystems (Nsiah, 2020; Pauleit et al., 2021; McGinlay et al., 2023). Moreover, further emphasizes that the strain on the park's ecosystem can be alleviated by introducing alternative livelihood opportunities for communities within its bounds, echoing the empirical discoveries of this research (Naah et al., 2020). Nevertheless, the development of the Cross River State National Park is not without its challenges. Issues such as inadequate transportation networks, lack of cooperation from host communities, and financial mismanagement have been observed. This echoes the observations and is affirmed by the insights, who all concur that difficulties tend to arise in areas where national parks are situated (Mekonen, 2020; Manda and Mukanda, 2023) and (Rule et al., 2022; Armitage et al., 2020). Furthermore, an empirical investigation into the socio-economic implications of national park development, highlight the repercussions of such developments, including fund misappropriation, community hostility, and limited accessibility to communities within the national park ecosystem (Msilu, 2021). Remarkably, these viewpoints closely parallel the challenges delineated in this study regarding the development of the Cross River State National Park.

CONCLUSION

Upon closer examination of the results obtained from the statistical analyses of the specified hypotheses, it becomes evident that there exists an adverse connection between secondary occupations and the advantages accrued by the support zone communities located within the study area. This outcome subsequently leads to the acceptance of the null hypothesis while concurrently rejecting the alternative hypothesis. Consequently, the findings derived from the statistical analysis of the second hypothesis reveal a favorable correlation between the challenges faced by the communities residing within the confines of the national park enclave and the benefits derived from the same. This analysis conveys that the challenges and benefits arising from the development of the park follow a coherent trajectory, showcasing a linear relationship between the two variables under investigation. Consequently, the null hypothesis is invalidated in favor of the alternative hypothesis, thereby concluding that a meaningful relationship indeed exists between the challenges arising from the national park and the benefits associated with the establishment of the park within the supportive communities.

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