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# The Relationship Between Folklore and Conservation of Threatened Bird Species Among Ethnic Groups in Cross River State

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**Keywords**

Folklore, conservation, threatened bird species, ethnic groups

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**Abstract**

This study examined the relationship between folklore and conservation of threatened bird species among ethnic groups in Cross River State, Nigeria. To achieve the purpose of this study, a null hypothesis was generated to direct the study. A literature review was done according to the variables under study. A Correlational research design was adopted for the study. A sample of 731 respondents was randomly selected for the study. The selection was done through multistage sampling procedures. The questionnaire was the main instrument used for data collection. Descriptive statistics and Regression analysis were the statistical analysis techniques adopted to test the hypothesis under study. This statistical tool was used because of the nature of the variables involved in the study. The hypothesis was subjected to testing at .05 level of significance with relative degrees of freedom. The results of the analysis revealed that folklore significantly predicts the conservation of threatened bird species among ethnic groups in the study area. The study concluded that folklore significantly predicts conservation of threatened bird species among ethnic groups in Cross River State. Based on the findings of the study, it was recommended among others that folklore on bird species should be integrated into modern conservation programmes, ensuring community participation. Curriculum developers also should incorporate local Folklore on birds and other species in design curriculum for environmental education.

## INTRODUCTION

Cross River State is a country reported to have a high diversity of fauna and flora, as well as cultural, ethnic, religious, and linguistic diversity, with an increasing population in high demand for biodiversity products. This high demand for fauna and flora products for protein and other uses has been observed to be on the increase daily, which has resulted in the design of different conservation strategies and the establishment of conservation sites by communities, states, and the federal government to ensure sustainable preservation and reduce the loss of the remaining biodiversity. These strategies included the designation of some areas as Key Biodiversity Areas (KBAs), Important Bird Areas (IBAs), Ramsar sites and Protected Areas (PAs), aimed at reducing biodiversity loss, habitat loss and encouraging species recovery. The conservation of natural resources within Indigenous communities across the world is gaining momentum and requires the essential understanding of host Indigenous people and their surrounding environment, societal customs, religion, of biodiversity, their folklore, practices and other procedures that might help in the preservation and conservation of biodiversity in African countries (Gosler, 2017, Manyam, & Japheth, 2022).

Therefore, the effectiveness of biodiversity conservation in Nigeria and other parts of the world depends largely on how local people are involved in the conservation programme, how they interact with the natural environment, their engagement with the wildlife, and their level of environmental literacy (Pam et al., 2018), Therefore, understanding and incorporating Indigenous people's knowledge of folklore on ecology and the significance of folklore on biodiversity (birds) to their daily living is also observed to be an effective guide to conservation education as well as management and conservation of biodiversity in Nigeria. Hence, the necessity of understanding and identifying the societal Indigenous people's , folklore, on biodiversity is observed to play a critical role in the protection and conservation of biodiversity, given the increasing depletion in their population and habitat, most especially those of global conservation concern, which include threatened avian species on the International Union for the Conservation of Nature (IUCN).

Studies have shown that the loss of cultural diversity, which generally includes folklore (stories, proverbs parables), language and traditional ecological knowledge among indigenous people of over 250 ethnic groups in Nigeria, which is intricately linked to the loss of some biological diversity of an area. Different ethnic groups have different ways of living and interacting with bird species, which is usually reflected in their understanding and interpretation of the natural environment due to accumulated knowledge from many years of residence and interacting with different bird species in their natural environment. Similarly, the interlink and loss of species or the degradation of an ecosystem can lead to the destruction of a way of living and to a greater extent the collapse of ecosystems and civilisation (Omotoriogun, 2019)

Bird species are major indicators of environmental conditions. Therefore, understanding the interactions between humans and birds, their activities within habitats, as well as the cultural significance and ecosystem functions of birds to indigenous people. Thus, the need to understand the human-bird relationship is critical, as conservation efforts without the full knowledge of the diverse folklore, what folklore Indigenous people hold on birds, that may be detrimental to the success of modern conservation efforts.

The conservation of threatened bird species and their habitats extends refuge to other species. Therefore, the conservation approach of avifauna will have a strong impact on the effective conservation of other biological diversity in general. Birds have been an integral component of the environment. However, there is limited public understanding of this bird's relationship with local indigenous people in the study area; hence, empirical understanding of their interactions is necessary for their sustainable conservation and interaction amongst ethnic groups in the study area. Consequently, some effective ways to sustain this relationship may be through local engagement and integration of Indigenous people, communities, academic institutions, and government and non-government institutions in the development of ethno-ornithological programmes. This is believed to enhance indigenous people's understanding of the ecological value of birds, help mitigate non-sustainable human threats to birds and motivate environmentally friendly consciousness among rural dwellers (Omotoriogun, 2019).

Bird species categorised as endangered by the International Union for the Conservation of Nature (IUCN) RedList in Cross River State have been observed to continue to face different forms of threats, namely: habitat loss, degradation, fragmentation, logging, hunting, bush burning, wildlife trade, and overgrazing. Also other ethno-practices faced by threatened bird species include the use of feathers, wings, head, and legs for rituals, chief Tency coronation, burial right, and festival have been reported contribute to the decline in the population of this species (Hooded Vulture *Necrosyrtes monachus* (Critically Endangered **CR**), White-backed Vulture *Gyps africanus* (Critically Endangered **CR**), Grey Parrot *Psittacus erithacus* (Endangered **EN**), Yellow Casqued Hornbill *Ceratogymna elata* (Vulnerable **VU**), Bannermans Weaver *Ploceus bannermani, (*Vulnerable **VU),** Green-Breasted Bush-shrike *Malaconotus*

*gladiator* (Vulnerable **VU**) Mount Kupe Bush-shrike *Chlorophoneus kupeensis* (Vulnerable **VU**) White-Throated Mountain-Babbler *Kupeornis gilberti* (Vulnerable **VU**).

Ethno-ornithological variables such as traditional ecological knowledge (TEK), ritual, taboo, folklore, cultural significance and customs have significant contributions to the potential for in-situ natural resource management. These traditions are reported to be threatened by changing cultural norms and practices (including Christianity and Islam), formal education, modernisation and new political dispensations (Sinthumule, 2023). As a result, these have been observed to continue to put pressure on bird species of global conservation concern.

The presence of negative folklore values predicted persecution and anti-conservation attitudes towards amphibians and reptiles. Also, folklore varies socio-demographically, but negative values concerning these animals are widespread in the population, and certain ideas and values of indigenous people can directly influence human attitudes towards herpetofauna and how they can be a serious conservation issue (Ceríaco, 2012). The conscious ideas of the conservation of birds and other species may be observed to be limited to certain species. Just as the deliberate conservation of invertebrates only occurred with a few taxa, as in the case of firebugs (Pyrrhocoris apterus), field crickets (Gryllus campestris) and most butterflies, while others are regarded as basically harmful and where possible, destroyed and regarded as worth eradicating (Ulicsni et al., 2016).

The gap in empirical data on folklore of ethnic groups and indigenous peoples in Cross River State on human-bird interaction has been observed to be an integral part of the survival of indigenous people in Cross River State while interacting with birds. This has also been observed to be one of the major causes of bird population decline. Hence, understanding the relationships between folklore of ethnic groups and birds, especially birds of global conservation concern and their relationship on the conservation of bird species. Therefore, it is critical to obtain empirical data on local folklore and the conservation of threatened bird species in Cross River State to understand the relationships between folklore of indigenous people and conservation of threatened bird species among ethnic groups in Cross River State, Nigeria.

**Statement of the problem**

Nigeria is reported to be diverse in bird species. it is documented that over 920 bird species have been recorded in Nigeria (Tende et al., 2024). Interestingly, half of these species have be reported to occur in Nigeria. These species play critical roles in the environment, acting as major indicators of habitat change and condition, seasonality change (wet and dry) via migration, and migration pattern, or general environmental changes. Bird species play the role of free and cost-effective pollinators, pest and disease control agents, seed dispersers and reafforestation specialists as well as a source of income through bird watching and eco-tourism. Species such as the Critically Endangered Hooded Vulture*,* White-backed Vulture *Gyps africanus* and Pied Crow *Corvus albus,* among other scavengers, also serve as free sanitation officers and cleaners feeding on dead animals and remains of animals in slaughterhouses, crushed insects and other animals by moving cars, hence, get rid of potential vectors and disease breeding grounds.

Despite these important roles played by bird species, there has been a reported increase in their persecution as well as their use for numerous purposes by the diverse ethnic groups in Cross River State. These persecutions range from unsustainable traditional uses as sources of food and protein, exploitation of their parts as adornment, decorative accessories during new yam festivals, persecuted because of belief, among others, Chief Tency coronation, and traditional medicine (Alves et al., 2013) resulting in the decline of the avian population and consequently extinction. Also, trafficking in their parts, habitat loss, degradation, fragmentation, and pollution are other factors observed to be causes of avian (bird) species decline in Cross River State.

With the decline in the population of this species across the globe, government and non-governmental organisations have developed different modern conservation approaches, with some being observed to be effective in the conservation of bird species such as Hooded Vulture, African Grey Parrot, Yellow Casqued Hornbill, Green-Breasted Bushshrike, Mount Kupe Bushshrike, White-Throated Mountain-Babbler, Bannerman's Weaver, amongst others. This approach or strategy includes the designation of some sites as bird sanctuaries, nature reserves, and national parks which are also known as important bird and key biodiversity areas, Ramsar sites, world heritage sites, botanical gardens, provision of socioeconomic activities in the form of alternative livelihoods, breeding programs, the establishment of zoos and the use of conservation education to create the needed awareness on globally threatened bird species. Interestingly, other possible remedies may include concerted efforts towards the implementation and ratification of treaties and conventions on biodiversity and educating the populace to forgo cultural practices that are inimical to the conservation of bird species (Bc, 2020)

As a result, in Cross River State, modern birds conservation strategies such as the establishment of bird sanctuaries, community forest reserves, government nature reserves and national parks such as Afi Wildlife/Mountain Sanctuary (AMWS), Cross River National Park (CRNP), Mbe Mountain (MM), Becheve Nature Reserve (BNR), Ekuri Forest Reserve (EFR), Iko Esai Community Forest (IECF), among others as well as conservation education, awareness and establishment of citizen projects has been regarded as modern measures or strategies put in place to conserve the remain birds species and this have yielded some positive result but with increasing observed pressure on birds' species by indigenous people in rural communities and ethnic groups in Cross River State.

It has also been observed that there are over 10 major ethnic groups and languages in Cross River State, namely: Efik, Ejagham, Ekio, Bekwara, Bette, Yala, Ukelle, Mbembe, Bakor, Nkim, Nkum, and Ekajuk. Other ethnic groups and languages include Qua and Yakurr. These ethnic groups are diverse in folklore which contribute to the conservation of some bird species and the decline in the population of others within rural communities. While some ethnic groups' folklore, has positive effects on some bird species and promote their conservation, others' folklore have negative effects on bird species and contribute to the decline in their population. Therefore, providing answers to the following questions as to what relationship exists between folklore and the conservation of threatened bird species among ethnic groups becomes paramount.

**Purpose of the study**

The main purpose of this study was to determine the relationship between folklore and conservation of threatened bird species among ethnic groups in Cross River State. Specifically, the research aims to:

1. determine what relationship exists between folklore and the conservation of threatened bird species among ethnic groups

**Research Questions**

To achieve the specific objectives of this study, the following research questions were formulated to guide the study:

1. To what extent does folklore predict the conservation of threatened bird species among ethnic groups in Cross River State?

**Statement of hypotheses**

The following hypotheses were formulated to guide the study:

1. Folklore do not significantly predict the conservation of threatened bird species among ethnic groups in Cross River State

**LITERATURE REVIEW**

**Folklore and conservation of bird species**

Human interaction with their environment is to some extent believed to be linked with cultural practices, impacting the fauna and flora within the environment positively or negatively. Folklore can directly influence the way we interact with animals, as well as determine whether these animals are persecuted or protected by humans (Landim et al., 2024). Folklore, or bird stories, provides valuable insight into indigenous people's traditional knowledge about birds and their environment and plays a crucial role in preserving nature as well as cultural heritage. Birds, like other biodiversity, are featured prominently in folktales, connecting natural observations with religious symbolism and human experience and the image of birds in folktales connects the observation of nature, throughout the year and religious holidays, with their consequences for Man (Tańczuk, 2021). Globally, the crucial role of folklore and cultural heritage in the conservation of birds among ethnic groups, local people, is observed to be important in not just conserving birds and other biodiversity, as evidenced by research.

Furthermore, Birds feature prominently in the arts and folklore of practically every culture. Consequently, paying attention to birds as signs enhances human cognitive processes and ecological awareness, contributing to broader worldviews. Hopper et al., (2019) findings indicate that in the UK, incorporating avian folklore and cultural heritage into conservation education programs can inspire a lasting conservation ethos among schoolchildren. Similarly, in Nigeria, indigenous people's folklore and traditional religious beliefs contribute to the protection of the Cattle Egret, Sclater's monkey, through social taboos (Barshep, 2017). In Indonesia, rural communities demonstrate extensive knowledge of bird species, their roles, and traditional classification systems (Iskandar et al., 2021). While the Green Pigeon is used as a metaphor in folk literature in Malays in the Pelalawan Area (Elfis et al., 2020).

In a study by Gupta & Kumar, (2024) on the cultural significance of commensal avian scavenger species—vultures, kites, and crows—and their exploitation of anthropogenic resources and sentiments within Delhi's urban landscapes. The study investigated the intrinsic values attributed to these birds by people, which are indicative of complex, rapidly urbanising social-ecological systems. Semi-structured interviews revealed folk perceptions intertwined with socio-cultural narratives and traditions, shaped by observations of avian morphology, ecology, and behaviour. Birds' nesting habits, habitats, home ranges, and foraging behaviours affected people's perceptions, while ecosystem services inspired zoomorphism and anthropomorphism via vernacular nomenclature (e.g., chidiya collectively for songbirds, giddha for scavenging raptors). The urbanisation of perceptions in vulture extinction zones revealed shifts in social–ecological relationships with wildlife. Urban transformations, technological advancements, and media exposure potentially reshaped the human–animal interface, with media misinformation affecting personalised ecologies. Therefore, the study revealed how the web of social-technological influences animal-related folk stories. The findings offer insights into preventing the severing of people and nature connections due to urbanisation in technological applications that can integrate scientific knowledge with biocultural narratives and folklore of urban settlers, as well as integrate and promote a new-age eco-literacy.

Likewise, investigating how folklore affects human interaction with animals, Ceríaco, (2012) conducted a study to demonstrate how folklore can affect how people relate with animals and the possible conservation impacts on these animals. The researcher adopted a questionnaire survey distributed to 514 people in the district of Évora, Portugal, to obtain data regarding the hypothesis that the existence of wrong ideas and negative values contributes to the phenomenon of human-associated persecution of these animals. A structural equation model was specified to test the hypothesis about the possible relationships between the presence of perceptions and negative values about amphibians and reptiles, persecution and

anti-conservation attitudes. Sociodemographic variables were also added. The results of the model suggest that the presence of folklore and negative values predicted the persecution and anti-conservation attitudes towards amphibians and reptiles. Also, the existence of folklore varies socio-demographically, but negative values concerning these animals are widespread in the population. They concluded that with the use of structural equation models, the work is a contribution to the study of how certain ideas and values of Indigenous people can directly influence human attitudes towards herpetofauna and how they can be a serious conservation issue. Interestingly, this may be the case with other taxa and ethnic groups and cultures, most especially regarding birds that require investigation.

Mulyanto et al., (2020) undertook a study of the Folk name and lore of birds from the Sundanese of West Java, Indonesia. The study aims were to account for vernacular or folk names, folk classification, and folkloric birds based on the case of the mountain people of Keratasari, West Java, Indonesia. The Qualitative method was adopted for the study with the ethnoornithological approach. The field data were collected by focus group discussion and deep interviews with informants of 12 groups of independent village people of four villages of the Kertasari sub-district. The naming of collected data was by systematic elicitation of names from pictorial representations of birds and organised to facilitate analysis of various aspects of folk taxonomy about the scientific one. Folklore about birds that were collected in natural contexts was also included to indicate the birds' role and their names in symbolic processes that exceed the limits of literal reference. The result showed that 222 bird species were recorded, representing 170 vernacular names. The study concluded that taxonomic and folkloric modes of knowledge in birds play important roles in the lives of Sundanese people, particularly in the study area.

Interestingly, Ivanova et al., (2021) investigated what dimensions of the TEK related to plant diversity (native and introduced) appear in Bulgarian folk songs and what their potential is as transmitters of TEK? The lyrics of 10,113 Bulgarian folk songs were excerpted from major academic collections and a set of unpublished songs. Common plant names and descriptions of plants and landscapes were used to detect botanical affiliations of the denoted plants. The research focused on frequencies of plant representations and their functions associated with cultural, agricultural and food-processing practices. A total of 146 plant taxa from 109 genera were mentioned in 47.3 % of the studied songs. Over 60 % of the most frequently mentioned taxa were archaeophytes, while neophytes were represented by seven taxa, denoting the everyday and spiritual importance of nature. Bulgarian folk songs presented a wide range of nature-related information typically reported for ethnic groups outside Europe. Quantification of TEK preserved in documented poetic folklore and further assessment of the performance of nature-rich folklore would allow the development of additional tools for the evaluation of the cultural significance of species, landscapes and ecosystems, as well as for the integration and development of educational and inspirational materials.

Wyndham & Park, (2023b) surveyed bird signs and importance for ecocultural conservation by highlighting key information networks in people-bird communities and reporting on the kinds of messages contained in 598 examples of locally defined signs from 498 bird taxa from 169 sources and 123 ethnolinguistic groups. Using Peirce's three sign forms: symbolic, iconic, and indexical, they analyse one aspect of human–bird interactions: that of reading bird signs for ecological and social interpretations. Understanding ecological semiotic nuances is important for translating between local, regional, and global science and for respecting autonomous processes of local people, attributing value or a lack thereof to birds and their habitats. Over one-third of the signs in their sample (216; 36%) were specifically described as omens of some kind, commonly of death, illness, or something "bad". Three modes of message delivery account for most of the data: predicting (60%), bringing (15%; including news, rain, and luck), and indicating (15%; including seasonal change, fruit ripening,

and animals). Reading birds to predict weather (especially rain) was common, as was listening to and interpreting birds' alarm calls warning of snakes or predators and knowing that a certain bird indicates the presence of certain other animals and danger, or of a water source. They argue for the amplification of ecocultural conservation (attending to histories of human-nonhuman relationships in place) to channel resources and land control to local and Indigenous managers who are immersed in relevant bird–people information networks. Wyndham recommended that the importance of reduction of uncertainty in local and hyper-local environments, biocultural provocations in which birds fulfil important roles in human society, and informational connectivity and locally defined interspecies ethical relationships as key elements for inclusive and effective modern ecocultural and bird conservation.

This review on folklore reveals the critical role of folklore in preserving and transmitting traditional knowledge across generations. It highlights the significance of species conservation as an essential aspect of Indigenous people's daily understanding of their surroundings, which shape their interaction with bird species in their environment.

## STUDY AREA/RESEARCH METHODOLOGY

Cross River State is located in South-east Nigeria. The state lies between Latitude 05º 045'N and longitude 08º 030'E. It covers a total area of approximately 20,156 km² (7,782sqm²). The state shares an international boundary with the Republic of Cameroon to the East, Benue state to the North, Ebonyi and Abia states to the West and the South, Akwa Ibom and the Atlantic Ocean. This study was conducted in the three educational zones of Cross River State. The 2025 projected population of the state stands at 5, 253,133 at a growth rate of 3.0%, National Population Commission (2025). The climatic conditions and biodiversity of the state differ relatively between the different local governments and locations as one moves from North to South of the state. However, the average temperature range is between 15ºC and 30ºC, with the Obudu Plateau having the lowest record of temperature at 4ºC- 10ºC during wet seasons of the year, with the plateau having some areas rising to an altitude of 1802m above sea level (a.s.l). Annual rainfall is reported to be 3306mm.

The state is known globally as one of the highest biodiversity hotspots with the highest concentration of threatened and endemic fauna and flora, including the critically endangered Cross River Gorilla, Nigeria-Cameroon Chimpanzee, Drill Monkeys, Preuss's Monkey, Mount Kupe Bushrike, Green-breasted Bushshrike, White-throated Babbler, Green-Breasted Bushshrike, Yellow Casquet Hornbill, Bannerman's Weaver, Grey Parrot, Hooded Vulture, White-Bellied Pangolin among others endemic and threatened plant species, butterflies' dragonflies and damselflies, reptiles, and amphibians and a host of migratory birds species reported in the state.

### Methodology

The Correlational survey research design was adopted for this study, which comprises a review of documented research, observations, and discussions. This research design allows the researcher to use structured, semi-structured, and open-ended questionnaires. Survey research design also allows the researcher to use focus group discussions and key informant interviews as instruments for data collection (Dangal, 2021, & Mills, 2024). This survey design also allows the researcher to collect structured data from individuals or groups to gain deeper insight into their thoughts, behaviours, or experiences related to a specific problem, making it a versatile tool in both quantitative and qualitative research (Mills 2024). And draw inferences about the characteristics of the required population from the sample, which is generalised on the population.

Multistage Sampling procedures were adopted to obtain a sample for this study. This included stratified, purposive, simple random, and accidental sampling techniques. Stratified sampling was employed to categorise local governments based on education zones and based on local government within protected and coastal areas in Cross River State. As well as enclave

and buffer zone communities around the protected areas based on ethnic groups and the languages or dialects spoken in the communities. Purposive sampling was adopted to select ethnic groups in each of the selected Local Government areas around protected and coastal areas in Cross River State. Simple random sampling was utilised to select three rural communities from four local governments (Akamkpa, Bakassi, Boki and Obanliku), while two were selected from the Bakassi local government area and ethnic groups, culminating in a total of eleven (11) communities for this study. Additionally, accidental sampling technique was applied to administer the questionnaire titled: Ethno-ornithology and Conservation of Bird Species Questionnaire (EOCBQ) to the indigenous people across the ethnic groups who served as respondents to this research.

This study sampled a total of 731 respondents selected from each of the selected buffer zone communities who were adults and 15 years above and members of the ethnic groups who are residing in the communities and were available and willing to respond to the instrument, from the 11 rural communities selected from the 4 local government areas within the three educational zones in Cross River State. The sample includes village heads, community leaders, traditional knowledge holders, farmers, hunters, traders, public savants, and loggers drawn from a total population comprises of 513,896 adults in the four (4) selected local government areas. The sample size was determine with reference to Conroy (2021) guidelines standard rules of thumb for sam) byize for infinite and finite population and precision in survey research, which established that for larger population, a sample size of approximately 384 provides +_ 5% precision at 95% of confidence for proportion estimates Conroy (2021) by the guidelines and rules of thumb for correlational survey research design. The sample size achieved of 731 exceeded the recommended threshold of 384. The sample size achieved for this study exceeds this threshold, affording greater precision and statistical power for correlation studies and regression analyses.

The instrument designed for this study was a four-point Likert-type questionnaire of Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). semi-structured questionnaire titled: Ethno-ornithology and Conservation of Birds' Questionnaire (EOCBQ). The instrument was designed on a The EOCBQ and was designed in sections. Section A was designed to capture respondents' demographic variables, Section B captured data on the independent variable (folklore 10 items and rituals 10 items), while Section C. captured data on the dependent variable on conservation of threatened birds with 10 items from respondents respectively.

The researcher briefly discussed the purpose of the study with community leaders and respondents to seek their consent and what was expected from respondents in turn. The researcher used one day in each of the selected communities to train the 11 volunteer field assistants in each of the 11 (elven) communities selected, who are indigenous people with good knowledge of the local language and culture of the ethnic group in the study area. Community leaders, youth leaders, and other knowledgeable indigenous people in the selected communities assisted in the identification of fellow respondents to whom the researcher administered the questionnaires.

The researcher then adopted accidental sampling techniques and adopted pictures and sounds from the Merlin Bird ID by Cornell Lab, version 3.10.1, Field Guide to the Birds of Africa Application and printed pictures of the target species were shown to the respondent for identification and to elicit further information from the respondents. in administering the questionnaire to adults from the 11 enclave and buffer zone communities who lived in the selected communities in the selected four (4) local government areas with protected and coastal areas in Cross River State.

The researcher then proceeded to administer the EOCBQ himself with the help of the trained research assistant, who assisted in interpreting the content of the questionnaire to the

respondents with their responses to the items during the interview and assisted in addressing all issues regarding administering the questionnaire arose during the process of data collection .

A coding schedule was developed and all the data collected were coded into Microsoft Excel 365 version, and the total scores for all the items were used as the respondents' scores on that variable. The research question and hypotheses for this study were tested using appropriate statistical tools and SPSS software 27.3.1. The research question was answered using descriptive statistics while the hypothesis was tested at a significance level set at 0.05. Simple Linear Regression analysis was employed to test the hypotheses.

## RESULTS AND DISCUSSION OF FINDINGS

### Presentation of results

The results presentation deals specifically with the research questions and hypotheses in the study, analysed using percentages from the descriptive analysis and results from the linear regression conducted**.**

Research question

To what extent does folklore influence the conservation of threatened bird species among ethnic groups in Cross River State?

The descriptive analysis was adopted to answer the research question. The research question was answered to measure the extent of agreement and disagreement with the extent of folklore of bird species predicts the conservation of threatened bird species. The responses of respondents were further summed up with Strongly Agree and Agree presented as agree, while respondents' responses for Disagree and Strongly Disagree were also summed up and presented as disagree, as presented in Table 1. The results of the analysis presented in Table 1, show that 265 respondents, representing 36.5%, agree that they are aware of proverbs about birds in my community, while 466 respondents, representing 63.7%, disagree that they are not aware of bird proverbs in the community. Similarly, on whether Hooded Vulture proverbs are told in my community, 111 respondents representing 15.2% agree while 620 respondents representing 84.8% disagree. Furthermore, only 232 respondents representing 31.7% agree that they know hooded vulture stories in their community culture, while 499 respondents representing 68.3% disagree. Also, 177 respondents representing 24.2% agree that African Grey Parrots have proverbs told in my community, while 554 respondents representing 55.8% disagree. 329 respondents representing 45.0% said they know of the African Grey Parrot Survey in my community, while 402 respondents representing 55.0% said they don't know African Grey Parrot stories in their community. In the same vein, 286 respondents representing 39.1% agree that proverbs on the Yellow-casqued Hornbill are told in my community, and 445 respondents representing 60.9% disagree. Interestingly, 511 respondents representing 69.9% reported that they are aware of local Yellow Casqued Hornbill stories in my culture, with 220 respondents representing 30.1% disagree.

Interestingly, 67 respondents representing 9.2% said yes, other birds with heroic stories that exist in your community apart from the three mentioned above, while 661 respondents representing 90.4% said no and 3 respondents representing .4% did not respond. also, on birds with heroic stories 9 respondents representing 1.2% said Woodpeckers (Picidae), 26 respondents representing 3.6% said Great Blue Turaco (*Corythaeola cristata*), 8 respondents representing 1.1 said Eagle (Accipitridae), 13 respondents representing 1.8% said Black Casqued Hornbill (*Bycanistes subcylindriccus*), 3 respondents representing .4% said African Grey Parrot (*Psittacus erithacus*), 3 respondents representing .4% said Drongo (Dicruridae), 6 respondents representing .8% said Owls (Strigidae), 1 respondents representing .1 said Naked-

faced Barbet (*Gymnobucco calvus*), 1 respondents representing .1% said Hadada Ibis (*Bostrychia hagedash*) while 662 respondents representing 90.1% had no response.

Also, on whether other birds with proverbs that exist in your community apart from the three mentioned above, 5 respondents representing .7% said no answer, 58 respondents representing 7.9% said YES 668 respondents representing 91.4% said NO. furthermore, on bird with proverbs, 674 respondents representing 92.0% said No Answer, 10 respondents representing 1.4% said Great Blue Turaco, 8 respondents representing 1.1% said Woodpeckers, 1 respondents representing .1% said Owls, 10 respondents representing 1.4 % said Village Weaver (*Ploceus cucullatus*), 2 respondents representing .3% said Black-casqued Hornbill, 2 respondents representing .3% said African Grey Parrots, 19 respondents representing 2.6 said Common Bulbul (*Pycnonotus barbatus*), 1 respondents representing .1% said Vultures (Accipitridae) 3 respondents representing .4% said Kite (Accipitridae and Falconidae) and 1 respondents representing .1 said Drongo.

**TABLE 1**

Summary of descriptive analysis on folklore and conservation of threatened bird species

| S/N | Item | n | Agree (%) | Disagree (%) | Remark |
|---|---|---|---|---|---|
| 1. | I am aware of proverbs about birds in my community | 731 | 265(36.5) | 466(63.7) | Disagree |
| 2. | Hooded Vulture proverbs are told in my community | 731 | 111(15.2) | 620 (84.8) | Disagree |
| 3. | I know Hooded Vulture stories in my community | 731 | 232(31.7) | 499(68.3) | Disagree |
| 4. | African Grey Parrot have proverbs told in my community | 731 | 177(24.2) | 554(55.8) | Disagree |
| 5. | I know of African Grey Parrot stories in my community | 731 | 329(45.0) | 402(55.0) | Disagree |
| 6. | Proverbs on Yellow Casqued Hornbill are told in my community | 731 | 286(39.1) | 445(60.9) | Disagree |
| 7. | I am aware of local Yellow Casqued Hornbill stories in my culture | 731 | 511(69.9) | 220(30.1) | Agree |

Source: researcher field work 2026

Research hypothesis

Folklore does not significantly predict the conservation of threatened bird species among ethnic groups in Cross River State.

The results of the analyses in Table 2 show a calculated f-ratio of 42.236 at a P-value less than .001 ($p<.001$). Since the p-value is also less than .05 the null hypothesis is rejected. This means that folklore significantly predicts the conservation of threatened bird species among ethnic groups in Cross River State. The result further shows a correlation coefficient, measuring the strength of association between the independent and dependent variables ($r$) of .234 and a coefficient of determination (Adjusted $r^2$) of .053. This evidence the extent to which the variation of the dependent variable about its meaning, is explained by the independent

variable. It means that 5.3% of the variation in folklore was as a result of variation in the folklore of the ethnic groups, while the other 94.7% (*1-r*") could be as a result of variables extraneous to the study.

The test of significance using the t-statistic (*t*=6.499) shows significance at a p-value less than .001 (p<001), confirming that folklore significantly predicts conservation of threatened bird species in the study area. The standardised coefficient (Beta) of .234 indicate a positive relationship between folklore and conservation of threatened bird species

**TABLE 2**

Summary of simple linear regression analysis for the relationship between folklore and the conservation of birds

| Sourse of variation | *ss* | *df* | *ms* | *f* | *p-value* |
|---|---|---|---|---|---|
| Regression | 1039.344 | 1 | 1039.344 | 42.236 | <.001 |
| Residual | 17939.157 | 729 | 24.608 | | |
| Total | 18978.501 | 730 | | | |
| Model | B | Standard error | Beta | t | P-value |
| Constant | 20.686 | .638 | | 32.413 | <.001 |
| Folklore | .250 | .038 | .234 | 6.499 | .<.001 |

*significant at .05
*r*= .234
$r^2$= .055

Adjusted $r^2$ = .053

Source: researcher field work 2026

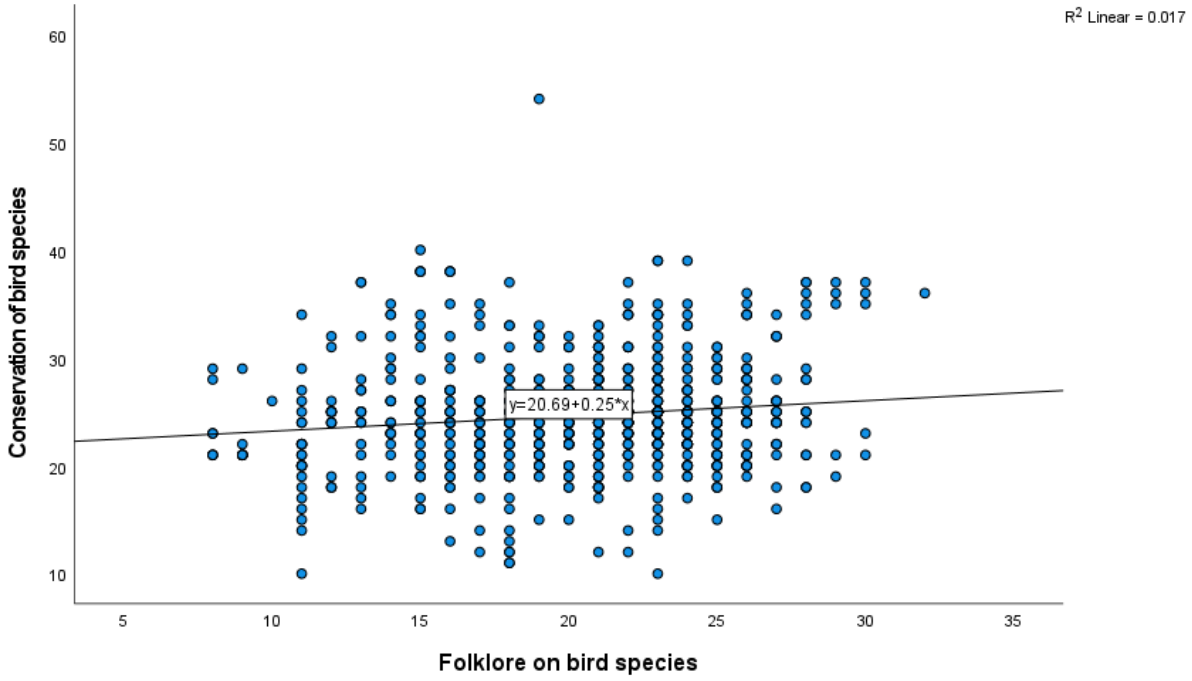


Fig. 1. Scatter plot (simple linear regression graph) showing the relationship between rituals and conservation of threatened bird species in the study area. The solid line shows the simple linear regression trend of the relationship.

The results of the analyses in Table 2 show that folklore significantly predicts the conservation of threatened bird species among ethnic groups in Cross River State. The study indicate a positive relationship between folklore and the conservation of threatened bird species. This finding agrees with Weliange et al., (2015) whose study affirmed that Birds are important in the language, with proverbs, idioms, wise sayings and poems rich in local bird names. The result further show that (i) respondents are not aware of birds' proverbs in their community, (ii) Hooded Vulture proverbs are not told in the community, (iii) respondent don't know Hooded vulture stories are their community (iv) Grey Parrot do not have proverbs told in their community while (v) respondents do not know African Grey Parrot stories in their community (vi) proverbs on Yellow-casqued Hornbill are not told in the study area, (vii) respondents are aware of Yellow-casqued Hornbill stories in their culture among ethnic groups (viii) there are no other birds with heroic stories that exist in your community. (ix) no bird with proverbs that exist in the study area

The result is surprising as respondents are unaware of proverbs and stories on Hooded Vulture, Grey Parrot and Yellow-Casqued Hornbill in the study area. this finding may be may be as a result of the decline in the species population, the lack of written and documentation of traditional names of birds, preverbs and stories in the study areas as reference sources, conscious transfer of bird proverbs by adult to the younger ones from one generation to another as its was observed that birds' proverbs and stories about birds are currently retained by elders in the study area. The findings may also be a result of the common stories told among members of the ethnic groups on how the Yellow-casqued Hornbill buried the parent's corpse on its head, went to the beach to fetch water with its mouth to bath the corpses of its parents, which are shared among the locals across the ethnic groups. These findings were reaffirmed by the findings of Iskandar et al., (2021) whose study also revealed that the local community has profound knowledge of bird species, folk classification, and ecological, socio-cultural, and socio-economic functions. They further indicate that nowadays, these no longer strongly exist. This is so because of the gradual disappearance of local languages and the non-documentation of these proverbs and stories in a digital or manual form.

This is further supported by Sinthumule, (2023). who reported that proverbs were found to be the least addressed component of TEK despite having played a significant role in biodiversity conservation in present-day Africa. The traditions are being threatened by changing cultural norms and practices (including Christianity and Islam), formal education, modernisation and new political dispensations. However, the result indicates that a few species with heroic stories, such as Woodpeckers (Picidae), Great Blue Turaco (*Corythaeola cristata*), Eagle (Accipitridae), Black Casqued Hornbill (*Bycanistes subcylindriccus*), 3 African Grey Parrot (*Psittacus erithacus*), Drongos (Dicruridae), Owls (Strigidae), Naked-faced Barbet (*Gymnobucco calvus*), and Hadada Ibis (*Bostrychia hagedash*).

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

Based on the findings of this study, the following conclusion was reached: that folklore significantly predict the conservation of bird species among ethnic groups in Cross Rivers State Nigeria.

### Recommendation

Based on this result and the findings of this study, the following recommendations were made:

1. Folklore on bird species should be integrated into conservation programme ensuring community participation. Curriculum developers also should incorporate local myths on birds and other species in design curriculum for environmental education.

2. Donor agencies, government, conservation educationists, and ornithologists should recognise the significance of bird species in the culture of ethnic groups by ensuring that conservation projects regarding threatened species should also focus on addressing negative folklore, as well as encourage and promote positive folklore that support species survival
3. Conservation education programmes should integrate folklore into awareness programmes in schools as efforts to enhance the involvement of the younger generation in key conservation activities. This could be achieved by adopting storytelling and involving traditional knowledge holders in documenting folklore. Researchers, government, and environmental educationists should develop a digital database for the documentation and sharing of local folklore and names of bird species and other taxa among the ethnic groups, students/pupils, which will serve as a strategy to prevent the extinction of traditional knowledge on species, promote and preserve culture, while connecting humans and nature

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