



Research Article

People's Perception of Domestic Pigeon (*Columba livia*) in South-West, Nigeria

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Abstract

Exploring alternative protein sources has become crucial in addressing the shortage of animal protein, especially impacting vulnerable groups like children and pregnant women in Southwest, Nigeria. Fast-growing, short-cycle poultry species such as domestic pigeons emerge as potential contributors due to their prolific breeding, rapid growth, and low maintenance requirements. However, traditional, cultural, and religious attitudes in South-West, Nigeria hinders the utilization of pigeons as food despite their superlative characteristics and nutritional values. This study employed the use of questionnaires containing a 3-point Likert square to investigate people's perceptions about pigeons among 810 pigeon producers, sellers, consumers, and other stakeholders in the region. The result which were analyzed descriptively revealed that socio-economic characteristics such as age, gender, education, and primary occupation may have influenced people's perceptions of pigeons in the area. Despite these challenges, there is optimism that pigeon farming could significantly contribute to the economic and nutritional development of people in the region. Achieving this requires community engagement, education, extension, and market strategies to enhance wider acceptance and integration of pigeons into the broader poultry practices. This integration can contribute to addressing protein deficiencies and promoting food security in the region.

Keywords: Animal protein, Domestic pigeons, South-West Nigeria, Nutritional value, Perception, Socio-economic factors)

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Introduction

Nigeria, like many developing countries across the globe, faces significant challenges in meeting the nutritional needs of its growing population. Among these challenges is the persistent shortage of animal proteins, which poses serious health and developmental issues, particularly among vulnerable groups such as children and pregnant women (UNICEF, 2023, Have *et al.*, 2020). In the quest to address this pressing challenge, exploring alternative sources of animal protein becomes imperative, and one such potential source is the domestic pigeon (Sule *et al.*, 2024). Despite being often overlooked while discussing food security, domestic pigeons (*Columba livia*) possess several attributes that makes them a viable protein source, particularly in regions constrained by factors like land scarcity, environmental degradation, and socio-economic limitations. Pigeons exhibit prolific breeding capabilities, requiring minimal space and resources for housing and maintenance. Moreover, they possess a rapid growth rate and can be reared with relatively low inputs, making them accessible to a broad spectrum of small-scale farmers and households (Sule *et al.*, 2024).

However, despite these promising attributes, the utilization of domestic pigeons as a protein source in South-West Nigeria remains restricted primarily due to prevailing perceptions and cultural attitudes towards pigeons. Throughout history, pigeons have been revered for their symbolism, admired for their beauty, and even utilized as messengers and pets, yet the notion of consuming them as food encounters resistance in many communities. In such contexts, pigeons are often regarded more as companions or decorative elements, or as animals with significant connections to religious rituals and sacrificial undertakings, rather than as livestock (Abulude *et al.*, 2006; Parkhurst and Mountney, 2004; El-Hanou *et al.*, 2008; Sudhanya, 2020).

Despite their adaptability in urban environments and recognition for ecological flexibility and high reproductive rates (Luniak, 2004), pigeons are sometimes viewed as pests (Jerolmack, 2008), although others value their presence for connecting urban life to nature. Globally, pigeon meat has been consumed for its delicious and nutritious qualities since ancient times (Bhuyan *et al.*, 1999), its significance as a secondary source of animal protein has been highlighted in Nigeria by Omojola *et al.* (2012).

South-West Nigeria experiences a tropical climate with temperatures ranging from 21°C to 34°C and annual rainfall from 150 to 3000 mm (Faleyimu and Oyebade, 2012). According to NIMET (2022), the region is delineated into two climatic seasons: rainy from March to November and dry from November to February. Predominantly

inhabited by the Yoruba ethnic group, the region accommodates Islam, Christianity, and traditional religions (McKinnon, 2021). Agriculture in South-West Nigeria focuses on crops and livestock including pigeons, yet pigeon farming lacks commercialization, extension, and research focus compared to other poultry species (Sule *et al.*, 2024).

This study aims to examine the interplay between people's perceptions of domestic pigeons and the potential role of pigeons in addressing animal protein shortages in South-West Nigeria. Through a comprehensive analysis of existing literature and empirical research in the region, the paper seeks to elucidate the factors contributing to the reluctance or resistance towards pigeon rearing and consumption as a means of alleviating protein deficiencies and poverty in the area.

Methodology

Description of the Study Area

A field investigation into peoples' perceptions of pigeons was conducted in the South-West geopolitical zone of Nigeria, encompassing six states: Lagos, Oyo, Ogun, Osun, Ondo, and Ekiti. Covering an area of about 77,818 square kilometers and situated between longitude 2° 31' and 6° 00' East of the Greenwich Meridian and Latitude 6° 21' and 8° 37' North of the Equator (Mapcarta, 2024), this region had an estimated population of thirty-eight million people according to the 2006 census (NPC, 2006).

Data Collection, Sampling Method and Sample Size

Primary data was collected through a pre-tested, well-structured questionnaire designed to gather information about socio-economic characteristics and people's perceptions of domestic pigeons in the region. A multistage sampling approach was employed, with purposive selection of the three senatorial districts in each of the six states to ensure comprehensive coverage. Five localities, made up of urban, peri-urban, and rural communities, were then selected through simple random sampling. Pigeon producers, sellers, consumers, and other interested stakeholders were identified using a snowball sampling approach for producers and random selection for others. A total of 810 well-structured questionnaires, addressing the socio-economic characteristics of the people and containing a 3-point Likert scale (Agree, Disagree, and Undecided), were administered to assess people's perception of pigeons in the region, with 135 questionnaires distributed in each of the six states. At the end of the survey, a total of 769 questionnaires were retrieved. A breakdown of respondents from each State of South-West Nigeria is presented in Table 1. Personal interviews were conducted by 10 trained enumerators over a period of 12 weeks.

Analytical Tools

All data generated were subjected to descriptive analysis, involving the use of frequency counts and percentages to summarize and interpret the responses from the respondents.

Table 1: Breakdown of respondents from each State of South-West Nigeria

State	Total
Ondo	130
Ekiti	125
Osun	133
Oyo	131
Ogun	129
Lagos	121
Total	769

Source: (Sule *et al.*, 2024)

Results and Discussion

The socio-economic characteristics of the respondents in the study area, including age, gender, education, and primary occupation, are presented in Table 2. In South-West, Nigeria, various socio-economic factors influence the perception of pigeons. Analysis of the age distribution in this study reveals that only 22.80% of respondents were above 51 years old, with approximately 72.2% falling within the age range of 21–50 years. Age is a significant determinant, as older individuals typically hold more traditional views, while younger generations, constituting the majority of respondents, may tend to be more flexible in their perspectives. This demographic group appears more inclined towards accepting pigeon production and its utilization as a viable protein source. Studies by Abulude *et al.* (2006), Apata *et al.* (2015), and Bhuyan *et al.* (1999) emphasized the nutritional richness and affordability of pigeon meat, highlighting its potential to address malnutrition concerns and enhance public health by providing essential proteins and minerals. Leveraging these attributes could not only bolster youth employment prospects but also enrich the nutritional landscape of South-West Nigeria. Gender dynamics also play a role, with pigeon production and associated activities more prevalent among females than males (62 and 38% respectively), in the study area. This is consistent with findings by Kitalyi (1998) and Mapiye and Sibanda (2005) regarding women's dominant role in village poultry ownership and management. Similarly, Gueye (2005) noted the association of local chicken ownership with women and children. Given that women constitute a significant portion of the respondent pool,

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their influence over pigeon production and its consumption patterns within households may be too important to ignore.

Challenges related to education are evident, as a substantial portion of stakeholders (33.9%) lack formal education. This is capable of potentially hindering the adoption of modern practices and fostering negative perceptions of pigeon production and consumption. However, those with tertiary education (13.8%) are more likely to recognize the economic potential and nutritional attributes of pigeon farming. The study found that only 15.1% of respondents listed farming as their main occupation, contrasting with typical rural Nigerian communities where over 70% rely on agriculture for income (Alfred, 2001; Olayide, 1980). Instead, activities such as trading, artisan work, and civil service were predominant. This deviation may reflect contemporary trends wherein young individuals opt for alternative employment instead of farming.

Occupational backgrounds are likely to influence perceptions in the area, particularly among respondents engaged in trading (59.8%), who may have perceived pigeon production and management as an additional source of income. This suggests that individuals with commercial interests may view pigeon farming as a lucrative opportunity to supplement their earnings. Implications of this finding on pigeon production and consumption as meat could be significant. Firstly, it indicates a potential for increased participation in pigeon farming among individuals with trading backgrounds, leading to a rise in production levels. The involvement of traders in pigeon production suggests a growing interest in the economic aspects of pigeon farming. As traders may seek to capitalize on the market demand for pigeon meat, there may be efforts to improve production efficiency and market distribution channels. This could result in enhanced accessibility of pigeon meat to consumers, potentially leading to a broader acceptance and incorporation of pigeon meat into diets.

Table 3 presents the results of people's perception of pigeons as domestic birds in the study area. While majority (64.2%) perceived pigeons as common animals in their areas, a significant portion (29.5%) disagrees, indicating a varying degree of familiarity with pigeons in South-West Nigeria. Misconceptions persist, such as the belief that pigeon production is primarily practiced by old people, despite the majority of stakeholders falling within the youthful age range of 21–50 years. Addressing such perceptions is crucial to encourage more young people to engage in pigeon-related ventures. Negative attitudes towards pigeon rearing are evident, with 58% of respondents expressing unwillingness to rear pigeons. Competing economic activities and pre-existing negative mindsets about pigeons as domestic birds could be responsible for this. Additionally, traditional or superstitious beliefs may have hindered pigeon production in the region,

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this is because majority (40.6%) of the respondents agreed that there are religious, cultural and traditional believes about pigeon rearing and consumption. This reflects that cultural or religious associations that may have impeded pigeon production and the promotion of its meat as food in the region. However, there is optimism regarding the potential of pigeon farming, as highlighted by the perception that pigeons are easy to rear and offer cost-effective benefits compared to other poultry activities. This perception aligns with research findings by Asaduzzaman *et al.* (2012) who concluded that pigeon farming is straightforward and more cost-effective compared to other poultry activities. This perception may contribute to increased participation in pigeon farming, enhancing availability and affordability of pigeon meat in the market.

Majority of respondents (43.6%) did not agree that pigeons constitute an environmental menace or nuisance, even though 40.2% supported this notion. Ali *et al.* (2014) reported that pigeon droppings produce white stains that deface buildings and affect structures over time. Sahu (1987) also reported that pigeons can act as reservoir hosts or carriers, forming a source of infection for shared common pathogens and parasites.

The results depicted that 69.1% of respondents agreed that pigeons can be reared on a commercial scale, just like other poultry birds, while a very large percentage among the respondents agreed that pigeons, as animals, bring good fortune and unexplainable blessings to their producers and sellers. This notion is mostly superstitious and lacks scientific backing. 39.3% of the respondents were indifferent about whether pigeons can contribute to animal protein supply in Nigeria if reared commercially, 35.8% agreed with this thinking, while 25% disagreed. Several researchers had convergence of thoughts about the potentials of pigeons to ameliorate animal protein deficiency in Nigeria, especially in rural areas because of their key attributes of high prolificacy, short reproduction cycle, and less disease susceptibility (Omojola *et al.*, 2012 and Almajiri *et al.*, 2019).

Majority of the respondents (63.8%) agreed that pigeon meat is more nutritious than chicken meat, 59.3% agree that it is more nutritious than turkey, while 61.2% and 55% affirmed that meat from pigeons is more palatable than chicken and turkey meats, respectively. This corresponds with the findings of Cooper and Horbanczuk (2002), who indicated that pigeon meat offers higher nutritional value compared to chicken meat. Additionally, Bhuyan *et al.* (1999) highlighted that pigeon meat is abundant in protein and other essential nutrients, similar to chicken meat. While 43.4% of the respondents indicated their unwillingness to buy pigeon meat from the meat shop, 38.6% showed willingness to purchase it if well processed and presented. A significant portion remained indifferent, lacking a clear preference for or against pigeon meat

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consumption from such establishments. These findings have implications for both pigeon production and consumption. The reluctance among some participants may have stemmed from existing stigma or lack of familiarity with pigeon meat, suggesting a need for education, awareness or marketing efforts to increase acceptability. Conversely, the willingness of others presents an opportunity for producers to tap into this market segment.

Table 2: Socio-Economic Characteristics of Respondents on People’s Perception of Pigeon in South-West, Nigeria

PARAMETERS	FREQUENCY	PERCENTAGE
Age of Respondents		
≤ 20 years	4	0.5
21 – 30 years	57	7.4
31 – 40 years	151	19.6
41 – 50 years	382	49.7
51 – 60 years	116	15.1
61 years and above	59	7.7
Total	769	100
Gender of Respondents		
Male	292	38.0
Female	477	62.0
Total	769	100.0
Educational Status of Respondents		
No formal education	261	33.9
Primary Education	142	18.5
Secondary Education	257	33.4
Tertiary Education	106	13.8
Others	03	0.4
Total	769	100.0
Primary Occupation of Respondents		
Farming	116	15.1
Salary work	72	9.4
Trading	460	59.8
Artisan	80	10.4
Others	41	5.3
Total	769	100.0

Source: Sule *et al.* (2024)

Table 3: People's Perception of the Domestic Pigeon in South-West, Nigeria

PARAMETERS/ PERCEPTION QUESTIONS UNDECIDED	RESPONSES		F (%)
	AGREE	DISAGREE	
Pigeon rearing is common in your area	494 (64.2)	227 (29.5)	48 (6.2)
Pigeon rearing an old practice	527 (68.5)	177 (23.0)	65 (8.5)
Pigeon rearing old people's business	463 (60.2)	218 (28.3)	88 (11.4)
Young people lack know how on pigeon rearing	270 (35.1)	291 (37.8)	208 (27.0)
Can you rear pigeon?	219 (28.5)	446 (58.0)	104 (13.5)
There are traditional/ cultural beliefs on pigeon	312 (40.6)	293 (38.1)	164 (21.3)
Pigeon rearing is difficult	212 (27.6)	420 (54.6)	137 (17.8)
Pigeon is a menace to the environment	309 (40.2)	335 (43.6)	125 (16.3)
Pigeons can be reared in large scale	53.1 (69.1)	123 (16.0)	115 (15.0)
Pigeons bring good fortunes to its owners	617 (80.2)	55 (7.2)	97 (12.6)
Pigeons can augment animal protein supply	275 (35.8)	192 (25.0)	302 (39.3)
Pigeon is more nutritious than chicken	491 (63.8)	113 (14.7)	165 (21.5)
Pigeon is more nutritious than turkey	456 (59.3)	137 (17.8)	176 (22.9)
Pigeon is more palatable than chicken	471 (61.2)	147 (19.1)	151 (19.6)
Pigeon is more palatable than turkey	423 (55.0)	170 (22.1)	176 (22.9)
Can you buy pigeon meat from the meat shop?	297 (38.6)	334 (43.4)	138 (17.9)
Pigeon meat yield not worthwhile	229 (29.8)	391 (50.8)	149 (19.4)

Source: Field Survey in South-West, Nigeria

Interestingly, 50.8% of the respondents disagreed with the perception that pigeons are too small to justify the efforts involved in their rearing. With an average dressed weight of 200g per bird (Apata *et al.* 2015; Omojola *et al.*, 2012), an adult pigeon has the potential to meet the daily animal protein requirements for two human adults. This would be achievable through concerted efforts in mass production and enhancement of the productivity of pigeons. Highlighting the significance of this potential, it is noted that the Food and Agriculture Organization (FAO) recommended a minimum daily intake of 53.8g of animal protein per human adult, as outlined in the FAO (1992) guidelines. This confirms the idea that pigeons could make significant contribution to animal protein supply if they were properly integrated into the broader poultry production practices.

Conclusion and Recommendation

People's perceptions of pigeons in South-West, Nigeria may have been influenced by age, gender, education, and primary occupation of the people. Despite persisting traditional beliefs and educational challenges, there is a growing acknowledgment of the economic potential and nutritional value of pigeons. Understanding these dynamics is crucial for promoting sustainable pigeon production and utilization in the region. Consequently, addressing these challenges necessitates community engagement to understand and address underlying beliefs, alongside initiatives to educate about the nutritional value and safety of pigeon meat. Implementing strategies to enhance consumer acceptance, such as creating more awareness, promoting sustainable farming practices and ethical standards, is also crucial. By fostering a supportive environment for pigeon farming and advocating for the nutritional benefits of pigeon meat, stakeholders can work towards overcoming barriers and unlocking the full potential of pigeon production for economic development and food security. This requires collaborative efforts from government agencies, NGOs, farmers group, consumer organizations and local communities to provide training, access to resources, and market support for pigeon farmers. Additionally, integrating pigeon farming into agricultural extension programmes and promoting entrepreneurship opportunities in the pigeon value chain can further incentivize participation and ensure sustainable growth in the industry.

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