



Assessment of Information Source Utilization Among Swine Farmers in Makurdi Local Government Area of Benue State, Nigeria

¹Demenongu, T. S.; ²Michael, H. Y. and ¹Innocent, A. P.

¹Joseph Sarwuan Tarka University, Makurdi-Benue State Nigeria, Department of Agricultural Extension & Rural Development

²National Open University of Nigeria, Abuja, Nigeria, Department of Agricultural Economics and Extension, Faculty of Agricultural Sciences.

Corresponding Author's E-mail: storjape@gmail.com

Abstract

The study assessed utilization of information sources among swine farmers in Makurdi Local Government Area of Benue State, Nigeria. A multistage sampling technique was used to select 100 respondents, and data were collected using a well-structured questionnaire. Descriptive statistics, frequency counts, means, and percentages were employed to analyze the data. Findings revealed that swine farmers were predominantly male (77%), within the 31–50 years age range, with a mean age of 34 years, and 52% possessed tertiary education. The average farming experience was 18.9 years, indicating considerable technical exposure. The most available sources of agricultural information were fellow farmers (99%), radio/TV programs (98%), and internet/social media (90%). However, utilization was highest for radio/TV (93%), fellow farmers (85%), and agricultural input dealers (79%), while extension agents (13%) and veterinary officers (19%) were least utilized, reflecting weak institutional support. Major determinants of information utilization included accessibility (91%), relevance of content (75%), and educational level (75%). Key challenges comprised lack of pig management knowledge ($\bar{X} = 3.51$), high feed costs ($\bar{X} = 3.35$), untimely information delivery ($\bar{X} = 3.22$), and poor infrastructure ($\bar{X} = 2.79$). The study concludes that although swine farmers have access to multiple information channels, their effective utilization is constrained by infrastructural and institutional barriers. Strengthening agricultural extension and veterinary services, enhancing digital literacy, and developing farmer-centered communication platforms are recommended to improve information flow, decision-making, and productivity in the swine subsector.

Keywords: Assessment, Information, Source, Utilization, Farmers

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INTRODUCTION

A rapid increase in the world population is a threat to food security. The world population is expected to be over 9 billion people by the year 2050. The rate of population growth is far more than the rate of increase in food production, and according to the FAO, food production must increase by 70% in order to meet global food needs by 2050. As of 2018, the prevalence of food insecurity in Sub-Saharan Africa was 57.7% (FAO, 2019). The swine industry is a significant contributor to Nigeria's agricultural sector, providing employment and income for many rural households (Ogunsumi *et al.*, 2018). However, the industry faces several challenges, including inadequate access to information on best practices, market trends, and disease management (Adebisi *et al.*, 2019). Pig production is one of the community-level livestock programmes which the Nigerian government has

embarked upon to enhance food security (Adetunji and Adeyemo, 2012).

Effective utilisation of information sources is critical for the success of swine farmers, as it enables them to make informed decisions about their farming operations (Adebayo *et al.*, 2020). However, many swine farmers in Nigeria lack access to reliable and timely information, which can hinder their productivity and competitiveness (Ogundipe *et al.*, 2019). Adebayo *et al.* (2020) found that swine farmers in Nigeria rely heavily on fellow farmers and extension agents for information on best practices and disease management. However, the study noted that the information provided by these sources may not always be reliable or up-to-date. Mass media, particularly radio and television, are important sources of information for farmers in Nigeria. However, the information provided by

these sources may not always be relevant or useful to farmers (Ogundipe *et al.*, 2019). Swine farmers in Nigeria face several challenges in accessing information, including lack of access to extension services, inadequate infrastructure, and limited literacy levels (Adebiyi *et al.*, 2019).

Ogunsumi *et al.* (2018) emphasised the importance of information sources in swine production, noting that access to reliable and timely information can improve farmers' productivity and income. Okoro *et al.* (2020) found that swine farmers in Nigeria who have access to information on best practices and disease management are more likely to adopt improved farming practices and improve their productivity.

The lack of access to reliable information sources can have far-reaching consequences for swine farmers, including reduced productivity, decreased income, and increased vulnerability to disease outbreaks (Oyedele *et al.*, 2020). There is a significant gap in the understanding of the information sources utilised by swine farmers in Nigeria (Ejigu *et al.*, 2020). Lack of access to reliable information sources can have far-reaching consequences for swine farmers, including reduced productivity, decreased income, and increased vulnerability to disease outbreaks (Oyedele *et al.*, 2020).

Even though numerous researchers have conducted extensive research on the productivity of swine in Benue State, for instance, Obinne *et al.* (2002) conducted a comparison of swine farmers' management strategies in rural and urban areas of Benue State, Nigeria. Similar research was conducted by Ojabo and Enya (2020) on "Appraisal of management and biosecurity practices on pig farms in Makurdi, Benue State, North Central Nigeria." Abu (2023) worked on the adoption of improved swine management technologies in Otukpo Local Government Area of Benue State. Little or no research has been done on the assessment of utilisation of information sources among swine farmers in the Makurdi Local Government Area of Benue State. Hence, this study intends to bridge the gap that exists.

Objectives of the Study

- i. Describe the socio-economic characteristics of swine farmers in the study area.
- ii. Identify the information sources available in the study area.
- iii. ascertain the information sources utilised by pig farmers in the study area,
- iv. determine the factors influencing the use of information sources in the study area,
- v. Identify challenges faced by the pig farmers in utilisation of information sources in the study area.

METHODOLOGY

The study was conducted in Makurdi Local Government Area of Benue State, Nigeria. Makurdi local government was created in 1970. The local government area shares boundaries with Guma to the north-east, Gwer to the south, Gwer-West to the west and the Doma local government area of Nasarawa State to the north-west. The Local Government Area falls within latitude 7° 44' north and longitude 8° 31' east and is divided into two major blocks by the River Benue, hence the North and South Banks. It has a population of 300,377 (2006 NPC) with a landmass of a 16 km radius. Data for the study were analysed and will be analysed using descriptive statistics such as frequency counts, percentages and mean.

The population of the study comprised all registered swine farmers in the Makurdi Local Government Area of Benue State. There are 11 council wards in the study area. Due to the large population of the study area, a total number of 100 respondents as a sample size were selected using purposive and simple random sampling techniques. Five council wards were selected due to the large number of pig farmers in the area. After that, a sampling frame was developed for each of the council wards using proportional allocation of 10 % across board, a total sample size of 100 was then selected for the study as shown in Table 1.

Table 1: Sample Size Selection Plan

Council Wards	Sampling frame	Sample size (10%)
Agan	341	34
Fiidi	262	26
North bank 1	150	15
North bank 11	152	15
Mbalagh	99	10
Total	1004	100

RESULT AND DISCUSSION

Socio-economic characteristics of the respondents

The results presented in Table 2 reveal that the majority of swine farmers (79%) were within the 31–50 years age bracket, with a mean age of 34 years. This

suggests that the swine industry is largely dominated by economically active individuals who are capable of undertaking the physically demanding activities

associated with livestock production. This finding agrees with Akinola et al. (2021) and Nandi et al. (2020), who reported that middle-aged farmers are more actively involved in pig production because of their entrepreneurial capacity and greater adaptability to innovation. In a similar vein, Olowu and Oyeyinka (2019) observed that youth participation enhances the adoption and diffusion of modern livestock management practices, which corroborates the findings of the present study.

The study further revealed that 77% of the respondents were male, while only 23% were female, indicating that swine farming remains predominantly male-dominated. This finding supports the reports of Mbanasor and Kalu (2018) in Abia State, Nigeria, and Chauhan et al. (2021) in India, both of whom documented lower female participation in pig farming due to cultural barriers and the social stigma often associated with the enterprise. However, Nsoso et al. (2020) reported increasing female involvement in pig production in Botswana as a result of women-focused agricultural empowerment programmes, thereby suggesting regional differences in gender participation within the sector.

With respect to marital status, 70% of the respondents were married. This supports the assertion of Ezeh et al. (2019) that married farmers tend to exhibit greater stability in agricultural enterprises and are more likely to benefit from the availability of household labour. In terms of educational attainment, more than half of the respondents (52%) possessed tertiary education qualifications, indicating a relatively high literacy level among pig farmers in the study area. This finding contrasts with Ajani et al. (2020), who reported generally low literacy levels among pig farmers in southwestern Nigeria. The relatively

high educational attainment observed in the present study may explain the farmers' increased awareness and utilisation of diverse sources of agricultural information.

The findings also showed that most respondents (66%) operated farms ranging from 1.51 to 4.50 hectares, suggesting that swine production in the area is largely characterised by small- to medium-scale farming operations. This observation is consistent with the report of the Food and Agriculture Organization (FAO, 2021), which notes that pig farming in sub-Saharan Africa is predominantly smallholder-based, although it is gradually becoming more commercialised. In addition, the majority of respondents (70%) identified swine farming as their primary occupation, while the mean farming experience of 18.9 years indicates long-term involvement in the enterprise. This finding aligns with Adesiyun et al. (2022), who emphasised that farming experience significantly improves managerial competence and enhances farmers' ability to cope with risks associated with livestock production.

Furthermore, the results on respondents' annual income revealed that the majority (78.0%) earned between ₦61,000 and ₦500,000 annually, whereas only 3.0% earned less than ₦60,000 per annum. The mean annual income of ₦331,600.00 indicates that most farmers in the study area operate on a small scale and generate relatively low income, which falls below the ₦1.5 million benchmark commonly associated with small- and medium-scale enterprises. This finding is consistent with Munyua et al. (2007), who reported that farmers in Benue State are predominantly small-scale producers earning less than ₦1 million annually.

Table 2: Distribution of Respondents on the Socioeconomic Characteristics (N=100)

Variables	Frequency	Percentage	Mean
Age			
<= 21-30	8	8.0	34
31.00 - 40.00	79	79.0	
41.00-50.00	10	10.0	
50+	3	3.0	
Sex			
Male	77	77.0	
Female	23	23.0	
Marital status			
Single	10	10.0	
Married	70	70.0	
Divorced	20	20.0	
Level of education			
Non formal	19	19.0	
Primary	1	1.0	
Secondary	28	28.0	
Tertiary	52	52.0	
Farm size			
<=1.50	24	24.0	7.31
1.51-4.50	66	66.0	
4.51-7.50	8	8.0	
>7.51	2	2.0	

Occupation			
Swine farming	70	70.0	
Crop farming	9	9.0	
Trading	9	9.0	
Civil service	12	12.0	
Annual income			
<60,000	3	3.0	N331,600.00
60001 – 560,000	78	78.0	
5600,01+	19	19.0	
TOTAL	100	100	
Farming Experience			
<= 5.00	28	28.0	18.92
6.00 - 10.00	43	43.0	
11.00 - 15.00	22	22.0	
16.00+	7	7.0	
Member of cooperative			
YES	41	41.0	
NO	59	59.0	

Information Sources Available in the Study Area

The findings presented in Table 3 show that the most common sources of information available to swine farmers were fellow farmers (99%), radio/television programmes (98%), and internet/social media platforms (90%), followed by agricultural input dealers (80%). This indicates the existence of a pluralistic information environment in which interpersonal communication and media channels play dominant roles in information dissemination among swine farmers. Similar findings were reported by Nwachukwu and Odoemelam (2021), who observed that fellow farmers and radio remain major sources of agricultural information in rural Nigeria because of their accessibility, affordability, and the high level of trust associated with them.

In contrast, Aboagye et al. (2020) found that extension

agents and veterinary officers constituted the primary sources of information among pig farmers in Ghana, suggesting that extension delivery systems in that country are comparatively more organised and effective. The relatively low dependence on extension agents (32%) in the present study therefore points to weak institutional linkages between swine farmers and formal agricultural advisory services. According to Munyua et al. (2021), farmers tend to rely more heavily on peer networks and digital information platforms in situations where public agricultural extension services are underfunded or inadequately staffed. This assertion is consistent with the high level of dependence on the internet and social media platforms (90%) recorded in the current study.

Table 3: Information Sources Available in the Study Area

S/no.	Sources of information	Frequency*	Percentage
I	Agricultural extension agents	32	32.0
li	Radio/TV programs	98	98.0
lii	Fellow farmers	99	99.0
lv	Veterinary officers	42	42.0
v	Internet/social media	90	90.0
vi	Agricultural input dealers	80	80.0
vii	Printed materials	65	65.0
viii	Cooperative societies	61	61.0
ix	NGOs	19	19.0

Multiple responses recorded

Information Sources Utilized by Swine Farmers

Table 4 reveals that although radio/television programmes (93%), fellow farmers (85%), and agricultural input dealers (79%) were widely utilised by

respondents, only 13% reported using extension agents, while 14% utilised internet-based sources for agricultural information. This disparity between the availability and

utilisation of information sources suggests the existence of barriers related to the accessibility, trust, relevance, or effectiveness of institutional information channels. Daudu, Chado, and Igbashal (2020) noted that farmers often depend more on informal information sources because of the infrequent contact with extension personnel and the high transaction costs associated with formal agricultural advisory systems.

The low utilisation of veterinary officers (19%) observed in this study contrasts with the findings of Ouma et al. (2019), who reported that pig farmers in Uganda frequently consulted veterinary professionals because of the high prevalence and risks associated with zoonotic diseases. This variation underscores the need to

strengthen veterinary–farmer linkages in Nigeria in order to facilitate the timely dissemination of information on disease prevention, animal health management, and animal welfare practices.

Furthermore, the high utilisation of mass media and interpersonal communication channels supports the assumptions of the Diffusion of Innovations Theory as proposed by Everett Rogers (2003), which emphasises the significant role of opinion leaders and accessible communication media in the diffusion of innovations. Nevertheless, the low utilisation of internet platforms and print materials indicates the persistence of digital and literacy-related challenges among rural livestock farmers, as similarly reported by Rahman et al. (2022).

Table 4: Information Sources Utilized by Swine Farmers

S/no.	Sources of information utilized	Frequency*	Percentage
I	Agricultural extension agents	13	13.0
li	Radio/TV programs	93	93.0
lii	Fellow farmers	85	85.0
lv	Veterinary officers	19	19.0
v	Internet/social media	14	14.0
vi	Agricultural input dealers	79	79.0
vii	Printed materials	9	9.0
viii	Cooperative societies	57	57.0
ix	NGOs	12	12.0

Multiple responses*

Factors Influencing Utilization of Information Sources

The findings presented in Table 5 indicate that the major factors influencing the use of agricultural information among swine farmers were accessibility (91%), relevance of content (75%), educational level (75%), and cost of access (68%). These results support the findings of Ani and Baba (2019), who identified accessibility and relevance as critical determinants of agricultural information use among livestock farmers in Nigeria. Similarly, Gakuru et al. (2021) reported that farmers' level of education significantly influences their ability to understand, interpret, and apply agricultural information effectively, which is consistent with the findings of the present study.

Interestingly, only 16% of the respondents considered trustworthiness a major factor influencing information utilisation. This suggests that most farmers already have confidence in the traditional and peer-based information sources they commonly rely upon. This finding contrasts with Yue et al. (2021), who found that distrust in online agricultural information significantly reduced information utilisation among farmers in China. The observed variation may be attributed to differences in levels of digital literacy, technological exposure, and the degree of regulation within agricultural communication systems across countries.

Table 5: Factors Influencing Utilization of Information Sources

Factors	Frequency*	Percentage
Accessibility	91	91.0
Cost of access	68	68.0
Relevance of content	75	75.0
Language of communication	66	66.0
Trustworthiness	16	16.0
Timeliness	11	11.0
Availability of internet	50	50.0
Educational level	75	75.0

Multiple responses*

Challenges Faced by Swine Farmers in Utilizing Information Sources

According to the findings presented in Table 6, the most critical challenges faced by swine farmers include inadequate knowledge of basic pig management practices ($\bar{X} = 3.51$), high cost of feed ($\bar{X} = 3.35$), untimely delivery of information ($\bar{X} = 3.22$), and lack of awareness ($\bar{X} = 3.20$). These findings are consistent with the report of Okoro et al. (2020), who identified similar constraints among pig farmers in southeastern Nigeria, particularly highlighting high feed costs and low levels of awareness as major impediments to improved productivity.

The study further revealed that poor electricity supply ($\bar{X} = 2.79$) and inadequate internet access ($\bar{X} = 2.70$) significantly limited the effective utilisation of digital communication channels among swine farmers. This finding supports the observations of Tologbonse et al. (2020), who reported that infrastructural deficiencies constitute major barriers to the implementation and effectiveness of ICT-based agricultural information

systems. The challenges identified in the present study therefore point to broader systemic issues, including poor rural infrastructure, limited extension services ($\bar{X} = 2.86$), and inadequate localisation of information content, all of which hinder effective dissemination and utilisation of agricultural knowledge.

In comparison, Kariuki et al. (2021) found that pig farmers in Kenya benefited considerably from SMS-based extension programmes that helped to overcome physical distance and language-related barriers to information access. This contrasts with the Nigerian context observed in the current study, where infrastructural deficiencies and linguistic challenges ($\bar{X} = 2.66$) continue to persist. The implication is that there is a need for the development of more localised, vernacular-based, and multimedia-orientated agricultural information systems that can effectively address the communication needs of rural swine farmers.

Table 6: Challenges faced by swine farmers in utilizing information sources

Factors	Mean	Standard deviation
Lack of market	2.77	0.83
High cost of feed	3.35	0.84
Poor electricity	2.79	0.84
Language barriers	2.66	0.65
Lack of awareness	3.20	0.76
Information not time	3.22	0.89
Availability of internet	2.70	0.96
Educational level	3.00	0.89
lack of basic knowledge and skill on pig management	3.51	0.91
unorganized marketing	2.44	0.87
Lack of extension services	2.86	1.19

Cutoff mean: 2.50

CONCLUSION

The study concludes that swine farmers in the study area are predominantly youthful, educated, and experienced, characteristics that are expected to enhance their capacity to adopt and utilise agricultural information effectively. However, inadequate extension services, high production costs, and poor communication infrastructure constrain the effective utilisation of available information sources. Although digital media platforms and interpersonal networks are increasingly available to farmers, institutional information channels such as agricultural extension agents and veterinary officers remain considerably underutilised.

The dominance of fellow farmers, radio, and television as major channels of information dissemination indicates that swine farmers prefer information sources that are

easily accessible, affordable, and trusted. This finding is consistent with the principles of the Diffusion of Innovation theory proposed by Everett Rogers (2003), which emphasises the importance of compatibility, observability, and accessibility in the adoption and diffusion of innovations. Nevertheless, the relatively low utilisation of internet-based platforms and formal advisory systems reflects persistent barriers related to digital literacy, affordability, weak institutional support, and inadequate rural infrastructure.

Therefore, despite the relative availability of information sources, their practical utilisation for improved swine production remains limited by systemic and structural challenges. Addressing these constraints will require coordinated policy measures, infrastructural

development, and stronger institutional support systems. Such interventions are essential for strengthening agricultural knowledge dissemination, improving pig production efficiency, and enhancing the livelihoods of rural farming households.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed:

- i. Government and relevant agricultural agencies should recruit, train, and deploy more extension personnel in order to improve the frequency, effectiveness, and quality of advisory services provided to swine farmers.
- ii. Regular workshops, field demonstrations, and farmer field schools should be organised to improve farmers' knowledge of modern pig management practices, disease prevention strategies, and improved production technologies.
- iii. Veterinary officers should intensify community-based outreach programmes to ensure the timely dissemination of information relating to animal health, disease outbreaks, vaccination, and biosecurity measures among swine farmers.
- iv. To address the challenge of high feed costs identified in the study, government agencies and non-governmental organisations should provide subsidies, grants, and accessible credit facilities that will reduce the cost of feed and other production inputs.
- v. Policymakers should formulate and implement targeted agricultural policies that support swine farmers through improved market structures, effective disease control programmes, rural infrastructural development, and incentives that encourage the adoption and utilisation of improved agricultural information sources.

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