



The Effect of Agribusiness Information Marketing Tools (AIMTs) on the Income of Garri Producers: An Empirical Study in Sierra Leone

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Research Article

Abstract

Purpose: The study aims to assess the impact of AIMTs on the income of Garri producers in the Bo district of Sierra Leone. The study specifically examines the effects of social media marketing information tools on Garri producers' income, the effects of traditional marketing information tools on Garri producers' income, and the challenges faced when using these tools.

Method: The study adopted a cross-sectional research design and a multistage sampling technique to select 250 Garri producers in Bo District. A self-administered questionnaire was administered to 250 Garri producers selected randomly after the multistage sampling technique. Multinomial logistic regression and descriptive statistics were used to analyze the data.

Results: The regression results revealed that the use of computers, radio, television, and the quality of Garri have a positive effect on Garri producers' income, while the use of mobile phones as an agribusiness marketing tool has a negative effect on Garri producers' income. Results from the challenges encountered when using these tools revealed poor internet connectivity and cost as the key barriers to Garri producers' use of AMITs.

Implications: The study recommends that Efforts should be made to promote skill development in the use of agribusiness information marketing tools among local farmers and producers. This can be achieved through the efforts of extension workers, who organize workshops and radio programs to teach basic skills for using AIMTs.

Keywords: Agribusiness, Information Marketing Tools, Garri, Income

1. Introduction

Globally, the use of marketing information tools in agriculture has changed dramatically, shifting from conventional, relationship-based methods to complex, technologically advanced tactics that improve market access and producers' incomes (Chandrakar, 2026). In agriculture, digital marketing platforms have become essential tools for connecting producers with markets, enabling farmers to bypass traditional intermediaries and secure higher prices for their goods. Experience from around the world demonstrates that farmers who

have access to digital marketing platforms can boost consumer loyalty and brand trust by 30–45%, resulting in higher profit margins. Integrated digital marketing systems, such as AGROFUN, AGRIM, and Agrobazaar Online, which enable direct producer-consumer transactions and provide farmers with access to real-time market information, have been developed by countries like Malaysia (USDA, 2025). The potential of agribusiness marketing techniques to change smallholder agriculture from subsistence-oriented production to market-integrated businesses is highlighted by these worldwide examples. For instance, agribusiness marketing has been acknowledged as a strategic objective for agricultural growth by prominent international organizations. Through programs such as the AgriConnect platform, created in partnership with the World Bank Group and IFAD, the Food and Agriculture Organization (FAO) actively promotes digital marketing solutions. This platform facilitates smallholders' transition "from subsistence to surplus" by creating ecosystems of robust cooperatives, improved market connections, and enhanced access to digital tools (Oseni, 2025).

The cultivation and selling of cassava in Sub-Saharan Africa have traditionally been dominated by smallholders with little focus on commerce. For a long time, efforts to fully utilize cassava's commercial potential as a raw material for food such as Garri, feed, and industrial products have been hampered by the belief that it is "a poor man's crop". This is beginning to change, though, as improved marketing strategies and processing technologies increase the crop's appeal as an industrial raw material and a burgeoning urban food item (Abass et al., 2018). In the meantime, the development of the cassava value chain has been given top priority by ECOWAS, the West African region, as a strategic intervention for regional commerce and food security. To promote regional and global value chain integration, the European Union-funded West African Competitiveness Program (WACOMP), implemented in collaboration with UNIDO and ITC, aims to enhance the competitiveness of the cassava, cocoa, and palm oil sectors. Cassava processors in Nigeria have benefited greatly from WACOMP's branding, marketing, and value-addition training, which have enabled them to diversify their offerings and increase their market share. The program's goal of enabling cassava to "contribute more to industry, regional trade, and exports" aligns with ECOWAS's regional agricultural policy objectives. The development of a common market for agricultural products in West Africa and cross-border cassava commerce depend on enhanced marketing capacities and harmonized quality standards, as acknowledged by regional integration initiatives (Konkol et al., 2021).

Cassava is a staple meal and a vital crop for rural livelihoods and food security in Sierra Leone. Smallholder farmers are the main growers of the crop and also process cassava roots into traditional goods such as Garri. Despite the significance of cassava, the industry has historically faced challenges, including limited market access, inadequate pricing information, inefficient distribution systems, and significant post-harvest losses. Small-scale processors' potential revenue has always been constrained by their lack of understanding of product diversification and marketing tactics. But new initiatives have started to change this environment; companies like the Women and Youth in Agricultural Development Initiative (WaYADI) have changed from making traditional gari, flour, chin-chin, and doughnuts to providing vegetable and meat pies, sausages, and croquettes after receiving marketing and value addition training (Konkol et al., 2021). To revolutionize the nation's agrifood system, Sierra Leone's Ministry of Agriculture and Food Security (MAFS) has made agribusiness development a top priority through its flagship FeedSalone Strategy. "Increasing national aggregation, processing, and marketing capacity" is the specific focus of the third pillar of the FeedSalone Strategy (Bakarr et al., 2025).

Above all, fundamental limitations in Garri producers' marketing skills that constrain their potential revenue have been repeatedly identified in empirical studies conducted in Sierra Leone. A thorough analysis of gari

processing systems in 24 chiefdoms by Nabay et al. (2018) found that although processing operations can be financially successful, producers' competitive advantage is constrained by major issues with marketing margins and market access. The study showed that profitability varies significantly amongst processing systems, with only the most automated operations retaining a comparative advantage under reasonable financial circumstances. This suggests that production capacities and marketing efficiency are closely related.

Therefore, the agriculture sector and rural communities in Sierra Leone will suffer greatly if these marketing issues continue unchecked. As demonstrated by border traders who are routinely taken advantage of by better-organized regional purchasers, Garri farmers will continue to be caught in a loop of low negotiating power and lower pricing if they continue to lack effective marketing tools. The mostly female small-scale traders that make up "the backbone of the regional trade network, ensuring food security across borders" are kept in poverty by this dynamic (Kamara et al., 2026). The essential knowledge gap regarding how agricultural marketing methods, especially, affect the revenue of Garri producers in Sierra Leone needs to be filled immediately. No thorough study has methodically investigated the effects of strategic agricultural information marketing tools on producers' income in the Garri subsector, despite previous research documenting marketing constraints and examining processing profitability. Therefore, this paper aims to ascertain how agricultural marketing information tools affect the earnings of Garri growers in Sierra Leone's largest Garri-producing district, Bo District.

2. Literature Review

Agribusiness information marketing tools are often grouped into two categories: traditional and modern tools. Traditional marketing is any form of marketing that uses offline media to reach an audience. Basic examples of traditional marketing include newspaper and other print ads, as well as billboards, mailers, and TV and radio advertisements. Meanwhile, modern marketing primarily uses the internet and relies on tools such as social media, mobile phones, and computers. Several related empirical studies have investigated the link between these agribusiness marketing information tools and users' income. Below are some key recent empirical studies related to this topic.

Adelakun et al. (2020) observed limited use of Media Marketing Tools (MMTs) among cassava growers in Oyo State. Unreliable power supplies, expensive equipment, and a lack of technical expertise hampered the use of media marketing techniques. The use of media marketing techniques was significantly correlated with awareness, but not with knowledge. According to this study, all extension partners should educate and train cassava growers to use MMTs to increase production.

Additionally, Henry et al. (2021) surveyed South-South Nigerian farmers' turnover and the usage of social media for agricultural product marketing. Additionally, to ascertain the degree to which Nigerian farmers' sales turnover and efficiency might be improved through the use of social media in agricultural product marketing. For both the research design and data collection, they employed a structured questionnaire. They also analyzed the data using the least squares method and a t-test. According to their findings, using social media (such as Instagram and WhatsApp) to market agricultural products has been shown to improve farmer productivity and turnover by significantly lowering marketing costs and increasing demand.

According to Quandt et al.'s (2020) research on the impact of mobile phone use on smallholder agricultural production in Tanzania, East Africa, there is a positive correlation between reported maize yields and mobile phone use for agricultural purposes. Additionally, a large number of farmers claim that using a cell phone lowers farming expenses (50%) and time investments (47%) while increasing agricultural income (67% of respondents).

Kumar (2023) reported on how farmers in Haryana use mobile phones to access agricultural information. The six districts of North Haryana—Ambala, Yamuna Nagar, Kurukshetra, Karnal, Kaithal, and Panipat—were the sites of their investigation. A systematic questionnaire and an interview plan were used to gather information from a sample size of 300 respondents, including 50 farmers from two tehsils (subdistricts) in each district. The study's findings indicate that the majority of farmers have been using mobile phones for more than three years, and they are all literate in Hindi, which they use to gather and share information regarding agricultural practices such as post-harvest, weeding, thinning, and storage. Private agricultural solutions helplines are the agricultural information platform that farmers most frequently use.

Yelfiarita et al.'s (2025) study looked at Indonesian traditional agro-industry producers' use of digital marketing techniques. The study's goal was to identify the variables affecting small-scale food producers' use of digital marketing channels. 113 agro-industry SMEs were given structured questionnaires as part of a quantitative study design. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to evaluate the data. The study found that manufacturers' adoption of digital marketing techniques was significantly influenced by ICT experience, competitive pressure, market scope, and product characteristics. The results show that producers were more likely to use contemporary marketing strategies, such as social media marketing and online promotion, when they were exposed to competitive markets and had higher levels of digital literacy. According to the study's findings, digital marketing techniques greatly increase agricultural producers' market access and visibility.

The use of digital agricultural services by Ghanaian smallholder farmers was examined in a study by Abdulai et al. (2024). The study's goal was to examine the motivations behind and the level of adoption of digital agricultural technologies for marketing and production. The researchers used multivariate probit and Heckman-Poisson regression models to analyze survey data collected from 1,199 smallholder farmers. The results showed that farmers' adoption of digital agricultural services was significantly boosted by participation in training programs, membership in farmer groups, and access to loans. Additionally, the study found that digital tools enhanced farmers' access to input supply networks and market information, thereby increasing market involvement.

Gwelo F. A. (2026) conducted another empirical study to investigate the function of social media applications in the exchange of agricultural information among South African smallholder farmers. The study's goal was to investigate how social media platforms help farmers engage with the market and share expertise. The study, which used a qualitative multiple-case study methodology and interviewed 21 farmers, found that social media platforms such as Facebook and WhatsApp enabled farmers to interact with potential customers, share market knowledge, and advertise agricultural products. According to the study's findings, social media platforms are new marketing tools that can greatly improve smallholder farmers' access to markets and networking opportunities.

The role of internet marketing platforms in the commercialization of potato farming in Kenya was examined in a study by Maina et al. (2024). The study's conclusions are highly applicable to the broader West African context, where comparable digital agricultural platforms are emerging, despite its focus on Kenya. The study's goal was to assess the variables affecting farmers' use of digital marketing channels to sell their crops. The researchers used Probit and Tobit econometric models to analyze data collected from 375 potato farmers. The results showed that the adoption of digital marketing platforms was strongly influenced by farm income, loan availability, farmer group participation, and the household head's age. The study concluded that by facilitating better access to market data and direct purchasers, digital platforms can greatly raise farmers' levels of commercialization.

Ajibola (2025) conducted another empirical study to examine how digital marketing helps smallholder farmers in Sub-Saharan Africa commercialize their crops. The study assessed the impact of digital marketing platforms on mechanized agriculture and market participation using a literature-based analytical approach. The results showed that farmers can increase market reach, enhance product branding, and establish direct connections with customers and agricultural companies through digital marketing tools. The report noted that low internet connectivity and low digital literacy remain significant obstacles to adoption among rural farmers.

Meanwhile, in Sierra Leone, empirical research on agribusiness marketing tools remains limited, but several studies have examined agricultural marketing systems, cassava value chains, and market access among smallholder farmers.

The economics of Sierra Leone's gari processing and marketing systems were investigated in research by Nabay et al. (2018). The study's goal was to assess the efficiency and profitability of gari processing companies. The researchers used cost-benefit analysis and descriptive statistics to analyze data from field surveys conducted in several cassava-producing districts. The results showed that while gari processing can be profitable, producers must contend with significant marketing obstacles, including insufficient marketing infrastructure, price volatility, and limited market access. The study concluded that strengthening value chains and enhancing marketing strategies could significantly increase cassava processors' earnings.

The impact of marketing training programs under the West African Competitiveness Program on cassava and agricultural firms in Sierra Leone was assessed in a separate study by the International Trade Center (2023). The study's goal was to evaluate the impact of marketing support on agribusiness performance. Survey information and program evaluation reports from participating agricultural companies were used in the study. The results showed that cassava processors were able to grow their businesses, purchase new equipment, and reach new customers through digital platforms such as WhatsApp and other online marketing channels, thanks to training in branding, packaging, and digital marketing.

Similarly, MAFS (2024) assessed agribusiness development under the FeedSalone Strategy. The objective was to identify constraints in agricultural value chains and to develop strategies to improve market access. The study used stakeholder consultations and sector analysis to evaluate marketing systems across key value chains, including cassava. The findings indicated that limited marketing infrastructure, weak value chain coordination, and poor access to market information remain major barriers to commercialization among agricultural producers in Sierra Leone (Bakarr et al. 2025).

3. Methodology

3.1. Description of the Study Area

The Bo District is home to about 574,201 inhabitants, according to the 2015 Sierra Leone Population and Housing Census. The Mende ethnic group makes up the majority of the population, which is primarily rural. In the chiefdoms of Kakua and Tikonko, people mostly work in subsistence farming, with cassava serving as a major staple crop. Agriculture is the main industry in the area. The two main staples, rice and cassava, are grown as the main economic activities. Garri production from cassava is a major economic activity that provides many households—especially women-headed households—with a source of income. Petty trading, small-scale mining, and raising animals are further activities. The tropical rainforest, which constitutes the natural vegetation, has been significantly altered by agricultural practices. Nowadays, the terrain is a patchwork of farmland, fallow bush, and secondary forest, with rice and cassava fields being the most prevalent land-use categories.

3.2. Targeted Population and Sampling Procedure

The study focused on Garri producers in Bo District in the southern region of Sierra Leone who produce Garri for commercial purposes. Both male and female producers were targeted for the study. To achieve this objective, a multistage sampling technique was used to select the respondents (Garri producers) from the study area. This was done by dividing the district into various chiefdoms, and the four chiefdoms with the highest number of Garri producers were selected. Convenience and snowball sampling were then used to select respondents from the various villages within the selected chiefdoms, since most of them were not part of registered groups. The number of respondents from each chiefdom was allocated based on the size and number of Garri producers. Since it was difficult to determine the exact number of Garri producers in this district, we used the sample size formula for an unknown population to calculate our sample size, as shown below.

$$n = z^2 \times p(1-p) / e^2$$

where;

n = sample size

z = z-score

e = margin of error

p = standard deviation

Here, $p=4\%$, $e^2=0.05$, from the formula above, the standard deviation is 3.64

sub. $z=1.96$ in the equation above; we have

$$n = 1.96^2 \times 3.64(1-0.04) / 0.05$$

$$n = 3.8 \times 3.26 / 0.05$$

$$n = 248$$

Table 1: Sample Size Distribution

Chiefdom	Number of Garri Producers selected
Kakua	100
Tikonko	50
Lugbu	50
Selenga	50
Total	250

3.3. Data Collection

The study used a primary data source, a self-administered questionnaire designed to address the research objective. The questionnaire was made up of three sections, including: the first section carries questions on demographic information of the respondents, the second section is made up of questions on the various agribusiness information marketing tools used by producers, and the third section is made up of questions on the income of producers and challenges faced in the use of agribusiness information marketing tools. The questions in the questionnaire were closed-ended and completed by the respondents.

3.4. Model Specification and Estimation Technique

The model specification used in this study was a multiple regression model. In this model, agribusiness marketing information tools (AMITs), made up of both traditional and modern tools, and also some explanatory variables, which are socio-economic factors such as level of education and farm size, were believed to affect Garri producers' income as independent variables, while income was the dependent variable. Thus, we augmented the model used by Henry et al. (2021) as follows.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \dots + \beta_n X_n \quad \text{1 (Mathematical model)}$$

$$Y = \beta_0 + \beta_1 \text{SMITs} + \beta_2 \text{TMITs} + \beta_3 \text{FO} + \beta_4 \text{FS} + \beta_5 \text{PE} + \beta_6 \text{GQ} + \dots + \beta_n X_n + \epsilon \quad \text{2 (Econometric model)}$$

Where:

Y = Dependent variable: Garri producers' monthly income.

SMITs = Social media marketing information tools, which are a phone and a computer

TMITs = Traditional marketing information tools, which are radio, television, print ads, and word of mouth.

FO = Farmer's Occupation

FS = Farms size

PE = Producer Experience

GQ = Garri quality

$\beta_n X_n$ = other independent variables that are believed to affect producers' income in Bo.

β_0 = the intercept, which is the expected value of y when all the independent variables are zero.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = the coefficients representing the effect of each independent variable on Y.

ϵ = the error term, which represents all the factors that could potentially affect producers' income but were not included in the model.

To estimate the multiple regression models, Multinomial logistic regression is used. Multinomial logistic regression is used when the dependent variable or explanatory variables in question are nominal (equivalently categorical, meaning that it falls into any one of a set of categories that cannot be ordered in any meaningful way) and for which there are more than two categories. In this study, the dependent variable (income) was categorized into three groups (<1000SLE, 1000-2000SLE, and >2000SLE). Multinomial logistic regression is used to estimate the effect of AMITs on Garri producers' income. In contrast, the frequency distribution table is used to estimate the challenges maize farmers face when using these AMITs.

4. Results

The distribution of respondents by demographic attributes is displayed in Table 2. The results showed that 153 (59.5%) of the respondents were female and 97 (40.5%) were male. The findings indicate that there are more female than male respondents in the sample. The percentage of female respondents (59.5%) is higher than that of male respondents (40.5%). The results also showed that 48.6% of the total were married. Widows and widowers made up 18.3% and 14.8% of the sample, respectively, while single people made up 18.3%. These results show that married people make up the largest category of respondents, followed by widows, singles, and widowers.

The findings showed that the distribution of respondents by educational attainment provides significant insights into the relationship between education, agribusiness marketing information tools, and maize farmers' revenue. According to the results, the bulk of respondents have completed Senior Secondary Second (42.8%), followed by a Bachelor's Degree (31.9%); smaller percentages have completed Junior Secondary (9.7%) and Primary Education (8.2%). Furthermore, 7.4% of participants possessed other credentials, including certificates and HNDs. As a result, the findings showed that higher education levels help people comprehend and use agricultural marketing information tools more effectively, which may lead to better revenue outcomes.

The results also showed that 51.0% of the participants identified as farmers. This emphasizes the importance of farmers' viewpoints and experiences when analyzing how these instruments affect revenue outcomes. There is a noticeable presence of people working in both agricultural and non-agricultural occupations, with

24.5% of the respondents being civil servants. 24.5% of respondents were other farmers or businesspeople from various industries or company categories, indicating the possibility of varied viewpoints and the necessity of taking into account the interaction between their various roles in connection to agricultural marketing information tools.

Table 2: Demographic Characteristics

	Categories	Frequency	Percentage
Sex	Male	97	40.5
	Female	153	59.5
	Total	250	100
Marital status	Married	125	48.6
	Single	40	18.3
	Widow	47	18.3
	Widower	38	14.8
	Total	250	100
Level of education	Primary	21	08.2
	Junior Secondary	18	09.7
	Senior Secondary	110	42.8
	Bachelor's Degree	82	31.9
	Others	19	07.4
	Total	250	100
What is your principal occupation?	Farmer	131	51.0
	Civil servant	63	24.5
	Others	56	24.5
	Total	250	100

4.1. Challenges Faced in the Use of Agribusiness Marketing Information Tools

The respondents' agreement levels about the several difficulties encountered when utilizing agricultural marketing information technologies are shown in Table 3. Cost, network connectivity, time constraints, staffing shortages, meeting customer expectations, and dependability are among the challenges. The results showed that a sizable percentage of farmers (35.8%) strongly disagree that cost is a problem. Nonetheless, 19.5% strongly agree, and 33.1% agree that cost is a problem. The results also showed that 33.9% of farmers strongly agree and 42.8% agree that employing agribusiness marketing information tools requires internet connectivity. This indicates that a sizable majority of respondents have trouble accessing and using these tools due to unreliable or inconsistent internet connections. This is not surprising in most villages in Sierra Leone, and in Bo in particular, where the internet has been a problem for many sectors, including agriculture.

Table 3: Presentation of results on the challenges faced while using these tools

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
Cost	92 (35.8)	23 (11.6)	85 (33.1)	50 (19.5)
Internet Problem	33 (12.8)	20 (10.5)	110 (42.8)	87 (33.9)
limited time	47 (18.3)	95 (37.0)	78 (30.4)	30 (14.3)
Not enough personnel	47 (18.3)	61 (23.7)	115 (44.7)	27 (13.3)
Meeting consumer expectation	57 (22.2)	50 (22.1)	86 (33.5)	57 (22.2)
Reliability	59 (23.6)	31 (12.4)	116 (46.4)	44 (17.6)

Table 3 also showed that while 30.4% of farmers concur that time constraints are a problem, a significant portion (37.0%) disagrees. Furthermore, 14.3% strongly concur that time limits are a major obstacle. These answers demonstrate that a significant percentage of farmers struggle to set aside enough time to properly learn, use, and oversee agribusiness marketing information technologies. Furthermore, a sizable majority

of farmers (44.7% agree and 13.3% strongly agree) believe that a lack of staff makes it difficult to use these instruments. This implies that farmers might not have the workforce needed to benefit fully from agribusiness marketing information systems.

Additionally, the table's results show that a significant portion of farmers find it difficult to meet consumer expectations: 33.5% agree, and 22.2% strongly agree that they have trouble aligning their marketing initiatives with consumers' expectations, which may affect how effectively they use information tools. The report also reveals that a sizable majority of farmers (46.4% agree and 17.6% strongly agree) believe that employing agribusiness marketing information technologies presents reliability challenges. This research showed that farmers may experience problems with the tools' dependability, accuracy, or consistency, which could impede their marketing initiatives.

4.2. Multinomial Regression Analysis

The significance value (p-value) linked to the chi-square test from the regression results shows that the model as a whole is statistically significant. The model is consistent in this instance since the p-value is 0.000, indicating that the variables in the model are jointly significant. This suggests that the final model's variables significantly affect the outcome under investigation (income). Changes in the dependent variable (Garri producers' income) may be explained by changes in several independent variables in the model, as indicated by high pseudo-R-squared values. The Cox and Snell pseudo-R-squared value, for instance, is.627. This shows that the predictors in the model account for about 62.7% of the variance in the outcome variable (income), and the Nagelkerke pseudo-R-squared value is.713. This figure also shows the percentage of variance that the model can account for. A value of 713 indicates that roughly 71.3% of the variance in the outcome variable is explained by the model's predictors.

Above all, the results showed a positive correlation between the income category of 1000-2000SLE and the quality of Garri. The coefficient for maize quality was found to be 0.255, meaning that, when all other factors are held constant, there is an estimated increase in the log-odds of belonging to the income category of 1000-2000SLE compared to the reference category <1000SLE for every unit increase in maize quality. With a statistic of 5.851, the Wald test demonstrated a substantial correlation between the income category and the quality of Garri. This link is statistically significant at the 5% significance level, with an associated p-value of 0.016.

The results also showed a favorable correlation between experience and the 1000–2000 SLE income range. The coefficient for experience was 0.902, indicating that the log-odds of falling into the income category of 1000- 2000 SLE, relative to the reference category <1000 SLE, are projected to increase by 1 for every unit increase in experience, holding other factors constant. This link is statistically significant at the 1% level, with a p-value of 0.000. Adjusting for other factors, the result similarly showed a coefficient of 15.625 for computer use, indicating a significant positive correlation between computer use and the probability of falling into the 1000SLE–2000SLE income category relative to the reference category. There is strong evidence of a substantial correlation between income group and computer ownership at the 0.000 statistical significance level.

The results showed that the telephone coefficient was -2.828. With all other factors held constant, this coefficient indicates the estimated difference in the log-odds of falling into the 1000–2000 SLE income category when comparing telephone to the base category. With a p-value of 0.000, the Wald test for telephone produced a statistic of 16.355, which was highly significant. This is compelling evidence of a substantial negative correlation between telephones and the 1000–2000 SLE income level. Meanwhile, the coefficient for radio was 0.876. This coefficient represents the estimated change in the log-odds of

belonging to the income category of 1000- 2000 SLE when comparing radio to the base category, while holding other variables constant. With a p-value of 0.000, the Wald test for radio produced a statistic of 14.126, which was highly significant.

Table 4: Regression Results

Parameter Estimates				
Income (monthly income in Leones (SLE))		B	Std. Error	Sig.
1000-2000	Intercept	-3.448	1.002	.001
	QM	.255	.105	.016
	Experience	.902	.231	.000
	computer	15.625	4064.187	.997
	telephone	-2.828	.699	.000
	Radio	.876	.233	.000
	print ads	17.445	6676.603	.998
	television and radio	.254	.106	.016
	Television & print ads	-1.728	2.038	.397
	television, radio, and print ads	19.132	3562.791	.996
	Farmer	2.597	.617	.000
	Civil servant	3.925	.705	.000
	Experience	25.472	.221	.000
>2000	QM	.154	.150	.307
	computer	19.489	6708.405	.998
	telephone	-4.811	.972	.000
	Radio	13.650	3596.821	.997
	print ads	29.748	6689.385	.996
	television and radio	-2.228	1.865	.232
	Television and print ads	3.330	4726.504	.999
	television, radio, and print ads	24.729	5950.710	.997
	Farmer	20.567	1304.158	.987
	Civil servant	22.832	1304.158	.986
	Intercept	-9.818	13.158	.541
	Num.	250		
	Chi-Square	246.859		.000
	Cox and Snell	.627		
	Nagelkerke	.713		
Pseudo R-square	McFadden	.416		
	McFadden	.416		
	McFadden	.416		

a. The reference category is: <1000.

This provides compelling evidence of a strong positive correlation between radio and the 1000–2000 SLE income level. It was discovered that the radio coefficient was 2.401. This indicates that, after adjusting for other factors, those who use radio as a marketing strategy are, on average, 2.401 times more likely to fall into the 1000–2000 SLE income bracket than those in the base word-of-mouth category. Additionally, the results showed a favorable correlation between television and the 1000–2000 SLE income group.

Additionally, the results indicate that the farmer and the income category of 1000- 2000 SLE have a good relationship. Keeping all other factors equal, this coefficient (2.597) shows the projected change in the log-odds of falling into the 1000-2000SLE income bracket when comparing farmers to public servants. With a p-value of 0.000 and a statistic of 17.703, the Wald test for farmers was highly significant at the 1% level. Additionally, the telephone coefficient was -4.811, indicating that Garri farmers' income is negatively affected by using the telephone as a marketing strategy. With a p-value of 0.000, the Wald test for telephone

yielded a statistic of 24.514, which was highly significant at the 1% level. This is compelling evidence of a substantial inverse link between telephone use and the >2000SLE income category. The coefficient for telephone was 0.008. This revealed that, on average, individuals exposed to telephone-based marketing have approximately 0.008 times the odds of belonging to the income category >2000SLE compared to individuals in the base category of computer and telephone, while controlling for other variables. These results show that, compared with the base category of computer and telephone, exposure to a telephone is associated with a much-reduced risk of falling into the income category >2000SLE. When compared to the reference category <1000SLE, the results for other variables in the >2000SLE are nearly identical to those in the 1000-2000SLE. Therefore, the income of Garri growers in the Bo district is affected in many ways by the usage of agricultural marketing information technologies.

5. Discussion

The study found a significant positive relationship between the use of a computer as an agribusiness information marketing tool and income in both categories, with a coefficient. The results were comparable to those of Hou, J. et al. (2019), who examined the effects of utilizing computers to gather data on the production and marketing of northern Chinese farm households. According to their findings, using computers not only increases the amount of arable land rented but also lowers the likelihood of selling agricultural products at farm-gate markets and the intensity of family labor input. Additionally, it increases per capita spending on housing, clothing, transportation, and insurance.

The study discovered a strong inverse link between income and phone use. A lower probability of being in a higher-income category was associated with telephone use. This outcome was consistent with research by Gwelo, F. A. (2026) on the impact of mobile phone use on smallholder agricultural production in Tanzania, East Africa. Their findings indicate a conflicting relationship between reported maize yields and the use of mobile phones for agricultural purposes. The fact that the majority of respondents become sidetracked by other entertaining videos online rather than focusing on promoting their product could account for these findings.

Additionally, the study discovered a strong correlation between income and the use of radio as an agribusiness marketing strategy. In contrast, Rachmiatie, A. et al. (2020) investigated the difficulties that local radio stations face in promoting farmers' businesses. The study's findings demonstrated that local radio managers must be resourceful to survive, which is why advertising revenue is frequently less than advertising expenses. However, the situation is different in the Bo area of Sierra Leone, where the majority of homes have a radio, which helps expose the goods of many producers who have chosen to use radio stations to promote their Garri.

6. Conclusion

The study's primary goal was to ascertain how agribusiness marketing information technologies affected the earnings of Garri producers in the Bo district. The results point to significant variables that affect Garri producers' revenue levels. The results showed that higher income is correlated with Garri quality, experience, and the use of computers, radio, and television, highlighting the significance of technology in generating income for Garri producers in Bo. On the other hand, there is a negative correlation between Garri producers' income and phone use. Programs to help Garri growers become more proficient in using information marketing technologies are therefore necessary to boost product marketing in the Bo district and elsewhere.

7. Directions for Future Research

The benefit-cost ratio showed that poultry farming is profitable. The researcher suggests that further study should be carried out to assess the strategies and policies that should be put in place by the local and central governments to increase the profitability of poultry farming in other districts beyond Muyamba District, thereby encouraging more people to engage in poultry farming.

Authors' Contributions: Sonkey Louis Ntu collected data, wrote the paper, conceived the idea, and also did the analysis of the data, while Abdulai Sheriff wrote the literature review and edited the paper.

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