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## ECONOMICS OF IRISH POTATO MARKETING IN JOS SOUTH LOCAL GOVERNMENT AREA, PLATEAU STATE, NIGERIA

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### ABSTRACT

*The study examined the economics of Irish Potato marketing in Jos South Local Government Area, Plateau State. Both purposive and random sampling techniques were used to select eighty (80) respondents for the study. A structured questionnaire was used to collect the data, and it was analysed using descriptive statistics and gross margin. The result revealed that 65% of respondents were male and 96.2% were in the 20-54 age group. Half (50.0%) of the marketers had experience of between 11 and 40 years. Also, 50.0% had a household size of 5 to 16 persons. The majority (71.3%) were married, with 41.3% having a tertiary education as their highest level of education. The result also showed a gross margin of ₦225, net income of ₦217.31 and a return per Naira invested of ₦1.22. Furthermore, the major problem faced by the Irish potato marketers was the high cost of transportation. It was therefore concluded that Irish potato marketing was a profitable venture in the study area despite the high cost of transportation. The study therefore recommends that the availability of a good transport system and an effective marketing system would increase the net income of the Irish potato marketers.*

**Keywords:** Costs, Gross Margin, Jos South, Marketing, Potato, Return

### INTRODUCTION

Agricultural products contribute significantly to Nigeria's economic development. Among the products are Irish potato (*Solanum tuberosum* L.). Irish potato crop ranks fourth in the world in terms of economic importance (Horton, 1992). Developing countries account for 25% of the world's potato production (FAO, 1999). Potato is indigenous to South America and is believed to have been brought to England in 15 Irish potato 86. It first became an important food crop in Ireland and was reintroduced into South America from that country, hence the name Irish Potato. Potatoes are now grown extensively throughout the world and are among the important food crops. The world production reached 320 million tonnes in 2007. In developing countries, production has almost doubled since 1991, with a corresponding increase in consumption (Hoffler and Ochieng 2008; FAO 2008).

Potatoes require a high altitude of about 1000-1800 meters above sea level, and a low temperature of 15°C or less. In Nigeria, the crop is grown in Jos and on the Mambilla Plateau, at altitudes of at least 1400 meters above sea level and with temperatures of about 10-20°C. However, production is concentrated in Jos, Plateau State, accounting for over 75% of Nigeria's total production. Numerous cultivars exist, but twenty eye and smooth skin were suitable for West Africa. Although the potato cultivated worldwide belongs to just one botanical species, *Solanum tuberosum*, it comes in thousands of varieties with great differences in size, shape, colour, texture, cooking characteristics and taste.

The varieties include Atahualpa, Nicola, Russet, Burbank, Lapin pulkula, Yukon Gold, Spunta and Mans bard (FAO, 2008).

To underscore the importance of potatoes in addressing the world food crises, the United Nations officially declared 2008 the International Year of the Potato to raise its profile in developing nations, calling the crop “hidden treasures” (FAO 2008). Potatoes are of great importance as a food crop and as an economic crop. Nutritionally, potatoes are one of the world’s most nutritious sources of energy food for both humans and animals. The crop can be prepared in various forms, such as boiled, potato balls, porridge, chips, and flour, and is used for feeding animals (Okonkwo, 1995). The ratio of protein to carbohydrates is higher in potatoes than in many cereals and other root crops. On the other hand, industrially, fresh Irish potato tubers are sliced and processed into starch. Various uses of the starch include laundry purposes and hardening of textiles. The starch is used in the pharmaceutical industries and in the production of alcohol and wines. Even the potato waste could be liquefied and fermented to produce fuel-grade ethanol. Potato starch is also a completely biodegradable alternative to polystyrene and can be used to create plastic items such as plastic dishes, forks and spoons. Potato starch is also being developed as a biodegradable packaging material.

Despite the rapid breakthrough encountered in Irish potato marketing in the plateau state, there are still some constraints mitigating against its marketing, which include poor storage facilities, poor transport system and activities of middlemen resulting to high product cost (Ugonna, 2013). This makes Irish potato prices at retail level vary high beyond low class consumers, one will wonder if Irish potato marketers make profit or not. There is therefore a need to examine the economics of Irish potato marketing in Jos South, Plateau State. Specifically, the study was designed to examine the socio-economic characteristics of Irish potato marketers in the study area, determine the gross margin for Irish potato marketers in the Jos South Local Government Area, and describe the problems faced by Irish potato marketers in the study area.

## **METHODOLOGY**

### **The study area**

The study Area is the Jos South Local Government Area of Plateau State, one of the state's 17 local government areas (LGAs). It has an area of about 400 square kilometres (Km<sup>2</sup>) and lies at an altitude of about 1300m. It is surrounded by high plains at elevations between 600m and 900 m above sea level. Jos South shares a boundary with Riyom LGA to the east, Jos North Local Government to the north, and Barkin Ladi LGA to the west. It has its headquarters in Bukuru Town. The LGA is 15 kilometres away from the state capital and is about 179 kilometres from Abuja. The local government area has four districts: Gyel, Bukuru, Kuru, and Vom. It has a population of about 311,392 (NPC, 2006). Its average rainfall ranges from 700mm to 1350mm.

Climate is characterized by low to moderate temperatures; the average monthly temperature ranges between 21°C and 25°C, with the coolest months in December to February, characterized by cool, dry, and dusty harmattan. Soil type varies from clay loam to loamy soil rich in humus. The people are predominantly farmers who produce crops such as maize, Irish potatoes, acha (hungry rice), yams, and livestock such as sheep, goats, and poultry. The major ethnic group in the Local Government Area is the Berom, along with other Nigerian groups such as the Hausa, Igbo, Yoruba, Miango, and so on.

#### **Sampling Technique and Data Collection**

The target populations for the research were Irish potato marketers. A multistage sampling technique was used. First, four districts were selected purposively, based on the quantity of trade in the areas. These are: Du, Bukuru, Vom and Kuru. Secondly, two villages were randomly selected from each district, making eight villages. From each village, ten respondents were randomly selected, making a total of 80 respondents used in the study. Information on socio-economic characteristics, costs and returns, and problems encountered was collected. This was obtained through the administration of structured questionnaires to respondents randomly selected for the study.

#### **Data Analysis**

Descriptive statistics (frequency distribution and mean) and gross margin were used to analyze the data. The gross margin was used in determining the profitability of an enterprise with negligible fixed inputs. A positive gross margin implies profitable Irish potato marketing. The gross margin, according to Abdullahi *et al.* (2016), can be written as:

Gross Margin Model

$$GM = GFI - TVC$$

Where;

GM = Gross Margin

GFI = Gross Farm Income

TVC = Total Variable Cost

## **RESULTS AND DISCUSSION**

### **Socio – economic of Irish Potato Marketers**

The results in Table 1 show that the majority (65%) of Irish potato marketers were male, with 35% female, suggesting that males dominated Irish potato marketing in the study area. This is purely a cultural dictate of the northern Nigerians that restrains women from participating in more household activities. It is possible that men were mostly available for the sampling survey. And the fact that men take on more responsibility than women and need to be out there working to take care of the family. The implication is that women should be encouraged to participate in potato marketing activities. The findings agree with the findings of Abdulhamid *et al.* (2017) and Adamu *et al.* (2014), who reported more (65% and 61.67%) male than females for Irish potato production in Jos South. Less participation of women in economic activities contributes to female overdependence on their male counterparts. Abdullahi *et al.* (2016) reported that 100% of potato producers in Jos South were male.

The distribution of marketers' marital status (Table 1) shows that 71.3% of the respondents in the study area were married, while only 28.8% were single. This means that more than half of the respondents are married. Their engagement in Irish potato marketing could be partly attributed to the need to meet the daily food requirements of their household members and partly to the need for cash. This finding is consistent with Abdullahi *et al.* (2016), who reported that 79.5% and 65.9% of wholesalers and retailers, respectively, were married.

Table 1 reveals that most (96.25%) of the marketers fall within the economically active and productive age bracket of 20-54 years.. Only 3.75% of marketers fall within the 55-60-year age group. This implies that most of the potato marketers were young. Persons within such productive age are expected to effectively utilize available resources (Nwaiwu *et al.*, 2012). This could also influence their reasoning and management abilities. This result is similar to the findings of Danwanka (2007) and Abdullahi *et al.* (2016), who found that Irish Potato marketers were in the 21-50 age category. Table 1 also shows that 82.5% of respondents have a household size of 6-15 persons. This implies that the larger the household size, the more family labour may be expected to be involved in Irish potato marketing. This result is similar to that of Abdulhamid *et al.* (2017), who reported that 87.5% of farmers in the western zone had between 5 and 16 persons.

Table 1 indicates that most (41.3%) of the respondents had a tertiary education, 32.5% attended secondary education, 6.3% had a primary education, and 7.5% had an adult education. Only 12.5% had no formal education. This means that 87.6 of marketers had one form of formal education or the other. This will help marketers with their decision-making. Education plays an important role in farmers' adoption of improved technologies and decision making, and also improves their ability to evaluate and manage risk, which determines the success of their farm enterprises (Murtala *et al.*, 2004). The result in Table 1 reveals that 48.8% of respondents' primary occupation is marketing/farming, 25.1% are marketers only, 21.3% are civil servants and traders, and 5.0% are into potato marketing and other petty trade. This implies that respondents diversify their sources of income. This result contradicts the findings of Abdullahi *et al.* (2016), who reported that 60% of respondents were involved in Irish potato production only in Wudil, Kano State.

The results in Table 1 show that half (50%) of the respondents had between 1 and 10 years of marketing experience, and 33.8% had between 11 and 20 years of experience. The result also shows that about 16.2% had between 21 and 40 years of experience in Irish potatoes. This implies that marketers understand Irish potato marketing. Alabi (2005) said that years of experience enhance efficiency and productivity in business. Danwanka and Ggala (2007) reported an average farming experience of 14 years among potato farmers in Jos.

Table 1 shows that 71.11% of the respondents sourced their initial capital from personal savings, 20.0% from friends and relatives, and 4.44% obtained a loan from commercial banks.

**Table 1: Socio-Economic Characteristics of Irish Potatoes Marketers**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Sex</b>	<b>Frequency</b>	<b>Percentage</b>
Male	52	65.0
Female	28	35.0
<b>Marital Status</b>	<b>Frequency</b>	<b>Percentage</b>
Married	57	71.3
Single	23	28.8
<b>Age (years)</b>	<b>Frequency</b>	<b>Percentage</b>
20-25	6	7.5
26-31	16	20.0
32-36	26	32.5
37-42	11	13.8
Above 42	13	16.3
49-54	5	6.3
55-60	3	3.75
<b>Household size</b>	<b>Frequency</b>	<b>Percentage</b>
1 – 5	8	10.0
6 -10	40	50.0
11- 15	26	32.5
16 -20	4	5.0
21- above	2	2.5
<b>Educational Background</b>	<b>Frequency</b>	<b>Percentage</b>
No formal education	10	12.5
Primary education	5	6.3
Secondary education	26	32.5
Tertiary education	33	41.3
Adult education	6	7.5
<b>Occupation</b>	<b>Frequency</b>	<b>Percentage</b>
Potato marketing only	20	25.1
Marketing and farming	39	48.8
Civil servant & farming	17	21.3
Other petty trade	4	5.0
<b>Marketing experience</b>	<b>Frequency</b>	<b>Percentage</b>
1 – 10	40	50.0
11 – 20	27	33.8
21 – 30	8	10.0
31 – 40	5	6.2
<b>Source of capital</b>	<b>Frequency</b>	<b>Percentage</b>
Personal saving	64	71.11
Commercial banks	4	4.44
Friends and relatives	18	20.0
Money lenders	4	4.44
<b>Source of Irish Potato</b>	<b>Frequency</b>	<b>Percentage</b>
Farmers	48	60
Wholesalers	28	35
Other sources	4	5.0
<b>Buyers of Irish Potato</b>	<b>Frequency</b>	<b>Percentage</b>
Consumers	60	75
Others	20	25
<b>Mode of Packaging Material*</b>	<b>Frequency</b>	<b>Percentage</b>
Bags	56	33.73
Baskets	50	30.12
Plastic containers	60	36.14

\* (Multiple responses)

**Source: Field Survey, 2023**

Also, 4.44% sourced their funds from money lenders. This implies that most marketers do not obtain loans from formal financing institutions; therefore, they rely on their personal savings, which are insufficient to expand the market. This result agrees with the findings of Abdulhamid *et al.* (2017) that the major source of capital for Iris potato in Jos South, Plateau State, is personal savings.

Table 1 shows that the majority (60%) of the respondents source their Irish potatoes from the farm, while 35% and 5% source their Irish potatoes from the wholesalers and other sources. The implication is that most Irish potato retailers in the Jos South Local Government Area buy potatoes from producers. Table 1 shows that the majority (75%) of Irish potato retailers sell their product to consumers, and 25% sell their product to other petty traders. This shows that retailers sell a large portion of their products to consumers. Table 1 shows that 33.73% packaged their products in Bags, 36% used plastic and 30.12% used baskets. This implies that most of the Irish potato retailers package their potatoes in plastic containers.

#### **Cost and Returns of Irish Marketers' Retailers**

Table 2 shows that the retailers purchase Irish potatoes at ₦800/basket, and the total variable cost of marketing was ₦945, representing 96.2% of the total cost. Fixed cost was ₦37.69, representing 3.83% of the total cost. The total revenue per basket was ₦1200, gross margin of ₦255, and net income was ₦217.31, respectively. The return per naira invested shows that for every one naira invested in Irish marketing, a profit of ₦1.22 is realised. This implies that Irish potato marketing was profitable at the time of the study.

**Table 2: Distribution by Costs and Return for Irish Potato Retailers per Basket (₦)**

<b>Item</b>	<b>Amount(₦)</b>	<b>Percentage (%)</b>
<b>a. Variable costs</b>		
Purchase cost for Irish potato	800	81.44
Cost of transportation	10	1.02
Cost of loading /offloading	20	2.04
Labour cost	10	1.02
Other charges ((₦)	105	10.60
Total variable cost	945	96.12
<b>b. Fixed assets</b>		
Depreciation on fixed assets ((₦)	37.69	3.88
Total fixed cost	37.69	
Total cost	982.69	100
Total returns	1200.00	
Gross margin	255.00	
Net return income	217.31	
Return on invested	1.22	

**Source: Field survey, 2023**

### Problems Faced by the Marketers of Irish Potatoes

Table 3 shows that 30.7% reported a problem with the high cost of transportation, which ranks first among all other problems. The result further reveals that 24.0% the respondents complained of high marketing charges, 21.0% inadequate capital and 16.0% complained of fear and anxiety. High transportation costs, high marketing charges, and inadequate capital were ranked first, second, and third, respectively. The implication is that the main problem marketers face is the high cost of transportation. This is consistent with the findings of Onuwa *et al.* (2017), who reported that 83% of African eggplant marketers in Jos North complained about transportation costs.

**Table 3: Problems Faced by the Marketers of Irish Potatoes**

Problems	Frequency	%	Rank
Lack of storage facilities	06	8.0	5 <sup>st</sup>
Market charges	18	24.0	2 <sup>th</sup>
Inadequate capital	16	21.3	3 <sup>th</sup>
High cost of transportation	23	30.7	1 <sup>rd</sup>
Fear and anxiety	12	16.0	4 <sup>nd</sup>

**Source: Field Survey, 2023**

### CONCLUSION AND RECOMMENDATIONS

The study concludes that Irish potato marketing was a profitable venture in Jos South, as indicated by a gross margin of ₦255.00 and a return per naira invested of ₦1.22. However, most Irish potato marketers complained about the high cost of transportation.

Based on the findings, the study recommends a well-functioning transportation system to reduce transportation costs and support other marketing expenses. Marketers are also encouraged to join cooperative societies to improve access to credit and support business expansion.

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