

# Effect of Agribusiness on Irish Potato Farmer's Wellbeing in Mangu Local Government Area of Plateau State

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## Abstract

*As a nation that depends on agriculture to provide food security for its citizens, recognizing the impact of agribusiness in boosting production and improving farmers' well-being is critical. The study examines the effect of agribusiness on Irish potato farmers in Mangu Local Government Area (LGA) of Plateau State, Nigeria. A structured questionnaire was used to generate data from farmers. The study employed the Average Treatment on Treated (ATT) method of analysis to evaluate the effect of agribusiness on potato farmers' well-being. The finding showed that the coefficient of ATT is positive and the t-statistic (2.35) is greater than two (2), which clearly demonstrates that benefiting from agribusiness has a significant positive effect on Irish potato farmers' wellbeing at 5% level of significance. The study concluded that adopting agribusiness in potato farming in Mangu LGA will positively impact improving farmers' wellbeing and reduce poverty. The study recommends that the local government chairman, through the department of agriculture, should collaborate with the plateau state government to provide soft loans and grants to farmers so they can afford modern farm inputs, and they should also invest in extension workers who will teach farmers modern ways of Irish potato farming, and in turn will improve their well-being*

**Keywords:** Agribusiness, Wellbeing, Average Treatment on Treated (ATT)

## Introduction

In lunching the global sustainable development agenda, the United Nations adopted the seventeen Sustainable Development Goals (SDG) of which economic growth resulting in improved living standards as well as promoting wellbeing at all levels is seen as essential to sustainable development for developing countries especially, the priority of maintaining economic and social progress cannot be overemphasized (Ahungwa, Haruna & Abdusalam, 2014). In recent years, scientists and economists have advocated a shift from macroeconomic indicators like the Gross Domestic Product (GDP) to more viable variables that can particularly paint a better picture of people's living standard and the general growth of the economy. According to Rambe and Peter (2021), asserted that one of the failures of using GDP per capita as an indicator of economic wellbeing is that it does not necessarily reflect real perceptions of trends in economic wellbeing of individuals.

According to Oyekale (2011), well-being is a measure of the substance of what is actually good and valuable for an individual or group and what is best in their interest. This definition, therefore, denotes that well-being encompasses economic stability, physical health, mental health, social insertion, and environmental sustainability. It reflects an individual's ability to live a fulfilling life, achieve personal goals, and maintain stability in key aspects of life, including employment, food security, and social relations.

Nigeria's mixed economy is the largest in Africa, and according to Taiwo (2023), Nigeria's GDP stood at USD 440 billion; however, this has not resulted in any significant improvement in the overall well-being and economic prosperity of Nigerians, especially rural farmers. In addition, Akinwumi, et al (2021), asserted that 62.9% which is more than half of the Nigerian population, experience multidimensional poverty higher in rural areas and occasioned by poor standards of living. In most African countries, particularly Nigeria, agribusiness has been a crucial factor in improving wellbeing by increasing food security, enhancing rural development, and reducing unemployment of rural farmers through production, processing, storage, transportation, and marketing to final consumers. These activities provide various employment opportunities at each level (Ahungwa et al, 2014).

Nwibo and Okorie (2020), agribusiness accounted for more than 50% of job opportunities in Nigeria and a large part of the Nigerian economy contributing more than 25% to the Gross Domestic Product (GDP) in 2020 and improving the wellbeing of rural farmers by boosting their agricultural productivity that generate additional income that afford them the financial capability to cater for other needs such as better shelter, education and health service. In addition, agribusiness plays a critical role in poverty alleviation, with smallholder farmers gaining access to markets and supply chains that they otherwise would not have been able to reach.

Furthermore, Irish potato is a crop with major significance; it provides a reliable source of income, food, and employment to many. Given the importance of Irish potato, it is one realistic venture for food security job creation and revenue for farmers which in turn improve their wellbeing (Ogheneuemu et al, 2020). Irish potato production is labour-intensive during planting, harvesting and sorting creating essential employment opportunities which generate income for farmers to improve food security and new technologies. Agribusiness transform farming to a business and brings modern farming inputs into production, Irish potato is an essential raw material for divers product such as frozen product, snacks and dehydrated products. Modern farming input such as fertilizer and the use of machine will boost production and product will gain value through the value chain that will generate high income for improve wellbeing.

Majority of farmers in Mangu Local Government Area of Plateau State lives in rural areas with very poor infrastructures like bad road, making it practically difficult for them to access institutions like financial, educational or health service. Across the country, rural communities are home to about 48% of the population, most of raw materials and agricultural products are sourced from these areas and in fact, rural communities in Plateau State including Mangu LGA is endowed with untapped or underutilized resources, fertile land and wildlife that shaped the identity and foundation for sustainable growth and economic wellbeing (Goyal, 2017). Moreso, with the importance of Irish potato rural farmers in Mangu LGA have continue to experience low productivity, poor patronage and inability to commercialise Irish potato farming despite the presence of agribusiness in some parts of the country.

Despite the numerous importance of agribusiness in improving farmers wellbeing and the favourable climate condition with availability of workforce for Irish potato farming among other staple crops like maize in Mangu Local Government Area of Plateau State it is worrisome to note that farmers have not fared better, farmers are still wallowing in object poverty struggling with high unemployment rate, low productivity, low output, low income that amounted to poor wellbeing (Panwal, 2018). The choice of Irish potato among other crop is

due to the fact that the crop has the capability of generating huge profit due to short time of production. Sinani (2024) noted that the crop has shorter producing period of 3 to 4 months as compare to maize that requires 4 to 5 months this rapid maturity period provide advantage to increase production and generate more income. In addition, the crop has the ability to provide food security with its richness in minerals and vitamin such a profitable crop has been neglected and giving less attention.

The purpose of this study is to investigate the effect of agribusiness on Irish potato farmers wellbeing in Mangu LGA of Plateau State. The second section reviews the theoretical and the conceptualization frame work and existing-based literature. The third section presents the methodology of the study while the fourth section presents the results and discussion while the fifth section concluded and offer recommendations.

## **Literature Review**

### **Conceptual Clarification**

#### **Agribusiness**

Fabricio, Paiva and Karim (2022) defined agribusiness as a complete value chain in agriculture from the raw materials and resources necessary to create biological products to distributors and retailers that get products to end consumers. This implies that the production of agricultural output from its inception including the implements use for production at various stages add value to the output till it reaches the final consumer. Agribusiness is not limited to only crop farming alone, it encompasses abroad spectrum through the agribusiness system which include input supplies, value addition, marketing, entrepreneurship, micro financing and extension.

Samson etal (2021), opined that agribusiness is a term that emanates from the combining of the terms 'agriculture' and 'business.' The term denotes involvement in profitable combinations of forces of food production, marketing, administration and management. This implies that the food system needs to be viewed as an integrated system.

Clement etal (2020), defined agribusiness as the entire agricultural activities that include the production, supply of inputs, processing, transporting and marketing of agricultural and related products, Afolabi (2020), added that the chain involved in agribusiness adds value to the products and thereby increases the net profit. Furthermore, Eko (2019), defined agribusiness as all enterprises derived from and around agricultural production (food production, seed supply, agrichemicals and farm machinery), distribution, processing, marketing and retail sales.

This study adopted the definition put forward by Eko (2019) this definition sees farming as a business which farmers in Mangu local government area of Plateau State will transform Irish potato farming to a modernise farming where the use of agrichemicals and machineries will increase productivity that will improve income and translate to better economic wellbeing for farmers.

#### **Well-being**

Sinani (2022), denote that well-being is the ability of an individual or group of individuals to consistently meet their basic needs including food, housing, utilities, healthcare, transportation and education having control over their income and achieving greater satisfaction with their finances.

Ojedokun et al (2021), opined that wellbeing is a positive outcome that is meaningful for people and for other sectors of the society, it shows that people perceive that their lives are going well having a fundamental and a good living condition which include life satisfaction and feelings ranging from depression to joy.

According to Saxby et al (2017), wellbeing is referred to as quality of life, life satisfaction, flourishing, welfare and happiness. These are all different sorts of concepts with different philosophical and academic research approaches attached to them.

Sonnentag (2015) denote that Well-being is a broad concept that refers to people's evaluations of their lives and to their "optimal psychological functioning and experience". In addition, Sabine (2015), further maintained that Well-being is a broad concept that refers to people's evaluations of their lives and to their optimal psychological functioning and experience.

This study adopted the definition uphold by Sinani (2022) the definition fit farmers in Mangu local government area of plateau state the most as most of them lack the basic needs of life however, adopting agribusiness to transform traditional farming into business will provide farmers with income that will help them to afford the basic needs of living.

### **Theoretical Framework**

In other to achieve the objective of the study, the opportunities-based theory is most relevant to the study. The opportunities-based theory is anchored by Peter Drucker (1985), he asserts that the essence of this theory is the recognition and pursuit of unexploited or underexploited opportunities. Accordingly, entrepreneurship is the pursuit of opportunity beyond controlled resources it is a two-stage process: identifying and creating opportunities, followed by exploiting those opportunities. It emanates from the existence of unmet gaps in the market or along the value chain, which create opportunities (new goods/services/markets/methods), and the capacity of agents including their ability to identify/ recognise those opportunities and link them to own livelihoods, and the courage to take action. There are various opportunities in primary agriculture such as under-utilized crops and agricultural value-adding economic activities amid inherent institutional hurdles for farmers. Many agricultural products are sold raw locally and internationally without much value addition.

In the midst of missing links and gaps along the food value chain, the transaction costs of and barriers to accessing services and mainstream markets are prohibitive for individual smallholders, the lack of agribusiness in smallholder agriculture is due not to irrational behaviour but lack of opportunities.

The theory explained unexploited or underexploited opportunities that are not fully harness by Irish potato farmers in Mangu local Government Area of Plateau State. Agribusiness brings to bare the profitability of Irish potato farming and its immense positive impact on the wellbeing of potato farmers in the local government area. Agribusiness has the potential to transform potato farming into a business and also open unexploited opportunities in the value chain, adding value and fully exploiting the numerous opportunities in Irish potato farming. This will increase farmers productivity through the use of modern machineries and agrochemicals such as fertilizer and herbicide which create more employment opportunities through the value chain. Farmers will earn more income from selling their output and afford the basic needs of life and improving their wellbeing positively.

### Empirical Review

Yusuf, Mbube Yisa and Kolo (2024), conducted research on the assessment of the viability of small-scale Irish potato farming in Jos-South, Plateau State: economic analysis using the Cobb-Douglas production function regression the study revealed a significant relationship between land, labour and fertilizer inputs and Irish potato yield. The study recommended that efficient resources allocation, labour-saving technologies/training and improve credit access to enhance productivity and productivity. However, the study only assess the vaibility of potato farming without the impact of potato farming on the wellbeing of the farmers in jos-South, the current study is poised to invest to investigate the effect of agribusiness on Irish potato farmers wellbeing in Mangu LGA of Plateau State.

Dalapo etal (2023), investigated the impact of agribusiness empowerment intervention on youth's livelihood, the main aim of the study was to investigate whether participation in agribusiness can generate better livelihood outcomes for young farmers. using the sample size of 1435 the study employed regression model to analyse data and it found out that those who participated in agribusiness and its programmes earn higher income by 7% and improved their food security by 75% than non-participant, implying a positive impact on young farmers quality of life especially in increased income, better economic status and poverty reduction among youths. The study strongly suggested programmes focusing on youth farmers agribusiness empowerment particularly along different agricultural value chain should be organize regularly however, the study limits agribusiness empowerment to only the youths but farming especially Irish potato is done by both the youths and the aged in the rural areas. This study intends to expand the study to all those who participate in farming and not limiting it to a group of individual farmers for more robust result.

In a related study on agribusiness and poverty reduction, empirical evidence from Tubah subdivision of Cameroon. Akumbom etal (2023), using partial least-square method of analyse data collected from 93 respondents with the objective of investigating how agribusiness impact in alleviating poverty in tuba region. The result revealed that attitude towards agribusiness and innovation behaviour had a positive effect on poverty reduction in the region. Therefore, the study strongly upholds that attitudes towards agribusiness can be shaped toward encouraging agribusiness through practical education where farmers will be able to turn their farming activities into things they can sell for improve quality of lives. The study gives a grasp on the current study however, the study is limited in number of respondents of 98 which the current study will expand to 364 for robust result and the current study will be carried out in plateau state Mangu local government, a geographical difference with Tubah in Cameroon.

In a related study Cisse etal (2019) investigated the impact of Irish potato productivity on welfare growth of farmer's households in Nigeria. Using regression to analyse the objective which is, how does Irish potato production impact household welfare, the result showed that potato productivity has a positive significant impact on household welfare. The study threw light on impact of potato productivity in transforming farmer's wellbeing but the current study intent to fill the gap of what increase Irish potato production (agribusiness) and also disaggregate Irish potato productivity and farmer's wellbeing and examining the effect of agribusiness on each variable separately.

Yenenesh etal (2018), conducted research on potatoes and livelihoods in Chench, southern Ethiopia. Using descriptive statistics and Log-linear analysis ( $\chi^2$ ), the result showed

changes in agronomic practices and consumption, these changes were most pronounced among wealthy farmers who participated in the intervention and the study therefore concluded that new potato varieties and production practices has had a significant contribution to improving the livelihoods of farmers in the highlands of Chench. It recommended that there is need to broaden the scope of interventions so as to take into account the resources available to farmers in different wealth categories, and the diversity of strategies that they employ for improving their livelihoods. The study is related to the current study in looking at the wellbeing of potato farmer however it fails to provide the strategy or strategies in improving their wellbeing which the current study intends to fulfil by introducing agribusiness and also carried out the research in Nigeria as the study was done in Ethiopia.

Sanusi et al (2017), conducted research on the analysis of potato consumption among households in Odeda Local Government Area, Ogun State, Nigeria. The study had the main aim of investigating the socio-economic factors affecting potato consumption among households in Odeda Local Government Area (LGA), Ogun State. Using the descriptive statistics and regression model, the result indicated that Irish potato market price and price of substitute (yam) were significant at 5 %, and 10 %, respectively, with coefficient of determination ( $R^2$ ) being 0.897; and had a positive relationship with potato consumption in the study area. Thus, recommended that government should attempt to improve the quantity of potato consumed in the Odeda LGA and this would consequently reduce the problem of malnutrition and also contribute to an improvement in household's welfare in the area. The study shed light on the current study in improving household wellbeing however, it fails to examine factor such as agribusiness that can improve farmer's quality of life which this work seeks to fill the gap.

Nwibo, et al (2016) examining the determinants of agribusiness among the rural households of Ishielu local government, using logit regression the result indicated that, most farmers in the local government are male who are within the mean productive age of 46 years and also identify access to credit and loan, minimize tax, availability of market, availability of social amenities and the type of farming system practiced as having influence on agribusiness drive among rural farmers. The study strongly recommended proper information dissemination to rural farmers on how to identify viable agribusiness opportunities. Although the study is much related to the current study in the aspect of rural farmers wellbeing however, the study examined the determinants of agribusiness on household while the current study intended to study the effects of agribusiness on farmers wellbeing and it restricted farming activities only to the male gender and marginalizing the female gender who contribute significantly in Irish potato farming that improve general wellbeing, the current study seek to fill this gap.

### **Gap in the Literature**

This research differs from prior studies in that it examines the effect if agribusiness on Irish potato farmers wellbeing in Mangu LGA of Plateau State (knowledge gap), unlike other studies who investigates on either agribusiness with other concept such as Dalapo, et al (2023) they investigated on the impact of agribusiness empowerment intervention on youths livelihood and Nwibo, et al (2016) they examined the determinants of agribusiness among the rural households of Ishielu local government while other studies were carried out on livelihood Just as in Yenenesh, Conny, Rogier et al (2018) conducted a research on potatoes and livelihoods in Chench, southern Ethiopia. This research aims to close this gap by incorporating the two

concepts agribusiness and wellbeing. Secondly, the study aims to close a methodological gap by employing Average Treatment Effect on the Treated (ATT) which none of the reviewed studies have use as methodology for analyse the enrich existing literatures. The methodology is appropriate for investigating the effect of agribusiness on Irish potato farmers who adopt agribusiness in Irish potato farming and farmers who do not adopt agribusiness in their production in Mangu LGA. Lastly, theory gap, only this study adopted the opportunity-based theory by Peter Drucker (1985), which also make the novelty of the study.

### Methodology

This study's empirical analysis is based on primary data obtained from the field for the year 2025. The instrument used for generating data for the research work is the questionnaire and a total of three hundred and sixty-four (364) respondents were selected using the purposive sampling technique for the study, the choice of Mangu LGA of Plateau State was influence by the fact that the local government area (Mangu), having the largest commercial market in plateau state the market value of potato continue to suffer drastically in terms of low price as compared to other agricultural outputs in the local government and also the presence of Agricultural Service And Training Centre (ASTC) which is not present in other Irish potato producing local government area such as Bokkos LGA yet farmers failed to tap in this opportunities so as to improve their wellbeing.

### Model Specification

To estimate the effect of agribusiness on Irish potato farmers wellbeing in Mangu LGA, this paper utilized the Average Treatment on Treated (ATT). The model is specified as follows:

$$t = \sum(\phi_{1i} - \phi_{0i} / \beta = 1) = \sum(E(\phi_{1i} - \phi_{0i} / \beta) = 1, P_X) \dots\dots\dots(1)$$

$$\rightarrow t = \sum(E(\phi_{1i} / \beta) = 1, P_{(x)} - E(\phi_{0i} / \beta) = 0, P_{(x)} / \beta = 1) \dots\dots\dots(2)$$

Where

$\phi_{1i}$  = Estimated outcome when a respondent is a potato farmer (Treatment groups)

$\phi_{0i}$  = Estimated outcome when respondent is not potato farmer (Control groups).

In equation (1) the parameters are equated to 1 which represent the treatment group who benefits from agribusiness and equation (2), the parameters are equated to 0 meaning the control group who do not benefit from agribusiness

### Test of Validity

Validity test is a fundamental test in primary study as it proposes the extent to which the instrument measures the critical components of the instrument being scrutinized. In this study, it was achieved using content validity index (CVI) outlined by Amin (2005) and stated thus:

$$CVI = \frac{\text{(Number of items declared valid)}}{\text{(Total number of items in the questionnaire construct)}} \dots\dots\dots (3)$$

The result is presented in Table 1

**Table 1: Result of the Validity Test**

S/N	Experts	Number of valid items	Number of Items	CVI	Remark
1	Assessor 1	324	340	0.98	
2	Assessor 2	302	310	0.90	
3	Assessor 3	306	320	0.93	
4	Assessor 4	311	325	0.97	
	Overall			0.95	Acceptable

**Source:** Extracts from Eviews

The findings from table 1 showed the content validity index (CVI) of the study is 0.95. This value is considered valid given the benchmark of 0.7 suggested by Lawshe (1975).

**Test of Reliability**

Reliability test is another important measure of the quality of the measurement of the instrument. Therefore, a measuring instrument is assumed to be reliable if the results provide by the instrument are consistent with the set of variables it planned to measure. In this study, reliability test was achieved using Alpha Crunch method given by the formular:

$$R = \frac{Nr}{1 + r(N-1)} \dots\dots\dots 4$$

Where R = Alpha crunch method, N = Number of items in the scale, r = the mean of the inter item correlation. The reliability test value lies between 0 and 1. The value of 0 signifies no reliability and 1 suggests very high reliability. Nevertheless, Hinton, etal (2005) reliability test value above 0.75 is generally accepted as highly reliable. The test of reliability for this study is presented on table 2

**Table 2. Result of Reliability Test**

S/N	Question construct	Reliability test	Number of items	Remark
1	Demographic Information	0.84	12	Reliable
2	Agribusiness and Irish potato farmer’s unemployment	0.89	7	Reliable
3	Agribusiness and Irish potato farmer’s productivity	0.84	5	Reliable
5	Agribusiness and Irish potato farmer’s wellbeing	0.79	5	Reliable
	Overall average	0.85	34	Reliable

**Source:** Extracts from Eviews

The findings from table 2 shows that on average, Alpha crunch test of reliability carried out on thirty-four (34) items of the questionnaire’s construct is 0.85. The finding implies that the instrument for data collection is not only reliable but robust enough for estimations.

To ascertain the demographic profile’s suitability of the study’s respondents, the demography characteristics of the respondents as outlined in the instrument of the study were analyzed and presented on table 3 thus:

**Results and Discussion****The Demographic Characteristic of the Respondents****Table 3: The Demographic Characteristic of the Respondents**

S/N	Question	Response	Frequency	Percentage
1	Age	Below 20	5	1
		20-30	198	55
		31-40	100	28
		41-50	31	9
		51-60	16	4
		61 and above	10	3
		<b>Total</b>	<b>360</b>	<b>100</b>
2	Marital status	Single	62	17
		Married	216	60
		Divorced	82	23
		<b>Total</b>	<b>360</b>	<b>100</b>
3	Years of experience in Irish potatoes agribusiness	Less than 4 years	11	3
		5- 10 years	41	11
		11- 14years	79	22
		14 years and above	229	64
		<b>Total</b>	<b>360</b>	<b>100</b>
4	Income before engaging in Irish potatoes agribusiness	Less than 100,000	213	59
		100,000-400,000	93	26
		400,000-600,000	26	7
		600,000-800,000	10	3
		800,000-1,000,000	18	5
		<b>Total</b>	<b>360</b>	<b>100</b>
5	Income after engaging in Irish potatoes agribusiness	100,000 – 200,000	29	8
		300,000 – 400,000	35	10
		500,000 – 600,000	87	24
		700,000 – 800,000	96	27
		900,000 and Above	113	31
<b>Total</b>	<b>360</b>	<b>100</b>		
5	Gender	Male	300	83
		Female	60	17
		<b>Total</b>	<b>360</b>	<b>100</b>

6	Level of Education	None	11	3
		Primary	89	25
		Secondary	210	58
		Tertiary	51	14
		<b>Total</b>	<b>360</b>	<b>100</b>
7	Number of employees hired	Less than 4 employees	11	3
		5- 10 employees	41	11
		11- 14 employees	79	22
		15 and above employees	229	64
		<b>Total</b>	<b>360</b>	<b>100</b>
8	Hectares of land cultivated	Less than 3 hectares	31	9
		4- 8hectares	101	28
		9- 13 hectares	175	49
		14 and above hectares	53	15
		<b>Total</b>	<b>360</b>	<b>100</b>
9	Irish potatoes yield per hectare (tons)	Less than 100 tons	29	8
		100-400 tons	35	10
		400-600 tons	87	24
		600-800 tons	96	27
		800-1,000 tons	113	31
<b>Total</b>	<b>360</b>	<b>100</b>		

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#### Extracts from Eviews

The result on Table 3 shows that for the age distribution of the 360 respondents, 1% were below the age of 20, 55% between 20-30 years, 28% between 31-40 years, 9% between 41-50 years, 4% between 51-60 and 3% were 60 and above. The age distribution of the respondents suggests that majority of the farmers in Irish potatoes agribusiness in Mangu L.G.A are youth. The implication of this finding is that if the Irish potatoes business is not improved to enhance productivity and the farmers' welfare, the prevailing conflict situations in Mangu local government area will grow worse as youths become a handy tool ready to be deployed.

According to marital status, 17% were single, 60% were married and 23% were divorced. This implies that the majority of those who engage in Irish potatoes agribusiness are mainly their household means of livelihood, thus, the improved productivity and sustained Irish potatoes farming should be of concern to the Mangu local government area authorities. Among the respondents, 3% has less than 4 years of experience in Irish potatoes agribusiness, 11% have 5- 10 years of experience in the business, 22% have 11- 14 years of experiences while 64% have 14 years and above experience in Irish potatoes agribusiness. The implication of this finding to the study is that most of our respondents have outstanding years of experience in Irish potatoes agribusiness, and these overtly add to the robustness of the

study's estimations. In terms of income before and after engaging in Irish potatoes agribusiness, 59% respondents were on least income level before engaging in the business, the highest percentage of the respondents 31% were on the peak income level after engaging in the business. This implies that majority of Irish potatoes agribusiness income improved following the engagement in the business. Thus, since improved income is synonymous to improved wellbeing, it means also that their wellbeing improved following their engagement in Irish potatoes agribusiness.

On the gender distribution of the respondents, 83% were male while 17% were female. This brings to the fore gender disparity in Irish potatoes agribusiness in Mangu L.G.A. This finding is not surprising as Irish potatoes farming require much energy making it more of masculine business. The respondents with Tertiary educational qualification were 14%, secondary education was 58%, primary education was 25% and those with none-educational qualification were 3%. The implication of this finding is that majority of the Irish potatoes farmers in Mangu are either illiterate or semi-illiterate and may not possess requisite certificate for a white-collar job and thus, if Irish potatoes agribusiness is not improved to enhance both productivity and welfare, Plateau state authorities may lose their loyalty which may result to militancy. The responses on the number of employees hired, hectares of land cultivated, and Irish potatoes yield per hectare (tons) suggests that Irish potatoes farming is not only productive but one of the major employers of labour in Mangu local government area.

### Correlation Coefficient Matrix Result

**Table 4: Result of Correlation Coefficient Matrix**

Variable	Agribusiness	Wellbeing
Agribusiness	1.00	
Wellbeing	0.053*	1.00

Extracts from Eviews

The correlation coefficient matrix was conducted to ascertain whether significant relationship exists between agribusiness and wellbeing at 1% and 5% level of significant respectively. The result showed positive correlation between agribusiness and Irish potatoes farmer's wellbeing.

### Average Treatment on Treated

Average Treatment on Treated (ATT) measures the wellbeing effect, the t – statistics measures the extent of the statistical significance of such effect. The result of ATT is shown on table 5

**Table 5: Result of ATT Estimation**

No. of treatment	No. of control	ATT	Std error	t-statistics
345	15	3708	1578.9	2.35

**Source:** Extracts from Eviews

The result on Table 5 shows that given that the coefficient of ATT is positive and the t – statistics (2.35) is greater than two (2), it clearly demonstrates that benefiting from agribusiness have significant positive effect on Irish potatoes farmers wellbeing at 5% level of significance. The average treatment on treated (ATT) shows the mean difference in wellbeing index between treated and control groups.

### **Discussion of the Findings**

To investigate the effects of agribusiness on Irish potato wellbeing in Mangu L.G.A of Plateau state, average treatment effect on treated was utilized. The findings from the estimation demonstrates that benefiting from agribusiness have significant positive effect on Irish potatoes farmers wellbeing at 5% level of significance in Mangu L.G.A of Plateau state. This finding also confirmed the findings of Cisse, etal (2019), Dalapo, etal (2023) and Akumbom, etal (2023) who found out that those who participated in agribusiness and its programmes earn higher income and improved their food security implying a positive impact on young farmers quality of life especially in increased income, better economic status and poverty reduction.

### **Conclusion and Recommendations**

The study examined the effect of agribusiness on Irish potato farmer's wellbeing in Mangu LGA showing how agribusiness and farmer's wellbeing interact. The findings emphasize the importance of agribusiness in enhancing Irish potato farmers in Mangu LGA of Plateau State. The numerous significances of agribusiness in creating jobs opportunities along the value chain reduce unemployment and increase farmers income which enable them to improve their wellbeing as poor wellbeing has negative impact on productivity. More so, with the favourable climate in Mangu LGA in the state, it supports Irish potato production so adopting agribusiness into Irish potato production farmers will witness boost in production and improve wellbeing as shown in the result to have a positive significant effect on farmers wellbeing.

Finally, since agribusiness has a positive effect on Irish potato farmers wellbeing in Mangu LGA, farmers should come together and form group and raise funds to buy improved seeds, the local government council chairman through the department of agriculture in the LGA should collaborate with Plateau State ministry of agriculture to provide extension service workers to educate farmers on the importance of agribusiness so as to improve potato productivity. In educating farmers on agribusiness modern and improve farm inputs be provided to farmers at a subsidise and affordable rate.

In addition, soft loans and grants be provided to farmers with long term payment duration to enable them access modern farm implement, this will improve potato yield and also, the plateau state government should collaborate with the bank of industry to provide firms that will process Irish potato output into finish or semi-finish goods this will add value and generate more income to farmers and in turn improve their wellbeing in the local government area.

Finally, the study was limited by some farmers inability to give information regarding the effect of agribusiness on their wellbeing while other found it difficult to read and answer questionnaire, time and financial resources was also a constraint in the course of the study. The study suggest a comparative analysis of the impact of agribusiness on farmers wellbeing in Mangu LGA and Jos-South LGA as both are with Plateau State and produce Irish potato.

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