



VALUE ADDITION CHALLENGES AMONG SMALL-SCALE TEA FARMERS IN SARDAUNA LOCAL GOVERNMENT AREA OF TARABA STATE, NIGERIA

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Abstract

This research work analysed value addition challenges among small-scale tea farmers in Sardauna Local Government Area of Taraba State, Nigeria. It specifically looked at the value chain activities of the small-scale tea farmers, factors influencing tea value addition, sources of information and constraints to addition of values to tea. A multi-stage sampling procedure was used to select 110 respondents for this study. Primary data were collected using structured questionnaire. Data were analysed using frequency distribution, percentage, mean, standard deviation and Probit regression. The results revealed that the major value addition activities (Production) undertaken by the respondents were land preparation (89.1%), tea planting (88.2%), tea pruning (87.3%) and pest and disease control. Also the major value addition activities (Processing) undertaken by the respondents were storing tea leave (81.8%), drying of tea leave (80.9%), oxidation and steaming (79.1%) and harvesting (73.6%). Factors influencing tea value addition among small-scale tea farmers are household size and extension contact. The majority of tea farmers (45%) got their information from family and friend. Lack of tea processing ($\bar{x} = 2.7000$), lack of finance ($\bar{x} = 2.6182$), low market demand ($\bar{x} = 2.5455$), low yield ($\bar{x} = 2.5364$) and high cost of transportation ($\bar{x} = 2.4364$) were major problems hindering tea value addition. There is need by Stakeholders to embark on ways and means that would empower tea farmers through the provision of modern equipment and infrastructure through cooperative formation by pooling resources together than waiting on government to achieve their goals.

Keywords: Value Addition, Challenges, Small-Scale Tea Farmers

Introduction

The concept of value addition in agriculture in the developing economies is widely becoming an acceptable strategy adopted by both government and non-governmental organisations towards improving the income generation of the rural communities. The former trend in which rural farmers disposed-off their farms produce without processing seemed to drastically reduce the incomes realisable through such transactions (Adewale, 2019). The practice further impoverished the farmers at the instance of the middlemen, as most of them could not raise enough capital to carter for or re-engage in the next cropping season. This is coupled with the technological advancement and intensifying global competition in the agricultural industry which is fast transforming from the production of low quality bulk commodities sold in undefined markets to production of improved variety crops sold in specialised markets. Izaba (2021) summed up the essence in a sentence: Apart from improving the profit potentials of participants (farmers), value-addition in agriculture offers entrepreneurial farmers an opportunity to identify and pursue new crops and new markets.

Jacob *et al.* (2023) described value addition as the series of exertion necessary for transforming a product or services before delivery to the final consumer. Value addition is the process where producers, processors as well as the consumers operate in ways that maximizes the value of product or services. It can also be defined as a chain of successive activities aimed at increasing the value of a product. The farm and all the intermediary procedures constitute the agricultural sector value addition. However, Oghenejoboh *et al.* (2021) observed that the practice of value addition among small scale farmers is still relatively low in Nigeria. Indeed, the enormous potential of the various tea value added by-product and the increase in farmer's income resulting from value addition has not been fully utilized. Oyewole and Eforuoku (2019) identified, among others, weak linkage between market actors which delay harvested tea from reaching the processors on time, weak extension services, and lack of access to credit facilities, poor efficiency of processing enterprises and non-commercial orientation, as systemic constraints inhibiting growth in the sector. Numerous studies (Mary and Oluyole, 2021, Oluyole *et al.* 2017, Oluyole *et al.* 2022; and Mary and Akanni, 2021) abound on tea value addition, however, they focused on tea processing, with little or no emphasis on tea value addition. Also, in the study area, studies such as Ndagi (2023) and Oluyole *et al.* (2019) investigated the analysis of processing tea, and the adoption of improved tea production and processing technologies respectively. The foregoing makes it imperative to investigate value addition challenges among small-scale tea farmers in Sardauna Local Government Area of Taraba State, Nigeria.

In Sardauna Local Government Area of Taraba State, Nigeria, small-scale tea farming represents a significant source of livelihood for many rural households. Despite the region's favorable climatic conditions and the increasing global demand for tea, small-scale tea farmers continue to face substantial challenges that hinder their ability to add value to their products. Value addition is crucial not only for improving the income of farmers but also for enhancing the overall sustainability of the tea industry in the region (Ogunwolu *et al.*, 2023).

Currently, many small-scale tea farmers engage primarily in the production of raw tea leaves, which are then sold to larger processors at relatively low prices. This lack of processing and branding limits their profitability and exposes them to market fluctuations. Furthermore, small-scale farmers often lack access to essential resources such as modern processing technologies, financial capital, and training in value addition techniques. The absence of cooperative structures also exacerbates these issues, making it difficult for farmers to pool resources and collaborate on value addition initiatives (Mary Oladokun & Oluyole, 2021).

Additionally, the challenges posed by inadequate infrastructure, such as poor road networks and limited access to markets, further complicate the situation. Farmers also face difficulties in meeting quality standards and regulatory requirements for processed tea, leading to reduced competitiveness in both local and international markets (Ndagi, 2023).

The broad objective is to examine the value addition challenges among small-scale tea farmers in Sardauna Local Government Area of Taraba state, Nigeria. The specific objectives are to;

- i. identify the value chain activities of the small-scale tea farmers;
- ii. identify the sources of information of the small-scale tea farmers;
- iii. determine the factors influencing tea value addition among small-scale tea farmers; and
- iv. Identify the constraints to values addition of small-scale tea farmers.

LITERATURE REVIEW

Conceptual Framework

The conceptual framework in this study examines the relationship between the decision of tea farmers to add value and the consequent outcome of such a decision (see Figure 1). The decision to add value within their tea production system is determined by a number of variables. On the one hand, these variables influence the productivity of farmers; however, we are interested in how these variables determine productivity through value addition as an intervening factor. These variables include the socio-economic characteristics of the farmer;

institutional and macroeconomic environment in which the farmer is operating; crop characteristics; and the initial goal of the farming enterprise. The farmers' socio-economic characteristics include age, gender, level education, and years of experience. These factors may be inherited, or influenced by other external forces, and they dictate the responsibilities of farmers within their productive systems. Institutional and production constraints define the environment within which farmers carry out their productive activities. These include access to credit, extension contact, and macroeconomic policies which serve as catalyst to the enterprise development of the farmers. Farming system/crop characteristics determine to a large extent how much value addition can be carried out. In this study, the versatility of tea biomass increases its value adding potential. Overall, it is expected that the decision to add value and the extent of value addition will lead to positive outcomes (such as increased income and productivity)

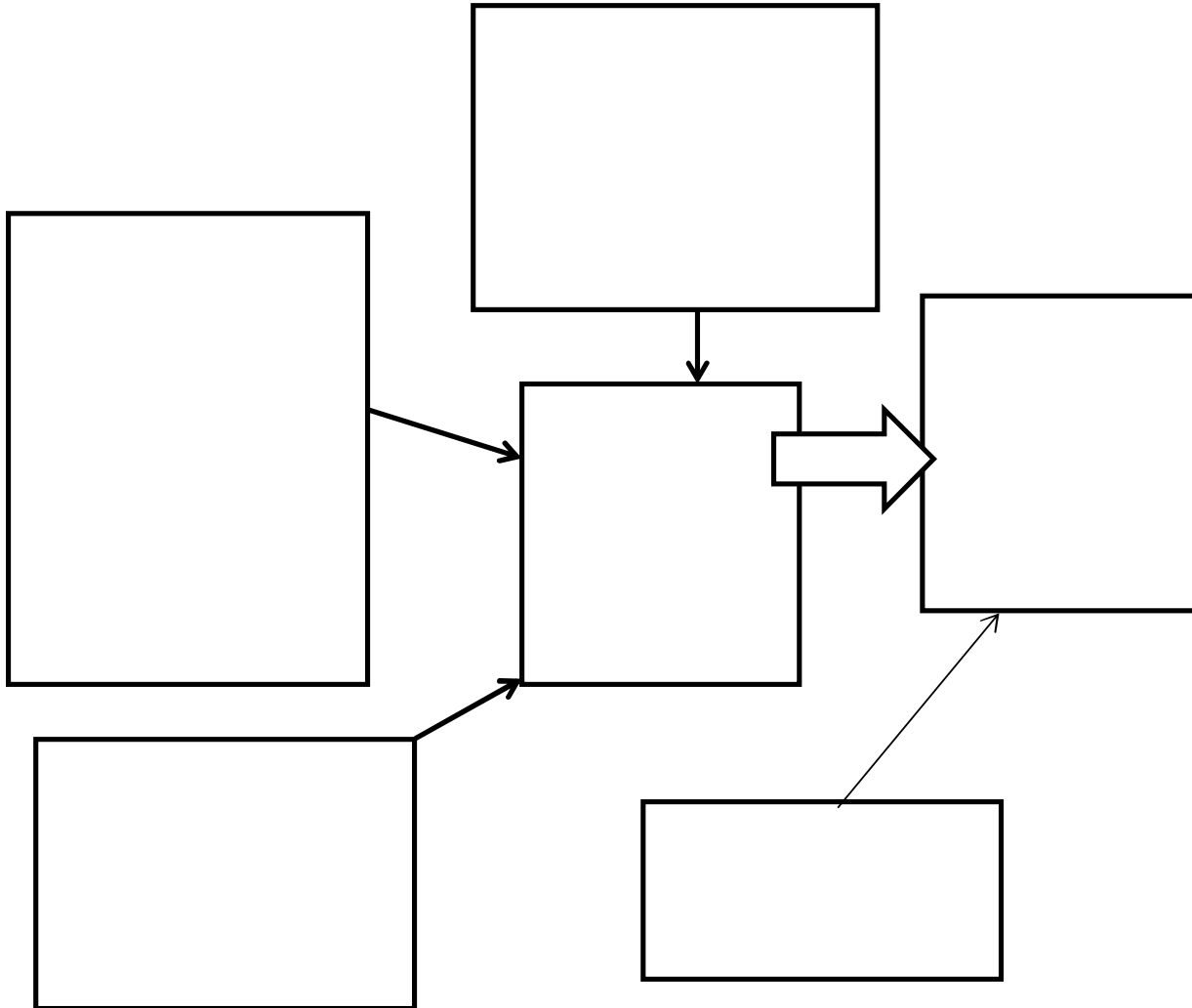


Figure 1: conceptual framework of value addition challenges among small-scale tea farmers, Sources: Researcher Design

Theoretical Framework

The basis for decision making in agricultural households was modeled by the agricultural household model of (Grando et al., 2020). In the model, the agricultural household is seen as a production, consumption, and labour entity in a bid to maximize expected utility. According to Ityokumbul et al. (2020), farming household decisions can be explained in three theoretical models, the peasant profit-maximizing model, utility maximizing theory, and

the risk-averse theory. While the profit maximizing theory examines peasant farmers' production choices from the point of allocative efficiency of the farming household in the 'small but efficient' hypothesis of (Schultz, 1966); the utility maximizing theory explores decision making of the farming household as a family and a business. In effect, it examines how farming households make production and consumption decisions subject to some constraints. The risk-averse theory, on the other hand, encompasses the risk behaviour of the farming households in decision making. The theory is related to the 'safety first' model in risk studies.

Although farming household decision could be modeled through any of these three approaches, the theory of profit maximization has been reviewed to give way to the other two theories. The basis of the profit maximization theory rests solely on allocative efficiency, where only the profit outcome is modeled without the input of the farm household decision making process. In reality, this does not work for farming households, hence the need for alternative models where the decision process of the farm family is modeled along with the expected outcome. On this basis, farming households make production decisions, such as value addition, diversification of portfolio, off-farm work, cropping pattern etc. based on either expected utility of consumption/income streams (utility maximization theory) or expected utility in the face of risk as a means of self-preservation (risk-averse theory). The utility maximization theory was specifically inferred in this study. In the utility maximization household decision-making theory, the farming households are seen as both household and enterprise. Hence, production and consumption (welfare) decisions are subsumed in the model. The theory postulates that households seek to maximize utility subject to a set of constraints. These constraints include income constraints, production constraints, and time constraints. In this paper, we model the household decision to participate in value addition as premised on the need to realise the expected utility of welfare (income from value-added production) subject to these constraints.

The decision of a farm entrepreneur to invest or participate in an economic activity is best described by the Expected Utility Theory (Meyer 2002). In this theoretical framework, farmers as Decision Making Units (DMU) choose between uncertain prospects by comparing expected utilities from each prospect. The outcomes of these choices will thereafter be seen in improved welfare, income, or productivity. Hence for the present study, the decision to add value within tea production systems will be realized if and when the expected utility for value adding production is greater than the utility for not adding value in the production systems.

Value Addition Theory

Value-added theory is a complex analytic framework that seeks to reveal the forces that drive collective actions in social systems. The theory identifies the social conditions (referred to as determinants of collective action) within societies that contribute to the occurrence and outcomes of such actions. The latter are broadly defined and encompass collective behaviors such as social movements, militias, religious cults, riots, and the like. The main premise of value-added theory is that each determinant must be present for a collective action to occur and through a value-added process each determinant increases the likelihood of a collective action occurring and being effective (van Zomeren, 2024). The name "value-added" originated from the theory's attempt to explain how a collective effort iteratively gains value at each stage of progression up to its issuance as collective action. According to van Zomeren (2024) Value-added theory derives from Neil J. Smelser's (1962) book, *Theory of Collective Behavior*. The theory is structural-functionalist in orientation, meaning that "things" exist or occur in social systems to serve a societal function or benefit a society. Tabassum (2022), influenced by the work of Georg Simmel and Talcott Parsons, saw societies as dynamic social systems that are ordered by mechanisms of stability and instability. Collective actions bring stability to a social system in which contradictions (internal and external) have created instability (van Zomeren, 2024). Contradictions are strains or tensions. Collective actions (specifically referred to as "collective seizures") serve as the mechanisms for releasing strains or tensions. Karitu and Muathe (2023) defined collective action as "uninstitutionalised mobilization for action in order to modify one or more kinds of strain on the basis of a generalized reconstitution of a component of action". Therefore, collective actions occur to release strain and/or benefit those who seek to change the values, norms, roles, or situational facilities in a social system.

Value-added theory states that collective actions are the response to a strain (or multiple strains) in a system. Strain is a core concept in the theoretical framework. In fact, some refer to the theory as “strain theory.” Whereas other theories of collective action seek to objectively measure the sources of strain via indicators such as individuals’ social economic status, value-added theory is more concerned with understanding how individuals interpret their situations (Crossley, 2002). Ghosh and Garada (2024) claimed that strain occurs when a group of people experience stress, tension, or anxiety from a situation that violates their expectations of what is acceptable or just.

Importantly, Ghosh and Garada axiological orientation and symbolic interactionist approach (Blumer, 1986) led to the postulation that strain is more a matter of how individuals interpret situations than of whether strain exists in reality. Thus, Ghosh and Garada believed it was necessary for the analyst of a collective action to see the social behavior from the participants’ perspective. He reasoned that participants in a collective action see their behavior as reasonable and logical because their definitions and expectations of what is considered acceptable social behavior are socially constructed, inter-subjective, and influenced by the social context (Crossley, 2002). When a group of people experience more and more strain, notwithstanding the significance or duration of the strain, the more likely it is that a collective action will ensue. Yet, strain alone does not lead to collective action. There are several other determinants that are necessary for collective action to occur. However, to understand collective action, Ghosh and Garada argued it is first necessary to understand what drives social behavior.

Consumer Behavior Theory in Value Addition

The TCV provides an understanding of the fundamental drivers behind an individual’s choices via the lens of consumption values. These values are consumers’ perceived utility of a product or service in terms of its performance, association with a social group, capacity to arouse emotions or curiosity, novelty and compatibility in different circumstances. Sheth et al. (1991) noted that the unidimensional conceptualization of value rarely explains the multidimensional nature of consumer behavior: consumers’ judgments depend on numerous functional and non-functional components (Peng et al., 2014). Hence, Sheth and colleagues proposed the TCV by including five core values: functional, emotional, social, epistemic and conditional. Accordingly, TCV is well-recognized for explaining consumers’ inherent reasons for buying (vs. not buying) a product or service.

The TCV has three fundamental propositions:

- i. consumer behavior is a function of five consumption values,
- ii. all five consumption values are independent of each other and perceived at an individual level and
- iii. They have different contributions in different purchase situations (Gonçaves et al., 2016).

This implies that one individual may purchase a specific mobile phone to conform with other individuals within its reference group (i.e. social value), while another may buy it for its long battery time (i.e. functional value) (Ramkissoon et al., 2009). However, the TCV is criticized for its narrow approach, as it is mainly used to examine the effect of consumption values on just choice behavior (i.e. intention to buy something). Consumers’ responses to consumption values can manifest in various outcomes, including satisfaction and attitude (Tanrikulu, 2021). Thus, the present study also accounts for the influence of consumption values on diverse behavioral outcomes, namely intention, satisfaction, attitude and overall value perception.

Research exploring the relationship between consumption values and behavioral outcomes has reported mixed findings. Some studies indicate that all consumption values influence consumers’ responses positively and significantly (e.g. Du et al., 2021; Mohd Suki et al., 2022), although this positive effect is not present transversally in all the TCV-based studies. As relevant examples, Khan and Mohsin (2017) reported no significant effects between functional value and green choice behavior. Omigie et al. (2017) found that social value does not influence consumer choice behavior of mobile services. Rahnama and Rajabpour (2017) revealed that conditional value does not significantly influence consumer choice of dairy products. Finally, Moon et al. (2021) also found

emotional value to be one of the main obstacles to the transition toward more environmentally friendly behavior. Thus, it is clear from the literature that findings are mixed and conflicting, rendering it challenging to ascertain the actual influence of consumption values on consumer behavior. Despite the contradictory findings, we follow the theoretical proposition of the TCV to argue that consumption values positively and significantly influence consumer behavior.

Materials and Methods

This study was conducted in Sardauna Local Government Area of Taraba State. It is located between latitude 6° 43' and 7° 15' to the north and longitude 11° 15' and 12° 30' east of the Greenwich Meridian as shown in figure 3. Situated at an elevation of 1,348 meters above sea level, it is among the high elevated towns in Nigeria. It has a total land area of about 3,885km² and the area has an estimated population of 224,437 and the present projected population of 2022 is 352,900 (Taraba State Dairy, 2023). The area has mountainous vegetation characterized with short grasses and forest scattered all over the place. Temperate crops such as tea, coffee, pea, banana, plantain, Irish potatoes, pepper, pineapple as well as vegetables (Kumbi) are grown on the plateau (Taraba State Dairy 2023). The climate of the study area is marked by dry and wet season. The wet season starts in March and ends in October. It has an average annual rainfall of between 1,866mm to 3000mm. The dry season starts in November and ends in February with a temperature variation between 15° c to 20° c. (Taraba State Dairy, 2023). The local government is bounded by Gashaka Local Government in the North-Eastern part, Kurmi Local Government to the West and Cameroon republic to the East and South. Majority of inhabitants of the local government area engage in farming as an occupation. Most of the tribal spread within the area includes Fulani, Mambilla, kaka, Panso, Kambu among others. The basic amenities available are hospital, rural electricity, schools among others. (Taraba State Dairy, 2023).

Multi-stage sampling procedures were used to select respondents for this study. In the first stage three (3) wards out of eleven (11) was purposively selected from Sardauna Local Government Area i.e. Kakara, Nguroje and Mayo-kusuku based on the intensity of tea production in the area. In the second stage, in each ward, two (2) villages were selected using simple random sampling. Third stage, Snowball techniques were used in the sampling of 18 from each selected villages, making a total of 110 respondents for the study. The data for this study were collected from primary sources.

The data for this study were subjected to analysis using percentages, mean, frequency, and Probit regression model. Descriptive statistics such as mean, frequency, percentage and standard deviation was used to analyze data on value chain activities of the small-scale tea farmers, the information source of the small-scale tea farmers and the constraints to addition of values to tea by the small-scale tea farmers. Probit regression model were used to analyze data on factors influencing tea value addition among small-scale tea farmers.

Probit analysis equation is expressed in Exponential explicit model form;

$$\ln Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + b_{13}X_{13} + b_{14}X_{14} + U$$

Where

ln = natural logarithm

b₀ = constants

U = error term

X₁ = Sex

X₂ = Age

X₃ = Household Size

X₄ = Education Level

X₅ = Farm Size

X₆ = Year Experience

X₇ = Membership of Association

X₈ = Access to Credit

X₉ = Contact to extension agent

Dependent variable (Y) = Value addition (dummy)

X₁ to X₉ = Independent Variables

Results, Discussion, and Conclusions

Tea Value Addition Activities of Small-Scale Tea Farmers

Table 1 shows the tea value addition activities performed by the respondents. The results indicate that the primary value addition activities related to production included land preparation (89.1%), tea planting (88.2%), tea pruning (87.3%), and pest and disease control. In terms of processing, the key activities were storing tea leaves (81.8%), drying tea leaves (80.9%), oxidation and steaming (79.1%), and harvesting (73.6%). Additionally, the marketing aspect of value addition was highlighted through the packaging of the tea product. These findings suggest that tea farmers are actively engaged in various activities that enhance the value of their tea products. This aligns with the findings of Jibrin et al. (2021), which noted that farmers in Ondo State engage in similar value addition efforts.

Table 1: Tea Value Addition Activities Small-Scale Tea Farmers

Tea Value Addition Activities	Frequency	Percentage
Tea production		
Land preparation	98	89.1
Tea planting	97	88.2
Tea Transplanting	90	81.8
Post-planting care	93	84.5
Tea Training	93	84.5
Weeding	93	84.5
Pest and Disease Control	95	86.4
Tea Pruning	96	87.3
Tea Processing		
Harvest	81	73.6
Steaming	87	79.1
Shaping	78	70.9
Oxidation	87	79.1
Drying	89	80.9
Storing tea leaves	90	81.8
Tea Marketing		
Packaging	93	84.5

Source: Field survey, 2024

Sources of Information of the Small-Scale Tea Farmers

Table 2 demonstrates that a significant portion of tea farmers (45%) obtain their information from family and friends. This suggests that many farmers are not heavily relying on scientific information for their farming practices, despite having access to extension agents. Additionally, 25% of tea farmers turn to mass media for information, highlighting its role as a crucial source of knowledge. In Nigeria, mass media, particularly radio, is one of the quickest ways to disseminate information to farmers and promotes the adoption of improved agricultural practices. Furthermore, 16% of farmers received information related to tea value addition from extension agents. These findings align with those of Dhehibi et al. (2020) and Anaglo et al. (2020), which indicate that fellow farmers, radio, and agricultural extension agents are the primary sources of agricultural information for farmers surveyed in Imo and Oyo States.

Table 2: Sources of Information of the Small-Scale Tea Farmers

Sources of Information of the Small-Scale Tea Farmers	Frequency	Percentage
Friends and family members	49	44.5
Religious and Traditional Leaders	10	9.1
Mass Media (Radio, Television, Newspaper, Magazines)	25	22.7
Extension agents	18	16.4
Cooperative groups.	8	7.3

Source: Field survey, 2024

Factors Influencing Tea Value Addition among Small-Scale Tea Farmers

The results of the probit regression indicate an R-squared value of 0.7134, suggesting that approximately 71% of the variations in dependent variable is explained by the explanatory variables included in the model. This indicates a significant improvement in model fit compared to an empty model (one without independent variables). Furthermore, the p-value is highly significant (p-value = 0.0000), highlighting the presence of factors that influence value addition among small-scale tea farmers in the study area.

The coefficient for household size was 1.5875, which is both positive and statistically significant ($P > 0.05$), indicating that larger household sizes positively affect value addition in tea production. This influence may stem from the greater labor requirements associated with tea value addition activities. These findings are consistent with the research conducted by Eze et al. (2022), which also found a positive correlation between household size and the level of value addition.

Additionally, the coefficient for extension contact was 5.5932 and was statistically significant at the 5% level. This suggests that tea farmers who maintain more frequent contact with extension agents are more likely to adopt advanced tea value addition technologies compared to those who have less interaction. The increased interaction likely equips farmers with vital information about how to enhance their raw farm outputs, enabling them to create more consumer-ready products. These findings align with the results reported by Idris et al. (2023).

Table 4.1: Factors influencing tea value addition among small-scale tea farmers

Variable	Coefficient	Std. Error	Z-Statistic	Prob.
Constant	0.3489	1.9940	0.1754	0.8611
Sex	0.1125	0.6672	0.1687	0.8661
Age	-0.0390	0.0362	-1.0767	0.8661
Marital Status	0.0480	0.0576	0.8327	0.4050
Household Size	1.5875	0.6556	2.4216	0.0155**
Education Level	0.0145	0.0723	0.2002	0.8413
Primary Occupation	-0.0308	0.0801	-0.3840	0.7010
Farm Size	-0.1546	0.2670	-0.5789	0.5627
Land Acquisition	2.2330	2.5500	0.8760	0.3810
Year Experience	-2.2662	2.4655	-0.9192	0.3580
Membership of Association	-1.7049	1.6745	-1.0181	0.3086
Sources of Capital	-0.6206	0.6092	-1.0184	0.3085
Annual Income	2.70E-07	4.87E-07	0.5550	0.5786
Access to Credit	-0.5334	1.5521	-0.3437	0.7311
Contact with extension agent	5.5932	2.1361	2.6183	0.0088***
R-Squared	0.7134			
Adj. R-Squared	0.8455			
Prob.	0.0000			

Source: Field survey, 2024

Constraints to Tea Values Addition among Small-Scale Tea Farmers

The constraints limiting tea value addition among small-scale farmers was investigated and the result presented in Table 2. Table 2 shows that in descending order of magnitude, Lack of Tea Processing (\bar{x} = 2.7000), Lack of finance (\bar{x} = 2.6182), Low market demand (\bar{x} = 2.5455), Low Yield (\bar{x} = 2.5364) and High cost of transportation (\bar{x} = 2.4364) were perceived by the tea farmers as major problems hindering tea value addition. This study lends credence to Ejechi (2023) assertion that farmers were mostly resource poor and generally lack adequate capital and access to credit facilities with which to procure equipment and other necessary inputs that will aid value addition.

Table 4.2: Constrain to Tea Values Addition among Small-Scale Tea Farmers

Constraints	Mean	Std. Deviation
Lack of Tea Processing	2.7000	.46035
Lack of finance	2.6182	.52431
Low market demand	2.5455	.50021
Low Yield	2.5364	.65912
High cost of transportation	2.4364	.56710
Lack of fertilizer/pesticide	1.9636	.76539
Pest Infestation	1.9364	.70746
Labour Shortage	1.8273	.74018
Lack of access to market	1.8000	.76386

Source: Field survey, 2024

Based on the findings of this study, a conclusion can be drawn that land preparation (89.1%) for tea planting (88.2%), tea pruning (87.3%), pest and disease control, storing tea leave (81.8%), drying of tea leave (80.9%), oxidation and steaming (79.1%) and harvesting (73.6%) were value addition activities undertaken by small-scale tea farmers. Factors influencing tea value addition among small-scale tea farmers are household size and extension contact. The major sources of information of small-scale tea farmers are from family members and friend and lack of tea processing, lack of finance, low market demand, low yield and high cost of transportation were the major problems affecting tea value addition.

Based on the findings from this research work, it is recommended that:

- i. Stakeholders can sensitize each other to embark on ways and means that would empower tea farmers through the provision of modern equipment and infrastructure or purchased through cooperative formation knowing that they stand to achieve their goals by pooling resources together than waiting on governments intervention.
- ii. Tea business can bring about economic development in Taraba State and Nigeria as a whole if government at various levels can put in place intervention programmes to overcome the low market demand and lack of finance.
- iii. State and local governments as well as stakeholders should collaborate in the provision of good road to reduce the cost of transportation in the area.

References

Adewale, A. B. (2019). Evaluation of the Involvement of Farmers in the Poultry Value-Chain in Ibadan Metropolis of Oyo State, Nigeria.

Anaglo, J. N., Antwi, G., Manteaw, S. A., & Kwapong, N. A. (2020). Influence of agricultural information sources on the practices and livelihood outcomes of cassava farmers in Eastern Region of Ghana.

Dhehibi, B., Rudiger, U., Moyo, H. P., & Dhraief, M. Z. (2020). Agricultural technology transfer preferences of smallholder farmers in Tunisia’s arid regions. *Sustainability*, 12(1), 421.

- Ejechi, M. (2023). Determinants of Value Addition among Smallholder Sweet Potato Farming Households in Ebonyi State, Nigeria. *FUDMA Journal of Agriculture and Agricultural Technology*, 9(3), 105-112.
- Izaba, O. F. R. (2021). *Value-added Strategies in the Specialty Crop Industry: Exploring Farmers' Drivers and Strategies at the Farm Level* (Master's thesis, Purdue University).
- Jacob, A., Adam, S. U., & Fausat, A. F. (2023). Effects Economic of Cassava Value Addition on the Income Of Small Scale Farmers in Oshimili North, Delta State, Nigeria. *Journal of Arid Zone Economy*, 1(2), 89-102.
- Jibrin, S., Abdullahi, A., Mohammed, Y., Umaru, A., & Ayegbusi, O. (2021). Analysis of Factors Affecting Adoption of New Cocoa Farming Techniques in Ondo State, Nigeria.
- Mary Oladokun, Y. O., & Oluyole, K. A. (2021). Challenges to Tea Production and Tea Marketing in Taraba State of Nigeria. *Scientific Papers Series Management, Economic Engineering in Agriculture & Rural Development*, 21(3).
- Mary Oladokun, Y. O., & Oluyole, K. A. (2021). Challenges to Tea Production and Tea Marketing in Taraba State of Nigeria. *Scientific Papers Series Management, Economic Engineering in Agriculture & Rural Development*, 21(3).
- Mary, O. Y. O., & Akanni, O. K. (2021). Green Tea Consumption and Its Determinants in Taraba State of Nigeria. *American Journal of Theoretical and Applied Business*, 7(4), 105.
- Ndagi, I. (2023). An Assessment of Tea Processing and Consumption among Tea Farmers'in Mambilla, Taraba State, Nigeria. *Journal of Agripreneurship and Sustainable Development*, 6(1), 213-221.
- Ndagi, I. (2023). An Assessment of Tea Processing and Consumption among Tea Farmers'in Mambilla, Taraba State, Nigeria. *Journal of Agripreneurship and Sustainable Development*, 6(1), 213-221.
- Oghenejoboh, K. M., Orugba, H. O., Oghenejoboh, U. M., & Agarry, S. E. (2021). Value added cassava waste management and environmental sustainability in Nigeria: A review. *Environmental Challenges*, 4, 100127.
- Ogunwolu, Q. A., Adewumi, I. A., Aremu-Dele, O., Mustopha, F. B., Buhari, R. A., & Adesanya, K. A. (2023). Intercropping Systems, Prospects and Challenges of Tea Production in Nigeria: A Review. *Nigeria Agricultural Journal*, 54(2), 376-381.
- Oluyole, K. A., Yahaya, A. T., & Agbebaku, E. E. O. (2017). Competitiveness of tea production and challenges of tea value chain in taraba state, Nigeria. *Journal of Innovative Agriculture*, 4(1), 10-16.
- Oluyole, K. A., Yahaya, A. T., Akinpelu, A. O., & Okunade, A. F. (2019). Comparative Analysis of the Demand for Different Brands of Tea in Southwestern Nigeria.
- Oluyole, K., Oladokun, Y., Yahaya, A., & Dada, A. (2022). Cost and returns analysis of intercropped tea farms in Taraba State, Nigeria. *Ife Journal of Agriculture*, 34(2), 1-9.
- Oyewole, M. F., & Eforuoku, F. (2019). Value addition on cassava wastes among processors in Oyo State, Nigeria. *Journal of Agricultural Extension*, 23(3), 135-146.