

**Muhammad A. I.,
Abubakar A. M.,
Fatima M. A.,
Salisu Y.**

MEDIATING INFLUENCE OF ISLAMIC MICROFINANCE ON AGRICULTURAL ANTECEDENTS AND AGRIBUSINESS PERFORMANCE IN JIGAWA STATE, NIGERIA

The object of research is the relationship between farm technical know-how (FTK), farmers' cooperatives (FC) and agribusiness performance (ABP) in Jigawa State, Nigeria. Despite the importance of the agribusiness in terms of economic growth and development of Jigawa state, yet, the agribusiness performance is decreasing in the state. The findings from the sector revealed inconsistency due to that this study is motivated to includes Islamic micro-finance as a mediating variable on the relationship between the study variables.

The study seeks to establish a relationship between agricultural antecedents and Agribusiness Performance. Also, to explore the mediating impact of Islamic microfinance on the relationship between agricultural antecedents and Agribusiness Performance in Jigawa state, Nigeria.

The study used a quantitative approach with 320 questionnaires and analysed by Partial Least Square Structural Equation Modelling (PLS-SEM) through Smart PLS software.

The findings of the study indicated that there is a positive relationship between farm technical know-how, farmers' cooperatives, and agribusiness performance. Similarly, Islamic microfinance was found to mediate the relationship between farm technical know-how, farmers' cooperatives and agribusiness Performance.

The study recommended that Jigawa state government decision-makers, agribusiness associations and farmer cooperatives should consider use of Islamic microfinance as a solution to the problems of Agribusiness Performance through which poverty reduction and unemployment can be solved. In relation to this, Islamic micro-financial institutions should provide more opportunities to support agribusiness activities.

Keywords: *agribusiness performance, farm technical know-how, farmers' cooperatives, Islamic microfinance, conceptual framework.*

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1. Introduction

Performance serves as a term used in many areas to describe the processes of achieving the objectives of every production level. The theory of economic growth described business performance as the level of increase in the capacity of output through provision of efficient input at a point where the average cost curve is at the minimal level for that particular product. Also, business performance refers to the action taken towards assessing or quantifying customer satisfaction over a given activity. As the name implies agribusiness performance is seen as the process of quantifying the efficiency and effectiveness of the marketing of farm input and output. Agribusiness performance as how well the farm products are managed to satisfied customers and owners. Agribusiness is regarded as practical performance of production, processing, distribution, and marketing of farm input and outputs [1]. It can also be seen as the management of farm products for local and international consumption and raw materials for industries [2, 3]. Likewise, authors paper [4] are of the

opinion that the developments of agricultural antecedents which remain a vehicle for reaching the achievement of the modern agriculture and manufacturers development. Furthermore, agricultural antecedents which are described in this study as farm technical know-how and farmers' cooperatives are among the oriented pillars of agribusiness for economic growth and development. This is in line with the study [3, 5] that farm technical know-how, farmers' cooperatives and Agribusiness Performance (ABP) serve as a productions and marketing activities that improves food supply and raw materials to the manufacturers for sustainable economic growth and development of a nation. Sustainable Farm Technical Know-how (FTK) and Farmers' cooperatives (FC) increase the spirit of orientation and practice of green entrepreneurship [1]. The orientation and practice of farm business is recognized as agribusiness which requires FTK and FC for farm produce, processing and marketing. It is also seen as a kind of orientation and practices of soil cultivation for self-employment and marketing activities [6].

More so, a successful FTK, FC and agribusiness remain a source for employment opportunities, income generations to individuals and public. A significant agricultural antecedent's leads to the food security, raw materials for the industries, employment and marketing as well as propelling the other productive sectors of the economy (Food and Agriculture Organization (FAO) [7]. Every economy considers agribusiness as machinery for generating employment and poverty eradication as well as catalyst for economic growth and development [8]. Similarly, the economic growth and development of farm productivity are achievable with the availability of FTK and FC [4, 9]. The modern farming system is employed to upgrade both human and material resources to improve farm input and output for sustainable economic growth and development [10]. The Improved farm input and output are the primary sources of global food security and raw material to the industries for sustainable economic growth and development in developing nations in which Nigeria is not in isolation.

Nigeria is also a great producer and exporter of farm output such as; groundnut, palm oil, cocoa, rubber, hides, and skin among others. Due to the importance of farming and agribusiness activities to the economic growth of Nigeria, the Central Bank of Nigeria (CBN) established various programmes to enhance the growth of the agribusiness sector by introducing various farm schemes and programmes including; National Accelerated Food Production Programme, National Farm Land Development Authority, the Nigerian Incentive-Based Risk Bearing System for Semi-formal credit, Nigeria Agriculture, Rural and Cooperative Bank, Semi-formal credit Guarantee Scheme Fund, and Agriculture Development Bank among others [11, 12]. More so, these programmes are impacted in all the 36 states of Nigeria. Since, the country is among the most agrarian as well as the most populous in West Africa with the estimated population of 206,139,569 in January, 2020 [13]. Also, agriculture and agribusiness are the main sources of income for 70 per cent of the population and remains a commercial centre in West Africa [14]. In a similar vein [15] reported that Nigeria is the most populated and agrarian with a high farm produce market opportunity and agro-allied industries. The country solidly depends on agribusiness as a second source of income through revenue derived from export of farm produce and tax charges on import of related farm input and output in which Jigawa state, is not in isolation. This study covers the three senatorial districts of Jigawa state as the state is located within the Sudan savannah vegetation zone, but with traces of Guinea savannah in the southern part of the state. More so, the state has fertile soil for supporting agriculture which resulted to agribusiness activities from the main grown that include rice, guinea corn, millet, sorghum, cowpea, and groundnut among others. Furthermore, the author of [16] reports that Jigawa State covers an area of 23,158 square kilometre (KM²) and is ranked 8th of 36 States of Nigeria with 4,361,002 estimated population.

Furthermore, the state lies between latitudes 11°N and 13°N and longitudes 8°E and 10°E with a tropical climate while the temperature varies at different times as the high temperatures are normally recorded between April and September. The daily minimum and maximum temperatures are 15 degrees and 35 degrees Celsius. The rainy season lasts from May to September with an average

rainfall of between 600 millimetres to 1,000 millimetres. Likewise, the southern part of the state has a higher rainfall percentage than the northern part [17]. However, the growth of agribusiness is decreased as a result of insufficient agricultural antecedents. This problem is stressing the growth of the sector within the three senatorial district in the state to the extent that, the issue of poverty and unemployment become the order of the day in Jigawa state, whereas, several governments, non-governmental organizations, and scholars have made a lot of initiatives for the economic growth of the agribusiness and found inconsistent results. More so, few studies were conducted with the inclusion of Islamic microfinance in the state. Based on the above, this study makes the inclusion of the Islamic microfinance to be served as a mediating variable to straighten the relationship between FTK, FC and ABP. This is in line with the study [18] that a mediating variable is necessitated in a situation of inconsistent findings on the relationship between independent and dependent variables (IVs and DV). Since the various findings concerning the variables of this paper revealed mixed results. Furthermore, Islamic microfinance is a Shariah mode of transaction that can be arranged for farmers and agribusiness [19–21]. It is also reported that Islamic microfinance is the most popular Islamic financial product in financing Agribusiness Performance. Therefore, the following objectives would serve the main contributions of the study as few studies were conducted on these variables in the state.

Thus, *the object of research* is the relationship between FTK, FC and ABP in Jigawa State, Nigeria. *The aim of research* is to explore the mediating influence of Islamic microfinance on the relationship between FTK, FC and ABP in Jigawa State, Nigeria.

2. Methods of research

Agribusiness refers to the farming orientation which includes full-time utilisation of soil, animal rearing, and forestry management with the aim of marketing food items and raw materials to the industries for profit motives [7, 22]. Agribusiness is the provision of food, animal, fisheries, poultry and forest reservations for sustainable living and marketing orientation. It is also seen as an act of transactions of the output of soil cultivation and animal management for poverty reduction, economic growth and development. The economic growth of the agribusiness is described as full utilisation of soil capacity for crop growth and animal management for generating income through the satisfaction of the primary needs of the population and industries [1, 23, 24]. Also, the growth of agribusiness yielded from the higher gross of farm output after a successful selection of the farm input or factors of farm production [25]. Furthermore, factors of production which include; capital while farm special amenities such as modern storage facilities, extension workers, tractors, planters, and water pumping machines among others (land, labour and entrepreneur) are the key sources of the agribusiness and farmer's income through the provision of food security, employment generation, market, and industries as well as a major channel of poverty reduction [26–28].

Farm technical know-how can be seen as an ingredient of capital accumulation for the rise of production. It is the facilities used to standardise the lifestyle of the farming

system. It is also described as a necessary prerequisite for the modern style of agriculture production in which include; human capital, schools for labour training, hospital, good road, modern market, storage facilities among others [11, 29, 30]. Farm technical know-how remains a catalyst in the process of farm growth as well as a machinery of full resource utilisation in the field of agriculture and agribusiness. Similarly, FAO, [7] reported that farmers in a group of 10–12 are telephone to join with farm extension service workers, researchers, and professionals. Additionally, author of [23] reported a significant relationship between farm technical know-how and Agribusiness in Nigeria. The author of [31] reported a relationship between agricultural antecedents and agribusiness in Tanzania. Also, author of [32] established a relationship between educations and agribusiness in Tanzania. In [33] established a positive relationship between innovations and the growths of sorghum in South Western Kenya. Equally, the study of [34] reported a significant relationship between innovations concerning transportation and marketing sorghum farm output in South West Kenya where farm technical know-how influence Agribusiness Performance.

Thus the study states the following proposition: Farm technical know-how influence Agribusiness Performance in Jigawa State, Nigeria.

Farmers' cooperatives refer to Semi-formal lending category which mostly motivated by credit unions, co-intelligence officers, rural community banks and non-governmental organizations (NGOs). These types of institutions are established by agribusiness and communities with the assistance of the government and international NGOs. Their primary functions are to aid the credit delivery, solving problems that may arise and to secure and arrange credit repayments. Farmers' cooperatives is kind of farm facility popularly known as agribusiness activities lending which is referring to a financial transaction set to enhance agribusiness activities with due respect to the received and repayment conditions over some time [35]. It can also be described as an amount of money ready to be released by the informal money market for enrolment of farm production based on repayment conditions [36]. Additionally, it can be regarded as a systematic procedure of power acquisition of controlling money for a purpose of farm activities within a designated period and conditions [37–39].

The relationship between semi-formal lending and agribusiness is an important on farm produce towards achieving economic growth [40, 41]. In [42] established a relationship between lending to Agribusiness and farm output in Nigeria. Semi-formal credit is a major ingredient for enhancing the growth of farm output [43, 44]. It can also be seen as financial support and effort to upgrade the agribusiness. Similarly, accessibility of lending to the needy farmers is a great and technical support to the rural farmers towards minimisation of production waste and maximisation of agribusiness, which would lead to the increase in farmer's income and socio-economic growth [45]. In [41] established a positive relationship between semi-formal credit and Agribusiness growth in South Africa. In [23] revealed positive results related to bank loan and agribusiness activities in Nigeria. In [46]

reported a relationship between lending to the farmers and Agribusiness in Nsuka, Nigeria. In [47] reported a relationship between lending and agribusiness in Isan-Ekiti, Nigeria. In [48] established a relationship between semi-formal credit facilities and agribusiness in Chile. Thus, the study state the following developed proposition: Farmers' cooperatives (FC) influence Agribusiness Performance (ABP) in Jigawa State, Nigeria.

Farm technical know-how, Farmers' cooperatives represents the two independent variables, while Islamic microfinance is the mediating variables and Agribusiness Performance is employed as the dependent variable. Islamic microfinance is a Shariah compliant financial products and services provided to the poor segments of the society in order to help them increase their income thereby uplifting their economic status. This means that the products offered are featured with non-interest based as well as be free from manipulations, exploitations and gambling [49–51]. Similarly, Islamic microfinance was said to improve trading of commodities, including farm input such as; fertilizer, tractors, planters, harvesters and modern farming technologies among others [52]. Few studies that employed Islamic microfinance such as [53] established a positive relationship between Islamic microfinance and agribusiness financing in Sri-Lanka. Also, in [54] indicated a positive relationship between Islamic microfinance and agribusiness financing in Indonesia. Additionally, in [55] reported a significant relationship between Islamic microfinance and the growth of agriculture and related in Sudan. Furthermore, in [56] reported a significant relationship between financial institutions and storage facilities. In [57] studied Islamic financing mechanism for small medium enterprises in agriculture sector as a proposed model and the result reported positive. Thus, the study state the following developed proposition: Islamic Microfinance (IMF) influences Farm Technical know-how (FTK), Farmers' cooperatives (FC) on Agribusiness Performance (ABP) in Jigawa State, Nigeria.

Based on the above empirical evidence, the framework of the study, given below, illustrates the mediating role of the IMF on the relationship between FTK, FC and ABP is depicted in Fig. 1.

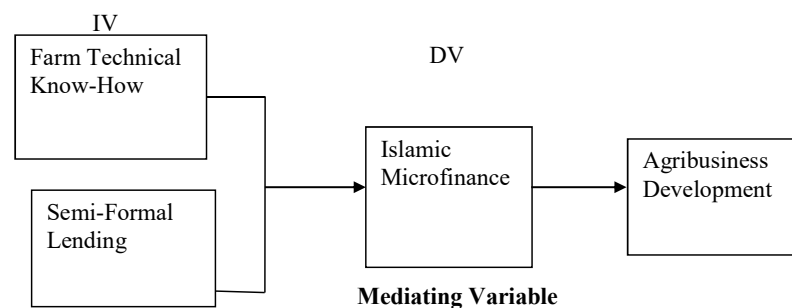


Fig. 1. Framework of Farm technical know-how, Farmers' cooperatives and Islamic Microfinance and Agribusiness Performance

In explaining the moderating influence of Islamic microfinance on the relationship between FTK, FC and ABP, the present paper proposes the extent to which FTK and FC influence the ABP. This indicated that well-selected agricultural antecedents results in higher yield. This is supported by a Cobb-Douglas theory of production function

and previous empirical findings across the world. Based on the previous inconsistent empirical findings, this study incorporated Islamic microfinance to serve as a mediating variable on the influence of FTK and FC on ABP.

3. Research results and discussion

In the course of this research, 320 questionnaires were distributed and analysed using Partial Least Square Structural Equation Modelling (PLS-SEM) through Smart PLS software on data analysis. This is highlighted in a research carried out [57] PLS is a recognised technique for examining the cause-effect relationship between two or more latent variables. Equally, PLS-SEM modelling method of analysis is more superior and flexible in the prediction and examination of the variable's relationship and mediating impact [58]. The study also considered 0.70 as the accepted composite reliability coefficient.

The descriptive statistics for the latent variables of this study are used on computing means and standard deviations concerning the latent variables as indicated in Table 1.

Table 1

Descriptive Statistics

Variable	N	Mean	Std. Deviation
ABP	320	3.375	0.828
FTK	320	4.056	0.818
FC	320	3.287	0.830
IMF	320	4.271	0.892

Table 1 summarises the descriptive statistics for the entire variables ABP, FTK, FC and IMF under study. Average mean scores and standard deviations for the variables are measured using five-point Likert scale questionnaire are also presented in the Table. Generally, the mean score for ABP=3.375, FTK=4.056, FC=3.287, IMF=4.271). The standard deviations for all the variables are also similar with ABP having the highest standard deviations 0.828 and lowest of 0.892. This implies that ABP is considered highly important among the independent variables.

Table 2 indicates the composite reliability coefficient, which is considered instead of Cronbach's alpha since they serve the same purpose in measuring reliability and validity. This means any of the above is reliable as their internal consistency value is above 0.70. Moreover, the measurement of internal consistency reliability through the composite reliability coefficient was in line with the rule of thumb.

Table 2

Composite Reliability Coefficient

Code	Loading	Ave	Composite Reliability
ABP	0.713	0.611	0.818
FTK	0.827	0.604	0.771
FC	0.680	0.679	0.852
IMF	0.829	0.710	0.828

After full model assessment, Hypothesis 1 predicted that FTK had a significant positive relationship ABP ($\beta=0.13$, $t=2.04$, 0.304 , $pv=0.02$, $p<0.05$), where β – testing value;

pv – probability values; p – level of significance. Also FC had a significant positive relationship with ABP ($\beta=0.431$, $t=12.57$, $pv=0.00$, $p<0.05$). As well as Islamic microfinance mediated the relationship between FTK and ABP ($\beta=0.13$, $t=3.41$, $pv=0.00$, $p<0.00$). Also, IMF mediated the relationship between FTK, FC and ABP ($\beta=0.18$, $t=3.07$, $pv=0.000$, $p<0.05$).

4. Conclusions

The study explained the mediating influence of Islamic microfinance on the relationship between agricultural antecedents and Agribusiness Performance as depicted in Fig. 1. Meanwhile, the self-report method was used and provided reasonable statistical support regarding the mediating impact of Islamic microfinance on the relationship between Agribusiness Performance and the independent variables under study. Similarly, the path coefficients revealed a positive relationship between FTK and ABP. Also, it revealed a positive relationship between FC and ABP. Likewise; Islamic microfinance was positive and significantly mediated the relationships between FTK, FC and ABP. This indicated that the proposed hypotheses were all supported. Therefore, this study recommended that financial institutions and agribusiness cooperatives in Jigawa State should use this model as an essential solution to the current inefficiency of financial services. Finally, the current study introduces a new framework in the Jigawa state Agribusiness Performance. More so, the paper hoped that; the proposed model will add more knowledge on the role of Islamic microfinance in financing agribusiness, subsistence, commercial, irrigation agriculture, and agro-allied industries as well as individual and group of farmers. Furthermore, further research should look for other Islamic micro-financial products and relate it to other productive sectors in Jigawa state, Nigeria and other African countries.

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Muhammed Ahmed Ibrahim, Doctor of Banking and Finance, Academician, Head of Department of Banking and Finance, Federal University Dutse, Dutse, Nigeria, e-mail: ahmed.im@fud.edu.ng, ORCID: <http://orcid.org/0000-0002-5505-1417>

Abubakar Adamu Magaji, Doctor of Business Administration, Academician, Head of Department of Business Administration, Federal University Dutse, Dutse, Nigeria, e-mail: magajiaa@fud.edu.ng, ORCID: <http://orcid.org/0000-0001-7726-1696>

Abdulkarim Fatima Sabo, Doctor of Islamic Finance, Academician, Head of Department of Banking and Finance, Federal University Dutse, Dutse, Nigeria, e-mail: fatimakarim@fud.edu.ng, ORCID: <http://orcid.org/0000-0001-6958-2713>

Salisu Yahuza, Doctor of Islamic Economics, Department of Economics, University of Bakht-Alruda, Ed Dueim, Sudan, e-mail: yaslisdg3@gmail.com, ORCID: <http://orcid.org/0000-0001-5199-5149>