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Agricutural entrepreneurship among the youth: The case of youth involvement in rabbit production in Nigeria

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ABSTRACT

Objective: The objective of this study is to examine agripreneurship among youths. Specifically, the study investigates the motivating factors for agripreneurship development among youths, examine the profitability of rabbit production among youth agripreneurs and identified the constraints faced in rabbit production.

Research Design & Methods: One hundred and twenty youth agripreneurs involved in rabbit production were selected using the snowball sampling technique and data were collected using a questionnaire. Descriptive statistics, cost and return analysis (gross margin analysis, net profit, operating ratio and return to capital invested) and Likert rating scale were means of analysing the data.

Findings: The study revealed that the majority of the youth agripreneurs were males (76.7%), single (85.8%) and obtained their capital from personal savings (87.5%). The important factors motivating agripreneurship development among youth were a quest to acquire personal wealth, to boost income, to achieve what one wants to have in life, to be financially independent, to be self-employed, for personal satisfaction and growth, for high self-esteem, desire to do a new thing and to contribute to their household income and needs. Furthermore, rabbit production among the youth agripreneur was profitable with a net profit of 339,193.56 NGN (826.21 USD), an operating ratio of 23% and a return on capital invested of 3.41. The major constraints faced by the youth agripreneur in rabbit production were lack of government support, poor extension contacts, inadequate credit facilities and diseases outbreak.

Implications & Recommendations: This study calls for governments and Non-Governmental Organizations to support and encourage youths to participate more in agripreneurship through the provision of credits and production inputs for profit maximization and cheap protein availability.

Contribution & Value Added: This study contributes to entrepreneurship literature by focusing on agripreneurship by youth in a view to enhance more participation in agripreneurship.

Article type: research article

Keywords: agripreneurship; agricultural entrepreneurship; entrepreneurship in agriculture; motivating factors; profitability; rabbit farming; youth agripreneurs

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INTRODUCTION

Overcoming the high malnutrition level in the world, especially in sub-Saharan Africa where the majority suffer from protein deficiency leading to kwashiorkor among the children, is a global concern. In Nigeria, a major nutritional problem has been the low rate of animal-based protein especially for the low-income farmers (Akinola, 2009). Today, the human population is increasing and as such, protein demand to feed the growing population is on the high side and would not rely on poultry or piggery as a source of white meat. Rather, other white meat animals should be exploited such as rabbit meat which is low in cholesterol and safe for both children and old people.

Youth participation in agripreneurship (agricultural entrepreneurship), especially small livestock rearing, such as rabbit, with little start-up capital, can play a significant role in increasing protein availability at a cheaper rate. In developing countries, there has been an increase in the acknowledgement of rabbit production in recent years as a means to help reduce poverty (Baruwa, 2014). Thus, youth involvement in rabbit production will not only enhance protein availability and solve the malnutrition problem, but also serve as a tool to lower the poverty rate and enhance the employment rate. This is to a large extent attributed to the high prolificacy, early maturity, rapid growth rate, gene selection ability, feed efficiency, ample use of land space, minimal competition for foods with humans and high-quality nutritious meat from the rabbit.

Rabbit production seems to be the most viable means of producing excellent quality animal protein for the ever-growing population of Nigeria (Onifade *et al.,* 2010). The major advantages of raising rabbits include short gestation length, low cost of production, small-bodied size, high prolificacy, rapid growth rate, high adaptability over an extensive range of eco-friendly environments and capability to utilise by-products from agriculture and forages (Abu *et al*., 2008). Their management requires less land space and can be kept in the backyard of a farmer's house. Rabbits reach maturity at five months and body mass of slaughter at three months with their ability to survive in both temperate and tropical environments (Iheukwumere, *et al.,* 2018). A well-fed doe can breed four times a year with an average of seven kits per kindling (Onifade, *et al.,* 2010). By feeding on greens alone, rabbits can get their entire feed requirement. Their feed conversion ratio of 4:1 is one of the highest feed conversion ratios among animals (Aduku & Olukosi, 1990). The meat of the rabbit is lustrously white, fine-grained, appetizing and nutritious and is a convenient source of excellent quality animal protein (Hernández & Dalle Zotte, 2010). Rabbit meat is high in protein and low in sodium, cholesterol and fat unlike some other animal protein such as pork, lamb and beef. Rabbits appear to be a low-cost solution to the problems of undernutrition and hunger of the poor rural dwellers in developing countries (FAO, 2000). It is one of the principal ways of alleviating animal-based protein deficiency in Nigeria via its advantageous qualities when compared to other animals (Marcus & Onyeonoro, 2018). They are known as animals of great economic significance (Ogbonna, 2015).

Rabbit production is a beneficial business with quick returns and also a high probability of recouping original investment (Oseni &Lukefahr, 2014). Thus, rabbit occupies economic niches not readily available to larger species and particularly useful on the margin of cash economy because it cost less to buy, represents a less financial risk, produces a faster return on investment, allows flexibility of operation, is easily transportable, provides a steady source of income or food and is often a very efficient feed converter (Wilson, 2011). Rabbits are primarily and above all regarded for poverty alleviation programs because of their little financing and early advantages, inherency on housing, general management and renewable resources for feeding. Thus, small-scale rabbit farming could be used as a great medium for the sustenance of livelihood and good nutrition among the youths. Taking into account the number of characteristics that are of great advantage to smallholder rabbit farmers, especially the youths, as well as a greater acknowledgement that rabbit production has a high level of indispensable potential to improve food security, lower the malnutrition problems and reduce unemployment, a concise study of the economic system is required to ascertain the maximum production and profitability of rabbit production.

Previous studies on entrepreneurship among youth focused on university students and were not on agripreneurship (e.g., Ben Moussa & Kerkeni, 2021; Fauzi *et al*., 2021; Gubik & Bartha, 2018; Hassan *et al*., 2021; Karyaningsih *et al*., 2020; Wardana *et al*., 2021; Zamrudi & Yulianti, 2020). There is thus a need to concentrate on youth involvement in agripreneurship. The aim of this study is, therefore, to explore youth involvement in agripreneurship. Specifically, the study described the socio-cultural and economic characteristics of youth rabbit producers; examined the motivating factors for agripreneurship development among youths; evaluated the profitability of rabbit production and identified the constraints faced in rabbit production among youth agripreneurs. These would enable the understanding of the profitability level of rabbit production to encourage and motivate more participation of youth, who always seek a white-collar job, in agripreneurship activities. This would, in turn, lower the high level of malnutrition through the availability of protein and consequently lower food insecurity, unemployment and poverty

rate. Good knowledge of factors responsible for the profitability of rabbit production would enable the youths to know where to channel their resources towards profit maximisation.

LITERATURE REVIEW

Entrepreneurship has received researchers' extensive attention due to its significant contribution to national prosperity, economics and social development (Khan, 2013; Reissova *et al*., 2020). It is recognised globally as an important economic development strategy for creating jobs and wealth (Sołek-Borowska & Numprasertchai, 2018). Entrepreneurship is defined as the identification of new business opportunities, mobilization of economic resources to start a new business or funding the existing ones under risk and uncertain conditions to make profits (Adenutsi, 2009). The creation of business opportunities can take place in any field such as agriculture, industry, social work and education. The creation of business in agricultural-related activities is agripreneurship.

Agripreneurship simply means entrepreneurship in agriculture. Agricultural entrepreneurship is defined as a value creation process composed of a unique set of resources to exploit and take advantage of opportunities in rural areas (Estahbanaty, 2013). It is the process of adopting new methods, processes, techniques in agriculture or the allied sectors of agriculture for better output and economic earnings. Agripreneurship converts agricultural activity into an entrepreneurial activity and take the risk to develop agricultural ventures to make a profit from the agricultural investment. It is also defined as the profitable marriage of entrepreneurship and agriculture (Bairwa *et al*., 2014). Rao and Kumar (2016) define agripreneurship as the entrepreneurial process taken up in agriculture or allied sectors. Kaur *et al*. (2018) defined agripreneurship as directly marketed agriculture that is community-oriented and generally sustainable. Agriculture is an important sector and has many areas with many available commodities in each area which requires improvement in their production through value addition (Kaur *et al*., 2018; Mukaila, 2021). Thus, the need to train the unemployed youths in agricultural entrepreneurship management and enlighten them on its importance. Agripreneurship training will support youth, especially rural youths, to create employment to be agripreneurs and consequently enhance their economic status in society. An agripreneur is described as a person who invests in and manages an agricultural enterprise for profit-making. An agripreneur managed and use all factors of agricultural production for economic and social benefits. They are independent, risk-takers, daring, rational and have the quality of leadership, competitiveness and achievementorientation.

Researchers have investigated entrepreneurship generally. Previous studies on entrepreneurship among youth focused on university students and the entrepreneurial investigated was not on agripreneurship. Gubik and Bartha (2018) identified the entrepreneurship motivating factors of students and checked the nexus between the factors and entrepreneurship education. The authors defined five factors of entrepreneurial motivation (market focus/Competition, Individual goals, community/collective goals, social mission and customer focus). Their findings revealed a weak correlation between the motivating factors and entrepreneurship education characteristics. Zamrudi and Yulianti (2020) investigate the driving factors of students' intention to do business in Indonesia using partial least square structural equation modelling (PLS-SEM). The study revealed that the supporting condition factors were structural support, university support and relational support. Meanwhile, entrepreneurial self-efficacy has no significant effect on students' entrepreneurial intention. Karyaningsih *et al*. (2020) investigated entrepreneurship education and students' intention to be entrepreneurs using structural equation modelling (SEM), factor analysis (CFA) and exploratory factor analysis (EFA). The results revealed that entrepreneurship education had an impact on entrepreneurial intention, knowledge and mindset. Students' entrepreneurial knowledge influenced their intention to be entrepreneurs but has no significant effect on the entrepreneurial mindset.

Hassan *et al*. (2021) investigate driving factors of entrepreneurship cultivation among higher institutions in Malaysia using structural equation modelling. The study revealed that the only significant factor that influenced entrepreneurial culture in the higher institution was empowerment. Wardana *et al*. (2021) examined the impact of entrepreneurship education, attitude and cultural influence on

economic students' entrepreneurship intension in Indonesia. The study revealed that entrepreneurship attitudes and culture influenced entrepreneurship intention among the students. Fauzi *et al*. (2021) examined students' entrepreneurial abilities in Malaysian using PLS-SEM. The study revealed that inspirational motivation was the strongest predictor of both entrepreneurial behaviour and knowledge sharing. An individualised consideration, knowledge sharing and psychological empowerment had a significant impact on entrepreneurial behaviour while intellectual stimulation and idealised influence show no effect. Ben Moussa and Kerkeni (2021) examined the importance and role of the family environment (family support for entrepreneurship, entrepreneurial role model and parental support for autonomy) in determining the entrepreneurial intention of young Tunisian students. Their result revealed that exposure to an entrepreneurial role model and parental support for autonomy were the most important factors that stimulate students' entrepreneurial intention. Meanwhile, family support for entrepreneurship (social and financial capital) does not affect the entrepreneurial intention of young students. Baharuddin and Ab Rahman (2021) investigate the dominant characteristic (antecedent) for becoming entrepreneurs among Muslim youths in Indonesia using the theory of planned behaviour model and PLS-SEM. The study shows that personal attitude (0.011), perceived behavioural control (0.040) and subjective norms (0.152) were the three exogenous driver constructs that have an effect on entrepreneurship intention among the students.

The current study defers from the previous studies by focusing on youth involvement in agripreneurship. The profitability of rabbit production among youths was also investigated which little information on it existed. The methodology employed in this study also defers from other studies. Therefore, there is the need to carry out an empirical study on youths' involvement in agripreneurship and profitability of rabbit production among the youth agripreneurs to promote youth involvement in agricultural entrepreneurship.

RESEARCH METHODOLOGY

Study Area

This study was conducted in Enugu state Nigeria which is one of the 36 states in the country. Enugu state was created in the year 1991 from the eastern two-thirds of Anambra state and is regarded as the coal city state but has a lot of agricultural practices ongoing. The inhabitants of the state are majorly farmers and traders, especially the rural dwellers. They rear animals like rabbits, goats, sheep, and poultry. They also grow food crops like yams, maize, beans, cassava, cocoyam and some cash crops like kola nuts, palm trees, oil bean trees, breadfruit, coconut and cashews.

Sampling Procedure

A multistage sampling technique was used in this study. In the first stage, four local government areas were randomly selected in the state. Three autonomous communities were randomly selected from each of the four local government areas making a total of twelve communities. At the last stage, the Snowball sampling technique was used to select ten youth agripreneurs who were involved in rabbit farming. Thus, a total of 120 youth agripreneurs served as respondents for this study.

Data Collection

Data were obtained from a primary source. It was collected via a structured questionnaire that contained a set of open and close-ended questions for the youths involved in rabbit production agribusiness as respondents. Federal Ministry of Youth and Sports Development (2019) defined youths in Nigeria as people within the age group of 15 to 29 years. Thus, the targeted population of this study were people between the age group of 15 to 29 years involved in rabbit production. The questionnaire gathered important data on the socio-economic and cultural characteristics of rabbit farmers, the costs and returns from the rabbit production system, the constraints associated with rabbit production, and the management process employed.

Data Analysis

Descriptive statistics such as means, frequency distribution and percentages were used to describe the socio-cultural and socio-economic characteristics of the youth agripreneurs. Costs and returns analysis (such as gross margin analysis, net profit, operating ratio and return to capital invested) and Likert rating scale were also used to analyse the data obtained from the respondents.

Costs and Returns Analysis

The profitability and returns were determined using gross margin analysis and net profit. The gross margin is a profitability analysis that shows the gross profit of an enterprise after deducting the variable costs. The difference between the total revenue (TR) accrued from rabbit production and the total variable cost (TVC) incurred in rabbit production is the gross margin (GM).

$$Gross\ margin = total\ revenue - total\ variable\ cost$$

Net profit takes care of the limitation of gross margin analysis since gross margin did not account for the fixed cost incurred in an enterprise. This study, therefore, further calculated the net profit of the enterprise. Net profit is the difference between the gross margin and the total fixed cost in rabbit production.

$$Net\ profit = gross\ margin - total\ fixed\ cost$$

The operating ratio is directly related to the farm variable input usage and measures the portion of total revenue used as a variable cost. The lower the ratio, the higher the profitability of the farm business.

$$\text{Operating ratio } = \frac{Total\ varibale\ cost}{total\ revenue}$$

Return on capital invested is defined as gross margin divided by total variable cost. It measures the return from a unit of currency invested in an enterprise.

$$\text{Return on capital invested} = \frac{gross\ margin}{total\ varibale\ cost}$$

Likert Scale

Likert scale is a scaling method used in research to measure individual's attitude, perception and opinions including the degree of agreement and disagreement to a statement. It is commonly used in research that requires questionnaires. A four-point Likert rating scale was used in this study to identify the constraints associated with rabbit production. The cut-point used was a mean score of 2.50. Any constraint with a mean score of 2.50 and above was considered severe while those with a mean score lower than 2.50 were considered not severe. A four-point Likert rating scale was also employed to identify the motivating factors promoting agripreneurship development among the youths.

RESULTS AND DISCUSSION

Socio-economic characteristics of youth entrepreneur involved in rabbit production

The socio-economic characteristics of the youth involved in rabbit farming were presented in Table 1. As shown in Table 1, youth rabbit farmers were predominantly male (76.7%) while a few proportions were females. Thus, the enterprise was male-dominated. Women involvement in activities such as caring for the home and other household chores which consumed most of their time may have been the reason for low female participation in rabbit farming (Baruwa, 2014). Regarding the age of the respondents, the majority (57.5%) were within 21 and 25 years, 21.7 per cent were within 26 and 29 years and 20.8 per cent were between 15 and 20 years of age. The average age of the rabbit farmers was 23 years. This implies that the study targeted the appropriate population who were in their economic active age to practised rabbit production (engage in agripreneurship). Most of the youth rabbit farmers were single (85.8%) while 14.2% of the respondents were married. The higher level of single-person involvement in rabbit farming was due to their youthful age. Results of educational level show that most youth agripreneurs had completed secondary education (68.3%), 26.7% had completed tertiary education, 3.3% had completed primary education, while 1.7% had no formal educational back-

ground. Education is important in livestock production because it helps to increase the farmer's knowledge on better management practices. Akanbi *et al*. (2020), and Mukaila *et al*. (2021) opined that education has an important influence on decision making and managerial ability. This will therefore enhance the producer's ability to embrace new technologies.

Regarding youth agripreneurs experience in rabbit rearing, 65 per cent of the youths had between one and five years of rabbit rearing experience, while 35 per cent had between six and ten years. They had an average of five years of experience in rabbit rearing. This shows that rabbit farming was not new to the youth and they can be said to be experienced in rabbit farming. Seventy per cent of the youth did not belong to any association while only 30 per cent of them were members of an association. This implies the low participation of youth rabbit farmers in social organization activities. The majority (80.0%) of the youths can easily access the market for their products while only 20 per cent find it difficult to access the market due to distance cover. These results imply that there is an availability of market for rabbit products. The result of access to extension services shows that 82.5% of the youthshad no meeting with an extension agent while only 17.5% of them had meetings with extension agents. Access to extension services translates to access to information that will, in turn, improve the productivity of rabbit production.

The majority of the youth (87.5%) had their main source of capital from the personal funds or own pockets, while 7.5% and 5% of youths sourced their main capital from friends or relatives and associations, respectively. Personal fund is not always enough in agriculture and limits farmers production level to a small scale. Thus, the majority of youths finance their businesses from personal funds which limit their activities to a small-scale level. The majority (76.7%) of youths had no access to credit or loans while only 23.3% had access to credit or loans. This implies that they did not have access to credit facilities from commercial and microfinance banks. This could also limit their production to a small scale. Regarding their annual income, 32.5 per cent of the youths had 400,001 NGN (974.33 USD) to 500,000 NGN (1,217.91 USD), 9.2% had 300,001NGN (730.75 USD) to 400,000NGN (974.33 USD), 21.6 per cent had 200,000 NGN (487.16 USD) to 300,000 NGN (730.75 USD), 26.7 per cents had less than 200,000NGN (487.16 USD) and 10 per cent had more than 500,001 NGN (1,217.91 USD) per annum. The youth rabbit farmers had an average annual income of 341,312.6NGN (831.37 USD). This suggests that rabbit production contributed to the youths' economic status.

Factors motivating youths agripreneurial development

The factors motivating agripreneurship development among youths were presented in Table 2. The results show that the most important motivational factor for youth involvement in agripreneurship was to acquire personal wealth. This was closely followed by the quest to boost income. Engaging in agripreneurship such as rabbit production serves as means of generating income and improving youths' economic status in society. The third-ranked motivating factor was to achieve what one wants to have in life. The youths were able to achieve some of their wants and needs from the income generated from the agricultural enterprise. The quest of youths to be financially independent was also a motivational factor for their agripreneurship development. Youth agripreneurs were able to get things done independently without depending on their families. Youths were also motivated to involve in agripreneurship to be a boss and to be self-employed. Youths engaged in agripreneurship to meet responsibility through being self-employed. For personal satisfaction and growth was also an important motivating factor for youths agripreneurship development. Youths were motivated to engage in agripreneurship for high self-esteemin society. Youth agripreneurs were respected in society for being independent and self-employed. Youths were also motivated to be agripreneur due to the quest desire to do new things such as rabbit production. For reputation and recognition as an agricultural entrepreneur was also a motivational factor for youths agripreneurship development. To achieve the needs of life such as foods and clothes was also motivating factor for youths agripreneurship development. The youths also engaged in agripreneurship to contribute to their household income and needs. They engaged in income-generating activities to contribute to their household's welfare. This suggests that rabbit production among the youths plays a vital role in their households' welfare and livelihoods. The least ranked motivating factor to engage in agripreneurship among youthswas for a bright future. Due to low education levels among some of the youths which may deprive them of getting white-collar jobs, they engaged in agripreneurship.

Table 1. Socio-cultural and economic characteristics of rabbit producers

Variables	Categories	Frequency	Percentage	Mean
Sex	Male	92	76.7	
	Female	28	23.3.	
Age	15-20	25	20.8	22.8
	21-25	69	57.5	
	26-29	26	21.7	
Marital Status	Married	17	14.2	
	Single	103	85.8	
Educational Qualification	Primary	4	3.3	
	Secondary	82	68.3	
	Tertiary	32	26.7	
	No formal education	2	1.7	
Farm Experience (years)	1-5	78	90.0	4.75
	6-10	42	10.0	
Member of Association	No	84	70.0	
	Yes	36	30.0	
Access to Market	No	24	20.0	
	Yes	96	80.0	
Access to Extension Services	No	99	82.5	
	Yes	21	17.5	
Main Source of Capital for Rabbit	Owned funds	105	87.5	
	Friends/relatives	9	7.5	
	Association	6	5.0	
Access to credit	No	92	76.7	
	Yes	28	23.3	
Annual Income (NGN)	≤200,000	32	26.7	341,312.6
	200,001-300,000	26	21.6	
	300,001-400,000	11	9.2	
	400,001-500,000	39	32.5	
	>500,001	12	10.0	

Source: own study.

Table 2. Motivating factors that promote agripreneurship among youths

Motivational Factors	Very important	Important	Less important	Not important	Weighted score	Mean score
To acquire personal wealth	90(75)	20(16.7)	10(8.3)	0(0)	440	3.67
To boost income	63(52.5)	38(31.7)	19(15.8)	0(0)	404	3.37
Achieve what one wants to have in life	79(65.8)	20(16.7)	7(5.8)	14(11.7)	404	3.37
To be financially independent	75(62.5)	13(10.8)	32(26.7)	0(0)	403	3.36
To be my own boss	53(44.4)	36(30)	31(25.8)	0(0)	382	3.18
To be self employed	41(34.2)	50(41.7)	29(24.2)	0(0)	372	3.10
For personal satisfaction and growth	47(39.2)	31(25.8)	42(35)	0(0)	365	3.04
For high self esteem	42(35)	44(3.67)	29(24.2)	5(4.2)	363	3.03
Desire to do new thing	42(35)	34(28.3)	35(36.7)	9(7.5)	349	2.91
Reputation and recognition	36(30)	39(32.5)	29(24.2)	16(13.3)	335	2.79
To achieve the needs of life	34(28.3)	35(29.2)	37(30.8)	14(11.7)	329	2.74
To contribute to the household	27(22.5)	41(34.2)	41(34.2)	11(9.2)	324	2.70
For a bright future	21(17.5)	56(46.7)	27(22.5)	16(13.3)	322	2.68

Note: Figures in parenthesis are in percentage (%).
Source: own study.

Profitability of rabbit production among the youth agripreneurs

Table 3 presents the results of the cost and return analysis (profitability) of rabbit production among youth agripreneurs. To understand the rabbit production profitability among the youth agripreneurs, there is the need to find out the cost and returns of the investments in the production. The total variable cost of input was 100,542.88 NGN (244.90 USD) while that of the total fixed cost was 4060.44 NGN (9.89 USD). The cost of getting the parent stocks had the highest share of total variable cost followed by the cost of feeding. Cost of housing had the highest share of total fixed cost. The revenue from the sales of rabbits produced in a year (average of 68 rabbits) was 443,796.87 NGN (1,081.01 USD). Rabbit production had a gross margin of 343,254 NGN (836.10 USD) and a net profit of 339,193.56 NGN (826.21 USD). The return on capital invested was 3.41. This implies that for every one unit of a currency (1 NGNor 1 USD) spent or invested on rabbit farming, there is a return of 3.41 NGN or 3.41 USD to the farm enterprise (depending on the currency). The operating ratio was 0.23, which implies that rabbit production uses a lower portion (23%) of the gross revenue as a variable cost. These results imply that rabbit production among the youth agripreneur was a profitable agribusiness enterprise. These findings were in line with Akanni and Odubena (2003) who found out that the rearing of rabbits was profitable with an operating ratio of 43%. Adanguidi (2020) and Baruwa (2014) also reported that rabbit production was a profitable venture.

Table 3. Profitability of rabbit production among youth agripreneurs

Variables	Values (NGN)	Values (USD)
Total revenue (A)	443,796.87	1,081.01
Variable cost		
Cost of stocks	69,525.62	169.35
Cost of labour	8,278.13	20.16
Cost of feeding	13,436.25	32.73
Cost of water	2,056	5.01
Cost of drugs	2,772.5	6.75
Cost of transportation	4,474.38	10.90
Total variable cost (B)	100,542.88	244.90
Fixed cost		
Cost of housing/cage	3,477.68	8.47
Cost of feeders	288.76	0.70
Cost of drinkers	294	0.72
Total fixed cost (C)	4060.44	9.89
Gross margin (D) = A-B	343,254	836.10
Net profit = D-C	339,193.56	826.21
Operating ratio (B/A)	0.23	0.23
Return on capital invested (D/B)	3.41	3.41

Source: own study.

Constraints faced in rabbit production among youth agripreneurs

The constraints faced in rabbit production among the youth agripreneurs were presented in Table 4. The major constraints faced were lack of support or interest by government and research institutes (3.65), inadequate extension programs or contacts (3.36), poor access to credit (3.16), pest and diseases infestation (2.90), high cost of housing (2.71), termite attack (2.65) and high cost of feeds (2.5). Lack of support or interest by government and research institutes was a very severe constraint and ranked first among the constraints. The youth involved in rabbit production did not receive government support to enhance their production activities, especially during the recent covid-19 pandemic. Inadequate extension programs or contacts in rabbit production was also a very severe constraint and ranked second among the constraints. Most rabbit farmers did not get access to extension programmes where they can get relevant information on modern rabbit farming.

Poor access to credit was also a very severe constraint in rabbit production among the youth agripreneurs and ranked third among the youth agripreneurs. The majority of the youths could not access credit, the few that could access credit got it from family and friends where they got little financial assistance. This could limit their production to a micro-scale level. The poor access to credit could be linked to a lack of collateral and the high rate of interest that is attached to the said amount of loan from commercial banks. The severity of pest and diseases infestation in rabbit production was perceived as a severe constraint to rabbit production and ranked fourth among the youths. Disease outbreaks inhibit the productivity and profitability of rabbit production among the youth. Taiwo *et al*. (1999) reported that one of the major causes of poor rabbit production in sub-Saharan Africa is pests and diseases such as Mange. It is quite a limiting factor to rabbit profitability.

The high cost of housing was perceived as a severe constraint in rabbit production and ranked fifth among the youth agripreneurs. Because most of the youth involved in rabbit production used personal funds to start the business, some perceived construction of cages and hutches as a challenge to engage in rabbit farming. Termite attack at the rabbit house was also perceived as a severe constraint and ranked sixth among the youth agripreneur. The rabbit houses (cages and hutches) were constructed with wood which is easily affected by termites. This led to spending money to control termites and/or constructing a new cage. This result is in line with Baruwa (2014) who reported that soldier ants was a challenge to rabbit production. The high cost of concentrated feeds was perceived as a severe constraint and ranked last among the severe constraints in rabbit production. Due to the inflation in the country coupled with low agricultural productivity as a result of the pandemic that affected the 2020 planting season. This increased the price of concentrated feed given to the rabbit to enhance their growth. Cherwon *et al*. (2020) reported a similar finding that the high cost of feeds is a major challenge in rabbit production in Kenya.

High risk of theft (2.13), marketing problems (2.06) and high cost of labour were not severe problems to rabbit production among the youth agripreneur. This could be because the youth had their rabbits' cages and hutches at the backyard of their compound which preserve their rabbits from theft and enabled the household members to assist the youths in rabbit production.

Table 4. Constraints faced in rabbit production among youths agripreneur

Constraints	ES Freq (%)	VS Freq (%)	MS Freq (%)	NS Freq (%)	M	D	Rank
Lack of support by government and research institutions	93(77.5)	18(15.0)	3(2.5)	6(5.0)	3.65	VS	1st
Inadequate extension program or contacts	66(55.0)	36(30.0)	14(11.6)	4(3.3)	3.36	VS	2nd
Poor access to credit	71(59.2)	19(15.8)	6(7.5)	14(17.5)	3.16	VS	3rd
Pest and diseases infestation	42(35.0)	38(31.6)	27(22.5)	13(10.8)	2.90	S	4th
High cost of housing	24(20.0)	54(45.0)	26(21.6)	16(13.3)	2.71	S	5th
Termite attack	26(21.6)	40(33.3)	40(33.3)	14(11.6)	2.65	S	6th
High cost of feeds	16(13.3)	56(46.7)	28(23.3)	20(16.7)	2.57	S	7th
High risk of theft	13(10.8)	33(27.5)	29(24.2)	30(37.5)	2.13	NS	8th
Marketing problem	15(12.5)	24(20.0)	34(28.3)	47(39.2)	2.06	NS	9th
High cost of labour	1(0.8)	12(10.0)	38(31.7)	69(57.5)	1.55	NS	10th

Note: freq. = Frequency, VS = Very severe, S = severe, MS = moderately severe, NS = not severe, M = Likert mean, D = decision.
Source: own study.

CONCLUSIONS

This study investigated agripreneurship among youths viz-a-viz the profitability of rabbit production among youth agripreneurs to increase youths' participation in agripreneurship. The study revealed that the majority of the youth engaged in rabbit production were males, single, had access to the market, and sourced their capital through personal savings. The important factors motivating agripreneurship development among youths were to acquire personal wealth, to boost income, to achieve what one wants to have in life, to be financially independent, to be self-employed, for personal satisfaction

and growth, for high self-esteem, desire to do a new thing, reputation and recognition, and to contribute to their household income and needs. The study has shown that rabbit production among the youth agripreneurs was profitable. Rabbit production had a net profit of 339,193.56 NGN (826.21 USD), an operating ratio of 23%, and a return on capital invested of 3.41. Numerous constraints were limiting the effectiveness of rabbit production among the youth agripreneurs. These constraints were pest and diseases infestation, poor access to credit, inadequate extension programs or contacts, high cost of housing, high cost of feeds, termite attack and lack of support or interest by government and research institutes. Despite the numerous challenges faced by the youths, the rabbit production industry will do well when these constraints are reduced drastically.

Based on the findings of this study, with a view to promoting rabbit production among the youth as a profitable venture, the study recommends that there should be an awareness creation among the youth about the importance of rabbit production to encourage more participation and improved standard of living. There should also be an information program to the public on the nutritive benefits of rabbit meat to enhance its consumption to solve the malnutrition problem. This would also enhance the marketability of rabbit meats. There is also a need for the government's active support in disease control through vaccination and training for rabbit farmers to enhance adequate technical know-how. Government can also support the youth agripreneurs through the provision of rabbit farm clusters where there will be stronger and safer housing, biosecurity, security, availability of veterinary centres and adequate provision of drugs. There is a need for adequate visits and contacts from extension agents to the youth rabbit farmers. These change agents should be well equipped with knowledge, techniques and skills in rabbit rearing to be diffused to the youth agripreneurs. This could bring about an increase in animal production and a higher protein intake. Government should support and encourage youth rabbit farmers through the provision of farm inputs (such as subsidized quality feeds and high-quality breeds of rabbits) for maximum productivity and profitability. Provision of adequate funding inform of loans and grants by the government to the youth will also encourage more participation in agripreneurship among the youths and increase the profitability of rabbit production. Microfinance banks, commercial banks and other lending agencies should increase youths' access to credit. This would go a long way to provide business opportunities to the unemployed youths and reduce the financial constraints faced by rabbit producers. Youth agripreneurs on their part should form cooperative societies to help them in the acquisition of loans at very low-interest rates to finance their businesses, training and a subsidized cost of production inputs to the members. Such groups can also help to reduce losses by procuring facilities for its members' usage and enjoyment of economies of scale.

The study is limited to youth involvement in rabbit production agripreneurship. Future studies should focus on youth engagement in crop production. Future research can also examine the drivers of agripreneurship intension among youths.

REFERENCES

Abu, O. A., Onifade A. A., Abanikannda, O. T.,& Obiyan, R.I. (2008). Status and promotional strategies for rabbit production in Nigeria. *9th World Rabbit Congress*, June 10-13, Verona, Italy. Management and Economy, 1499-1504.

Adanguidi, J. (2020). Analysis of the Profitability and Competitiveness of Rabbit Value Chains in Benin. *Journal of Agricultural Science, 12*(2), 151-159. https://doi.org/10.5539/jas.v12n2p151

Adenutsi, D. E. (2009). Entrepreneurship, job creation, income empowerment and poverty reduction in low-income economies. Accra, Ghana: GliSten Strategic Solutions.

Aduku, A. O.,& Olukosi, J. O. (1990). *Rabbit Management in the Tropics*. Living Books Series, G. U. Publications.

Akanbi, O. S, Oloruntola, D. S., Olatunji, S. O., & Mukaila, R. (2020). Economic analysis of poultry egg production in Kwara State, Nigeria. *Journal of Economics and Allied Research*, *4*(3), 57-71.

Akanni, K.A.,& Odubena, M.Y. (2003). Costs and Returns to Rabbit Production in Ijebu-Ode Local Government Area, Ogun State. *Nigeria Journal of Animal Production, 30*(2), 229-235. https://doi.org/10.51791/njap.v30i2.1491

Akinola, L.A.F. (2009).Economics of rabbit production in Gokan Local Government Area of Rivers State, Nigeria.In *Proceedings of 34th Annual Conference of Nigerian Society for Animal Production (NSAP) University of Uyo* (pp. 70-72). University of Uyo.

Baharuddin, G., & Ab Rahman, A. (2021). What is the most effective antecedent for developing entrepreneurial intention among Muslim youth in Indonesia? *Entrepreneurial Business and Economics Review, 9*(1), 75-88. https://doi.org/10.15678/EBER.2021.090105

Bairwa, S. L., Lakra, K., Kushaha, S., Meena, L. K.,& Kumar, P. (2014). Agripreneurship development as a tool to the upliftment of agriculture. *International Journal of Scientific and Research Publications,* 4(3), 1-4.

Baruwa, O. I. (2014). Profitability and constraints to rabbit production under tropical conditions in Nigeria. *Journal of Livestock Science*, *5*, 83-88.

Ben Moussa, N., & Kerkeni, S. (2021). The role of family environment in developing the entrepreneurial intention of young Tunisian students. *Entrepreneurial Business and Economics Review, 9*(1), 31-45. https://doi.org/10.15678/EBER.2021.090102

Cherwon, A. K., Wanyoike, M. M.,& Gachuiri, C. K. (2020). Rabbit production practices in Kiambu County, Kenya. *International Journal of Livestock Production, 11*(4), 114-121. https://doi.org/10.5897/IJLP2020.0719.

Estahbanaty, S.S.M. (2013). How to increase agriculture entrepreneurial skills. *European Online Journal of Natural and Social Sciences*, *3*(2), 1244-1251.

Fauzi, M.A., Martin, T., & Ravesangar, K. (2021). The influence of transformational leadership on Malaysian students' entrepreneurial behaviour. *Entrepreneurial Business and Economics Review, 9*(1), 89-103. https://doi.org/10.15678/EBER.2021.090106

Federal Ministry of Youth and Sports Development (2019). *Enhancing youth development and participation in the context of sustainable development. National youth policy*. Retrieved from https://www.prb.org/wp-content/uploads/2020/06/Nigeria-National-Youth-Policy-2019-2023.pdf

Gubik, A.S., & Bartha, Z. (2018). The role of university in influencing the entrepreneurial intention of university students. *International Entrepreneurship Review*, *4*(3), 177-188.

Hassan, Z., Lashari, M.K., & Basit, A. (2021). Cultivating entrepreneurial culture among the students in Malaysia. *Entrepreneurial Business and Economics Review,* 9(1), 119-136. https://doi.org/10.15678/EBER.2021.090108.

Hernández, P.,& Dalle Zotte, A. (2010). Influence of diet on rabbit meat quality. In: C.de Blas & J. Wiseman (Eds.), *The nutrition of the rabbit* (pp. 163-178). CABI Publishing. https://doi.org/10.1079/9781845936693.0163.

Iheukwumere, C. C., Ahaotu, E. O.,& Nwoye, E. O. (2018). Studies on Benefits and Problems of Rabbit Production in Abia State, Nigeria. *International Journal of Animal and Veterinary Sciences*, 5, 23-28.

Karyaningsih, R.P.D., Wibowo, A., Saptono, A., & Narmaditya, B.S. (2020). Does entrepreneurial knowledge influence vocational students' intention? Lessons from Indonesia. *Entrepreneurial Businessand Economics Review,* 8(4), 138-155. https://doi.org/10.15678/EBER.2020.080408.

Kaur, M., Mann, S. K.,& Kaur, K. (2018). Agripreneurship – A tool to empower rural women. *Asian Journal of Agricultural Extension, Economics & Sociology,* 27(3), 1-8. https://doi.org/10.9734/AJAEES/2018/42015.

Khan, M.R. (2013). Mapping entrepreneurship ecosystem of Saudi Arabia. *World Journal of Entrepreneurship, Management and Sustainable Development, 9*(1), 28-54. https://doi.org/10.1108/20425961311315700.

Marcus, C. A.,& Onyeonoro, Q. C. (2018). Socio-economic factors militating against Rabbit meat consumption in Imo State, Nigeria: A study of Ihitte Uboma L.G.A. *Direct Research Journal of Agriculture and Food Science, 6*(3), 62-67. https://doi.org/10.26765/DRJAFS.2018.1956.

Mukaila, R. (2021). Nexus between real effective exchange rate misalignment and rubber export in Nigeria. *Economic Journal of Emerging Markets*, *13*(2), 123-133. https://doi.org/10.20885/ejem.vol13.iss2.art2.

Mukaila, R., Obetta, A. E., Awoyelu, F. E., Chiemela, C. J., & Ugwu, A. O. (2021). Marketing Analysis of Vegetables: The Case of Carrot and Cucumber Marketing in Enugu State, Nigeria. *Turkish Journal of Agriculture - Food Science and Technology*, *9*(2), 346-351. https://doi.org/10.24925/turjaf.v9i2.346-351.4000.

Ogbonna, O. A. (2015). Roles of households in Rabbit Production in Enugu-North Agricultural Zone of Enugu State, Nigeria. *Journal of Agricultural Extension*, *19*(1), 1- 9.http://dx.doi.org/10.4314.jae.v19i1.4.

Onifade, A. A., Abu, O., Obiyan, R.I., &Abanikannda, O. (2010). Rabbit production in Nigeria: some aspects of current status and promotional strategies. *World Rabbit Science,* 7, 51-58. https://doi.org/10.4995/WRS.1999.380.

Oseni, S. O., & Lukefahr, S. D. (2014). Rabbit production in low-input systems in Africa:Situation, knowledge and perspectives-a review. *World Rabbit Science*, 22, 147-160. https://doi.org/10.4995/WRS.2014.1348.

Rao, M.,& Kumar, M. (2016). Agripreneurship for sustainable growth in agriculture and allied sectors: A conceptual model. *Man in India*, *96*(5), 1633-1641.

Reissova, A., Šimsova, J., Sonntag, R., & Kučerova, K. (2020). The Influence of Personal Characteristics on Entrepreneurial Intentions: International Comparison. *Entrepreneurial Business and EconomicsReview, 8*(4), 29-46. https://doi.org/10.15678/EBER.2020.080402.

Sołek-Borowska, C., & Numprasertchai, H. (2018). Exploring entrepreneurial intentions of students: international perspective. *International Entrepreneurship Review*, *4*(3), 357-372.

Taiwo, B. B., Ogunride, I. I.,& Ogunsiji, O. (1999). *Reproductive and Growth Performance of rabbits raised of Forage Crops.* In A.d. Ologhobo, G.N. Egbunike, M.K. Adewumi, A.M. Bamgbose, E.A. Iyayi & A.O.K. Adesehinwa (Eds.), *Proceedings of the 4th Annual Conference of Animal Science Association of Nigeria (ASAN)* (pp. 108-109). ASAN.

Wardana, L.W., Narmaditya, B.S., Wibowo, A., Fitriana., Saraswati, T.T., & Indriani, R. (2021). Drivers of entrepreneurial attitude among economics students in Indonesia. *Entrepreneurial Business and Economics Review, 9*(1), 61-74. https://doi.org/10.15678/EBER.2021.090104.

Wilson, R. T. (2011). *Small Animals for Small Farms*. (Second edition). FAO.

Zamrudi, Z., & Yulianti, F. (2020). Sculpting Factor of Entrepreneurship Among University Students in Indonesia. *Entrepreneurial Business and Economics Review, 8*(1), 33-49. https://doi.org/10.15678/EBER.2020.080102.

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Conflict of Interest

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