EXAMINING YOUTH ENGAGEMENT IN AGRIPRENEURSHIP OPPORTUNITIES AS A MEANS OF SUSTAINABLE LIVELIHOODS IN MINING COMMUNITIES IN THE BIRIM NORTH DISTRICT OF GHANA

BY

EMMANUEL OSEI OPOKU

(10250136)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN AGRICULTURAL ADMINISTRATION

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DECLARATION

I, EMMANUEL OSEI OPOKU do hereby declare that except for the references cited, which have been duly acknowledged, this work, "EXAMINING YOUTH ENGAGEMENT IN AGRIPRENEURSHIP OPPORTUNITIES AS A MEANS OF SUSTAINABLE LIVELIHOODS IN MINING COMMUNITIES IN THE BIRIM NORTH DISTRICT OF GHANA" is the result of my research. It has never been presented either in whole or in part for any other degree of this University or elsewhere.

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EMMANUEL OSEI OPOKU

(STUDENT)

DATE: ...30...../...12...../2022.

This thesis has been submitted for examination with our approval as supervisors.

.....

PROF. IRENE S. EGYIR

(MAJOR SUPERVISOR)

DATE: ...30... /...12... /2022.

.....

DR. ABIGAIL A. ADAKU

(CO-SUPERVISOR)

DATE:30...../...12...../2022.

DEDICATION

To Hon. John Osei Frimpong, Member of Parliament of the Fourth Republic of Ghana, Birim North Constituency, and my lovely mother the late Regina Asi Nuamah. May her soul rest in peace.

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Emmanuel Osei Opoku

ABSTRACT

This study examines youth engagement in agripreneurship opportunities (AOs) as a means of attaining sustainable livelihoods in the Birim North District of Ghana. The study's specific objectives are to identify AOs that may be exploited as sources of employment and income generation, as well as to evaluate the socio-economic factors that impact youth's decision to engage in AOs and identify the constraints facing agripreneurs in the study area. By adopting the multi-stage sampling technique, a total of 220 youth were sampled from six different communities. Both qualitative and quantitative methods were used for the analysis. By employing the Likert scale technique, the most important AOs were identified. The binary logistic regression analysis was used to identify the socio-economic factors that influence the youth's decision to engage in AOs. To identify and rank the constraints faced by agripreneurs in the research area, Kendall's Coefficient of Concordance was utilized. The Likert scale analysis found twelve AOs, with livestock and speculative agripreneurship businesses like palm oil and grains aggregation dominating. The binary logistic regression analysis revealed that the most important socio-economic characteristics that positively influenced the youth's decision to engage in AOs were sex, employment status, and educational level. The most pressing constraints facing agripreneurs in the study area include lack of financial support, high inputs prices, and inadequate storage facilities for palm oil and grains. The study concludes that males who are employed and highly educated are more likely to engage in agripreneurship opportunities than their counterparts, though venturing into them is constrained by lack of financial support, high inputs prices and inadequate storage facilities. Based on the findings, the study recommends that any programme aimed at encouraging the youth in the Birim North District (BND) to engage in AOs should target livestock production enterprises and trading in grains and palm oil aggregation. Female participation, employment, and education are key components that need to be encouraged by policymakers to stimulate the adoption of agripreneurship. The financial institutions should create more avenues that enable the youth agripreneurs to access funds to support their agripreneurship venture. This could be done by designing a financial package with flexible terms of repayment for the youth agripreneurs in the BND. The government should continue to provide subsidies on farm inputs (seeds, fertilizers, weedicides, pesticides, etc.) and extend them to reach the youth in the BND. This will reduce the burden of purchasing inputs at high prices by the youth and increase their participation in AOs.

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ACRONYMS

AU	African Union
BAC	Business Advisory Centre
BNDA	Birim North District Assembly
DFID	Department for International Development
FAO	Food and Agriculture Organisation of the United Nations
FASDEP	Food and Agricultural Sector Development Policy
GDP	Gross Domestic Product
GLSS	Ghana Living Standard Survey
GSS	Ghana Statistical Service
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IMF	International Monetary Fund
IRD	Integrated Rural Development
IYF	International Youth Foundation
METASIP	Medium Term Agricultural Sector Investment Plan
MoFA	Ministry of Food and Agriculture
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
NEPAD	New Partnership for African Development
SLA	Sustainable Livelihood Approach
SSA	Sub-Saharan Africa
SRID	Statistics, Research and Information Directorate
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USDA	United States Department of Agriculture

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In many countries, agriculture has long been seen as one of the most important drivers of economic growth. For the vast majority of the world's population, it is the primary source of labour, income, and sustenance. This is especially true in countries where the bulk of the population lives in rural areas. According to Rao and Kumar (2016), almost 70% of India's population lives in rural areas and earns a living through agriculture and related businesses. Agriculture also employs more than half of the overall labour-force, according to the International Monetary Fund (IMF), and provides livelihoods for a large number of small-scale producers who account for roughly 80% of all farms in Sub-Saharan Africa (SSA). Aside, the sector ensures sustainable linkages among agro-based industries all over the world through provisions of raw materials. The sector also contributes to economic growth by contributing significantly to Gross Domestic Product (GDP) both domestic and international level as well as generating revenues for the government through exports earnings. In 2018, the agricultural sector accounted for 18.27 percent of Ghana’s GDP and 4 percent of the global economy.

Using the United States (US) economy as an example in a global perspective, the US Department of Agriculture (USDA) reported that agriculture, food, and related companies contributed $1.109 trillion to the US economy in 2019. This total accounts for 5.2 percent of GDP, according to the estimates. Agriculture and food employ 22.2 million full- and part-time workers, accounting for 10.9 percent of total US employment, according to the study. Direct on-farm employment accounted for roughly 2.6 million jobs in the United States, or 1.3 percent of total employment (USDA, 2020).

According to the Statistics, Research and Information Directorate (SRID), agriculture is acknowledged as a sector for poverty reduction in Africa (2016). Furthermore, it represents a significant portion of all African economies, and as a sector, it has the potential to contribute to major continental priorities such as poverty and hunger eradication, intra-Africa trade and investment growth, rapid industrialization and economic diversification, sustainable resource and environmental management, job creation, human security, and shared prosperity (Blein, et al. 2013). In many SSA countries, agriculture is also a potential option for stimulating growth, relieving poverty, and enhancing food security (Byerlee et al. 2008). According to the Organisation for Economic Co-operation and Development-Food and Agriculture Organization (OECD-FAO), agriculture accounts for 15 percent of total GDP in African countries on average, but it varies from less than 3 percent in Botswana and South Africa to more than 50 percent in Chad, implying a diversified range of economic systems in Africa. However, most African countries are developing countries that use low technology in production compared to some developed worlds that use high technology for agricultural activities. Meanwhile, by far, agriculture offers greater opportunities for growth, infrastructural development, and poverty alleviation in majorities of African countries (FAO, 2015).

Ghana is indeed an agriculture-based economy since the majority of the population is engaged in it as their main source of economic activities and livelihoods. Be that as it may be in the global and African economies, in Ghana, agriculture serves as a source of employment, income, revenue, alleviation of poverty, food security, reduction of hunger, source of livelihoods as well as contributing to the country's GDP despite its declined since 2016. According to the Ghana Statistical Service (GSS), agriculture accounts for 38.3 percent of overall employment in 2019, with service and industry accounting for 43.5 percent and 18.2 percent, respectively. This means, the agriculture sector is the second largest employer in Ghana's economy, following after the service sector (see figure 1.1).

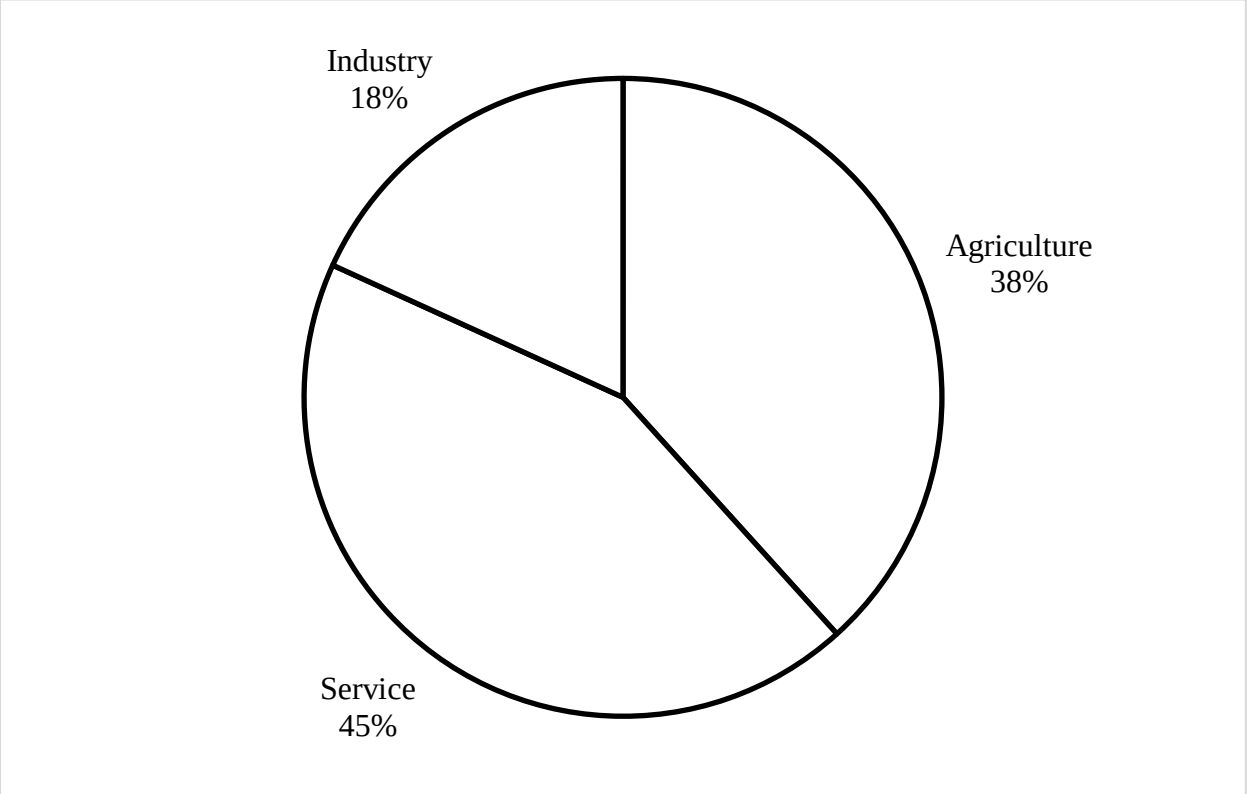

Figure 1.1: Proportion of the Total Labour Force by Sector

Source: Author's design based on GSS and GLSS, (2019) data.

In line with these important roles of agriculture, the Food and Agriculture Organization of the US reported that the development of the sector has been one of the major priorities for the Government of Ghana (FAO, 2015). By considering these facts and given the huge number of the youth cohort in which the majority (about 85%) are concentrated in SSA countries and their demographic characteristics, their engagement in agriculture activities becomes crucial in order to utilize the various opportunities available in the sector effectively. This calls for a paradigm shift. A shift that requires pro-activeness, innovativeness, creativity and a risk-taking mind-set among the youth. Thus, entrepreneurship in agriculture or agripreneurship becomes an indispensable tool and the need of the hour to curb the menace of unemployment, inadequate income, sources of livelihoods, obsolete agricultural practices, migration

to urban communities, especially in search of 'white coloured jobs', and the declining state of the country's GDP (see figure 1.2).

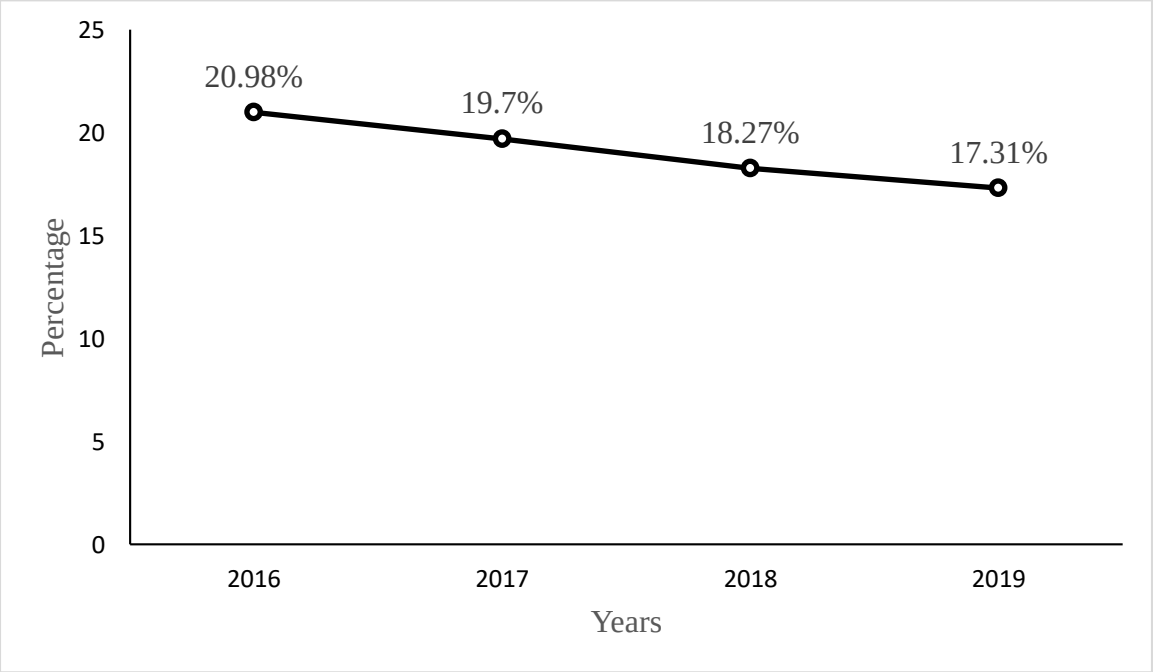

Figure 1.2: Declining State of Agriculture Share of the GDP (%), 2016 – 2019

Source: Author's design based on MoF, (2019) data.

Entrepreneurship in agriculture produces a 'new farmer'. A farmer who takes calculated risk to establish his/her own business, produce goods and/or services in the agricultural sector to meet market demand ultimately for a profit is called an agripreneur. Similarly, the application of entrepreneurial activities and principles in the agricultural sector is called agripreneurship. Thus, agricultural entrepreneurship and agripreneurship are synonymous to each other (Bairwa et al. 2014), and can be used interchangeably. Simply put, agripreneurship is a combination of agriculture and entrepreneurship. In other words, it is entrepreneurship in agriculture. With this regard, studies by Uneze (2013) and Lans et al. (2013) revealed that agripreneurship stems from general entrepreneurship. According to Dollinger (2003), entrepreneurship in agriculture or agripreneurship is a process of creating and innovating economic

structure for development or gain under risk and uncertainty in agriculture. Furthermore, agripreneurship, according to Volkmann et al. (2010), comprises taking the risks and embracing uncertainty in order to develop a commercial firm with the goal of producing a profit or receiving a return on investment. Ahmed et al. (2011) on the other hand, saw agripreneurship as an employment strategy that can lead to economic self-sufficiency for rural people but Nwibo et al. (2016) put it as a process of making agriculture a more appealing and profitable endeavour. According to Mujuru (2014), the absorption of strategic entrepreneurial skills is said to improve agricultural efficiency. Furthermore, an increase in agricultural productivity through agripreneurship can help to advance human development. As a result, having an entrepreneurial mind-set and smart resource management allow farmers to earn more money, and in emerging nations, successful entrepreneurial agriculture decreases poverty, creates jobs, and provides a steady source of income for the poor. Hence, a well-established agricultural entrepreneurship can bring sustainable development in any country (Mujuru, 2014). Furthermore, as Rezai, Mohamed, & Shamsudin (2011) point out, if a country's youth is equipped with agripreneurship skills, the country's agriculture will thrive, boosting the chances of food security for the country's rising population.

Agripreneurship generates a wide range of economic benefits, according to Nachimuthu et al. (2018), including increased agricultural productivity, the formation of new businesses, the development of innovative products and services, and the development of rural communities. Agripreneurship is an employment method that ensures independence and economic self-sufficiency, according to Uche & Familusi (2018). They also noted that agripreneurship may aid social and economic development by lowering poverty, boosting nutrition, and assuring economic food security. It will also result in the diversification of the economy and sources of income, as well as the development of jobs and entrepreneurial opportunities. As a result, agricultural entrepreneurship must be fostered in order to create jobs, enhance productivity, and strengthen the economy, as agriculture currently employs the country's largest workforce (Ibid), after the service sector. Furthermore, sustainable alternatives outside of

agriculture are limited; thus, a country's agripreneurship development is critical (Uche et al. 2018). Additionally, according to Bairwa et al. (2014), increased productivity, the development of new businesses that will result in job creation, product and service delivery improvements, and an increase in wealth will all benefit from the application and practice of agripreneurship. A study by Mujuru, (2014), has highlighted the importance of engaging the youth in agripreneurship opportunities, emphasizing that agripreneurship has the ability to contribute to the development of an economy by providing work options for the youth who live in the remote locations both directly and indirectly, helps to improve nutrition, food independence and security.

Ghana being one of the developing economies with more than 38 percent of the population involved in agriculture, the spirit of entrepreneurship among farmers needs to be disseminated throughout the country. This is because entrepreneurship is seen as one of the key engines for growth and development in many nations. It should be a matter of urgency and strategically positioned in Ghana to transform traditional agriculture to agripreneurship and this is believed to be possible through the engagement of the youth cohort. Additionally, data from the United Nations-Department of Economic and Social Affairs (UN-DESA) indicates that youth make up a large portion of the world's population, particularly in developing nations like Ghana. Furthermore, according to the International Labour Organization (ILO), 70.3 million youth aged 15 to 24 were unemployed in 2017, with that number predicted to surge up to 71.1 million. This raises a number of important concerns including how to produce enough food to meet the expected increase in food demands, and how to find decent and sustainable jobs to meet this large youth population. These concerns are important for the economy of Ghana because the country experiences a high youthful population (GSS, 2019) hence agripreneurship is the way to go. Youth in rural regions is a great resource, according to Allajabou & Bello (2014), World Bank (2013), and United Nations Educational, Scientific, and Cultural Organisation (UNESCO) (2002), as reported in Barau & Afrad (2017). They are not only more numerous, but they are also more

enthusiastic, bold, and often have innovative ideas that can contribute significantly to socio-economic growth if they are adequately handled and given opportunities to participate in development concerns in all sectors of the country. They also bring vigour, zeal, and innovation to the workplace, and when their willingness to contribute is paired with opportunity, they have the potential to revolutionize economic and social progress. Given these significant roles**,** it is believed that agripreneurship can convert an 'idle' youth into a productive youth in such a way that their stamina can be harnessed to boost productivity in all corners of the agri-sector. However, the utilization of agripreneurship opportunities by the youth is impeded by inadequate access to agricultural raw materials, financial assistance, marketing arrangements, information symmetry, new technology, or consultation services for a successful commercial farming development. Hence, a study that examines the youth engagement in agripreneurship opportunities as a means of sustainable livelihoods is a critical matter for economic analysts and policy makers. Such study will serve as a precursor for employment, self-reliance, wealth creation and economic development for both developing and developed countries. Therefore, with a sound understanding of agripreneurship, the youth in the Birim North District (BND) in particular are expected to perform the responsibility of managing their own businesses as agripreneurs despite the constraints that may be encountered. Further, it is also of great importance to identify those agripreneurship opportunities available in the district so as to bring them to the door step of the youth and examine the factors that influence their decision of engagement. This is not only necessary to release the untapped potentials of the youth but also a critical tool for developing a workforce for all the youth who are agripreneurs to take care of the agricultural sector and replace the aging population of farmers all over the world.

Accordingly, the main agripreneurship activities in the BND include crop production (both food and cash crops) which are done on subsistence and market-oriented levels. Trading of agricultural inputs and outputs are also rampant in the district. Due to an influx of many youth in search of jobs in the district especially in the mining company, there has been an increase in demand for food and agricultural products

in general. Thus, with little motivation the youth can take an advantage and enter into the sector so as to become agripreneurs. Agripreneurs, according to Nwibo et al. (2016), are economic innovators who initiate new ideas, create and exploit possible opportunities, develop innovative ways of carrying out diverse processes in agricultural input supply, production, and marketing. Thus, with limited access to land for farming in mining communities, it becomes necessary for the youth living in such communities to be innovators and adapt to new ways of doing things in agriculture which in this case is agripreneurship so that even the small land left can be used economically and sustainably to improve livelihoods.

1.2 Problem Statement of the Study

The youth in the Birim North District (BND) originally carry out agricultural activities as the main source of employment, income and livelihoods with the majority of them cultivating oil palm under the out-grower scheme of Ghana Oil Palm Development Company, an agro-processing company located at Kwae in the Kwaebibirem District. In 2002, Newmont Ghana Company Limited started exploratory studies and discovered gold deposits in the land used for agricultural activities in the district. In 2010, the company started acquiring the land from the youth for mining by following the legalities involved. A preliminary investigation conducted by the researcher in the communities understudy revealed that about 95 percent of the youth living in the study area recently have developed an interest in working in the Newmont Mining Company. At the same time, about 30 percent engaged in motor and tricycle riding in quest of 'quick money', neglecting the field of agriculture. This is a threat to the future of agricultural development, source of labour, and food security in the district and the nation in general as well as agro-based local industries that depend on agriculture for their raw materials if appropriate measures are not put in place. The situation was alarming and has led to over-reliance on job search in the mining company by almost all the youth in the study area. However, a common notion is that the company cannot employ all the youth in the district simultaneously coupled with employment requirements such as skills,

experience, and qualification necessities. Therefore, two main questions one would like to know the answers are; how long should a youth wait until he/she gets employment in the mining company, and what if he or she does not have the right qualifications? The youth must therefore do something of economic value on their own in order to sustain their livelihoods. In a situation like this, agripreneurship has been identified as the need of the hour (Veni & Lakshmi, 2018). At the same time, Barau & Afrad (2017) have already reported that in order to identify and meet the need of the present-day youth, market demand and establish long-term sustainability in the fight to end hunger, agripreneurship is required. A study by Dzanku & Aidam, (2013) has also reported that although there has been growth in other sectors such as service and industry, such growth has not been adequately backed by job creation; therefore, to create more jobs for the youth, agripreneurship is critical. In a similar vein, as according to the International Youth Foundation (IYF), a large percentage of the world's weakest youth live in rural areas with low economies, which provides the youth with limited opportunities for meaningful employment because of lack of knowledge in agricultural entrepreneurship. However, their numbers are increasing, which should be a big source of concern for everyone. On this point, Mukembo and Edwards (2016) asserted that applying agripreneurship concepts will allow one to find, develop, and manage viable agricultural enterprises/projects in the most efficient and sustainable manner for profit and improved livelihoods. Additionally, agripreneurship, according to Uche & Familusi (2018), is an employment approach that promotes independence and economic self-sufficiency.

Furthermore, given the importance of entrepreneurship in jobs and wealth creation in other businesses and industries such as banking, information and communication technology, and insurance, there is a worldwide recognition that applications of entrepreneurship in agriculture is important but has been overlooked for a long time (Fitz-Koch et al. 2017; Alsos, Ljunggren, & Welter, 2003). Therefore, a study that identifies the various agripreneurship opportunities and analyzes the variations in socio-

economic characteristics as factors influencing the decision of the youth to engage in those opportunities is very crucial. To this effect, this study has been set forth to address these three research questions:

1. What are the agripreneurship opportunities in the study area that can be used by the youth as sources of employment and income generation?
2. What socio-economic characteristics influence the decision of the youth to engage in agripreneurship opportunities?
3. What are the constraints do agripreneurs in the study area face?

1.3 Objectives of the Study

The major objective of the study is to examine the youth engagement in agripreneurship opportunities as a means of sustainable livelihoods in the Birim North District of Ghana.

The specific objectives are to:

1. Identify the agripreneurship opportunities in the study area that can be used by the youth as sources of employment and income generation,
2. Determine the socio-economic characteristics that influence the decision of the youth to engage in agripreneurship opportunities and
3. Identify the constraints agripreneurs in the study area face.

1.4 Justification of the Study

The Ghanaian government frequently formulates and implements policies targeted at boosting youth participation in agriculture in order to promote and increase economic growth and development and provide jobs for the youth. Despite government efforts to encourage the youth to work in agriculture, in the literature, there is evidence that youth show negative attitudes toward the industry, describing it as

having low economic returns and farmers having a low social status when compared to other workers in different sectors (Sandeepa & Salara, 2020). The situation is very prevalent in the district where the youth are disregarding agriculture as a career and searching for jobs in the mining company, engaging in motor and tricycle riding that will earn them 'quick money'. This is probably because the youth have not realized the several opportunities that are available in the agriculture sector.

In addition, increasing farm income has also been identified as one of the means through which the Government of Ghana seeks to revamp the agricultural sector as incorporated in Food and Agricultural Sector Development Policy (FASDEP II) objectives. In this way, agripreneurship has been identified as having the potentials to enable the youth to increase farm incomes. This has been affirmed by studies such as Veni & Lakshmi (2018) who reported that agripreneurship enhances farm incomes and increases the number of career prospects for persons living in remote areas in the economy. According to Bairwa et al. (2014), agripreneurship plays a variety of roles in the national economy's growth and development, including entrepreneurship development, which boosts income levels and job prospects in both rural and urban areas. Uche & Familusi (2018) recognized this and stated that a considerable portion of the population will get direct work and income as a result of agripreneurship, including the youth. And as it has been noted, agripreneurship provides job opportunities, income generation, poverty alleviation, food security, and rural livelihoods for the benefit of the youth living in a country when it comes to development (Nachimuthu, 2018). Furthermore, according to the World Bank (2013), youth bring energy, vitality, and innovation to the workplace, and their enthusiasm to contribute, when paired with opportunity, can have a significant effect on economic growth and social development. Also, former UN Secretary-General Kofi Annan stated "Any society that does not succeed in tapping into its energy and creativity of its youth will be left behind" (Kofi Annan Foundation, 2013). As a result, youth must be seen as performers, partners, and players. They are, in reality, strategic catalysts for new ideas that contribute to peace, human growth, and human society rejuvenation, especially in a globalizing

world (UNESCO, 2002). In addition, Heinert & Roberts (2016) argue that incorporating youth is critical, particularly in major industries such as agriculture, because they represent a growing segment of society and are, quite literally, the future decision makers. Furthermore, the UN-DESA stated that youth must be actively involved in sustainable development in order to achieve sustainable, inclusive, and stable societies, and that in order to avoid unemployment, poverty, gender inequality, conflict, and migration are all obstacles and difficulties to long-term development which are more prevalent in developing countries (UN-DESA, 2018). All these assertions make it relevant to research and bring to the attention of the youth the numerous agricultural opportunities that can be invested in as a source of employment and income generation in the quest for sustainable livelihoods in BND. This new mechanism, known as agripreneurship, will not only create a new source of employment, but can contribute to the radicalization of farming operations and the introduction of innovation in order to boost production per hectare (Sandeepa & Salara, 2020).

Moreover, many of the existing literature such as Uche & Familusi (2018), Nachimutu et al. (2018), Verma & Sahoo (2018) and Nib et al. (2016) mentioned a lot of constraints facing agripreneurs but the most pressing ones were not indicated in the studies. As a result, policymakers and economists will find it a tough time in determining which specific constraints need to be addressed in a given community and which socio-economic factors have a substantial impact on youth's decision to engage in agripreneurship opportunities. Thus, this study will bring to life the type of relationship which exists between the youth's decision to engage in agripreneurship opportunities and socio-economic characteristics, and further informs policymakers of the main constraints agripreneurs in the study area faced. In this way, identification of a particular area by the policymakers and economic analysts that need a conducive environment becomes straightforward. It is also believed that with a sound understanding and a deep knowledge in agripreneurship where the principles of entrepreneurship are applied in agriculture, more agripreneurs would be created to assist in curbing the challenges of youth

unemployment, low productivity, the recent decline of agriculture share of the GDP, youth migration, and food insecurity among others. The findings of this study could also be adopted and implemented by the institutions such as the Ministry of Food and Agriculture (MoFA), Rural Enterprise Project (REP) and Business Advisory Centres (BACs), agri-business companies, agri-business consultants, entrepreneurs for the benefit of their clients and the people living in their locality. It is also hoped that the study will contribute to academic knowledge and serve as a source of reference for future studies.

1.5 Organization of the Study

This research is divided into five sections. The first chapter is the introduction, which covers the study's background, problem statement, objectives, and justifications. The literature review is presented in Chapter 2, and Chapter 3 describes the methodology used to achieve the specific objectives, including theoretical and conceptual frameworks, data collection methods, including data sources, instruments, interview and sampling procedures, a description of the study area, and the scope and limitations of the study. The findings are presented and discussed in Chapter 4. The study's summary, conclusions, and recommendations are presented in Chapter 5, which is the last chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews and organizes the relevant theoretical and empirical literature on the issues under study into the following sections: The first section provides an overview of agripreneurship and its link in entrepreneurship, agripreneurship opportunities, economic importance of agripreneurship, and the differences between agripreneurs and non-agripreneurs. The youth in perspective and the sustainable livelihoods approach are presented in the second section. The third portion, on the other hand, examines the factors that influence youth's decision to engage in agripreneurship opportunities and the constraints that agripreneurs confront in pursuing agripreneurship activities. The fourth section, which is the final section, presents empirical reviews on the methods and models for estimating socio-economic characteristics affecting the decisions of the youth to engage in agripreneurship opportunities and conclude the chapter by summarizing the knowledge gaps identified in the literature.

2.2 Overview of Agripreneurship

Agripreneurship is a derivative terminology from the combination of agriculture and entrepreneurship. The whole idea is to introduce entrepreneurial activities and principles into agriculture and its allied sectors for a better and more economic gains. This is undoubtedly due to the observations of the critical roles entrepreneurship plays in other sectors such as banking, insurance, marketing and information technology. These roles include for instance job creation, self-employment, opportunity identification and utilization and income generation. As such, the origin and the meaning of entrepreneurship have been linked to agriculture called agripreneurship. Despite these, there are a number of accumulated evidences that show that research on entrepreneurship is often attributed to non-agricultural activities as observed

by researchers such as Alsos et al. (2012) who mentioned that the evidence demonstrating the exclusion of agriculture from entrepreneurship research is overwhelming. In addition, this is because agriculture is seen as a 'special case industry' as a result of the political and strategic nature of food security and the sector receiving public support such as subsidies. Consequently, the sector was seen, as being non-entrepreneurial as a result of such obscuring public policies (Hilmi, 2018). However, evidence was found in literature to support the proposition that farmers undertaking agriculture as economic activities are entrepreneurs. For instance, farmers take the risk and make decisions to apply inputs under erratic rainfall and even a period of uncertainties such as adverse weather conditions, diseases and pest infestations to produce an output as entrepreneurs do. For example, the quantity and quality of output derived from a bundle of inputs cannot be known with certainty (Moschini & Hennessy, 2001). There are also many risks and uncertainties that range from marketing, technological, financial, policy and human matters. This should entail that those farmers as operators in the agricultural sector are risk-takers and managers, regardless of whether they commercialize or do not commercialize their production outputs (FAO, 2015).

Small-scale farmers can also be called entrepreneurs, according to the report, because they raise funds from a variety of sources and invest it in productive assets, which may include a shovel or a bicycle. They make decisions and are willing to embrace both risks and benefits. And agriculture requires multiple decisions, including what to plant, which inputs to use and how to use them, when to plough, sow, and harvest; how much to preserve for household consumption versus how much to sell for profit; and how much to store. All of these decisions are frequently made in an economic environment in which markets are inefficient, if at all, and in which there is information asymmetry and other hazards such as poor weather and price swings, are present (FAO, 2015).Thus, seeing the context of operations in the agricultural sector, farmers are entrepreneurs, who may be called agripreneurs, which entail agripreneurship (Hilmi, 2018). One important question raised during a debate about agricultural entrepreneurship was whether agricultural entrepreneurship differed from entrepreneurship in non-

agricultural sectors, and as Lans et al. (2013) pointed out, the answer could be yes or no, depending on the type of research paradigm used by a researcher, while Fitz-Koch et al (2017) made it specific that agripreneurship is different from non-agricultural entrepreneurship and should be considered as a class of its own. This is further reinforced historically as several of the founding figures of entrepreneurship theory, such as Cantillon, Say, and Mill, wrote during a period when agriculture was the dominant industry, and many of the examples they used to illustrate entrepreneurship came from agricultural production (Alsos et al. 2012).

Agripreneurship, according to Mukembo & Edwards (2016), is the use of entrepreneurial principles to find, develop, and manage successful agricultural enterprises/projects for profit and improved livelihoods. Agripreneurship, according to Rao and Kumar (2016), is the entrepreneurial process used in agricultural or related industries. Furthermore, agripreneurship is the process of adopting new methods, procedures, and techniques in agriculture or related industries in order to improve output and earnings: agripreneurship therefore transforms agricultural activity into an entrepreneurial activity. Agripreneurship, according to Yousoff et al. (2015), is defined as agricultural entrepreneurial activities that are regulated to produce, distribute, market, or transport agricultural products for profit.

Generally, agripreneurship is defined as agriculture that is sustainable, community-oriented, and directly-marketed (Narendran & Ranganathan, 2015). Agripreneurship, according to Uneze (2013), is a notion unique to agriculture and derived from a broader perspective of entrepreneurship. Dollinger (2003) described agriculture entrepreneurship as the formation of creative economic organizations for the purpose of growth or profit in the face of risk and uncertainty. Estahbanaty (2013) defined agricultural entrepreneurship as a value creation process composed of a unique set of resources to exploit and take advantage of opportunities in rural areas. Agripreneurship, according to Bairwa et al. (2014), is a productive marriage of agriculture and entrepreneurship. Agripreneurship, according to Volkmann et al.

(2010), entails taking risks and accepting uncertainties in order to build a commercial enterprise with the goal of profit or return on investment. Agripreneurship, according to Macher (1999), is a lucrative marriage of agriculture and entrepreneurship, in which agriculture is viewed as a business venture. Kumari & Prasad (2017) called it agri-entrepreneurship and defined it as a way towards self-sustainability. Succinctly, agripreneurship is the discovery of new products, services, or production techniques, as well as new markets for new products and inputs that were not previously available (Needy, 2011).

This study, on the other hand, defined agripreneurship as a practice of taking the risk in an innovative way to create or develop a product or service in the agricultural sector in return for profit. It should be emphasized that in all these definitions, entrepreneurship and agriculture converged holistically in an attempt to provide a specific definition of what entrepreneurship in agriculture is, in other words, what agripreneurship is. The key terminologies used by the various authors in the process of propounding definitions for agripreneurship are summarized in the table 2.1 as an extension of what has been published by Hilmi (2018).

Table 2.1: Unique Terminologies Used in the Definitions of Agripreneurship

No.	Terminologies	Publication authors
1.	Value creation process using a unique set of resources.	Estahbanaty, (2019)
2.	Rural	Estahbanaty, (2019)
3.	New methods, processes and techniques in agriculture.	Rao & Kumar, (2016)
4.	Converts agricultural activity into an entrepreneurial activity.	Rao & Kumar, (2016)
5.	Principles, sustainable and improved livelihoods.	Mukembo & Edwards, (2016)
6.	Activities regulated to generate income.	Yousoff et al. (2015)

7.	Sustainable, community-oriented and directly-marketed agriculture.	Narendran & Ranganathan, (2015)
8.	Profitable marriage of agriculture and entrepreneurship.	Bairwa et al. (2014)
9.	Concept widely drawn from entrepreneurship.	Uneze, (2013)
10.	Identification of new products/services, inputs and strategies that did not previously exist.	Needy, (2011)
11.	Taking risks and accepting uncertainties to get profit or returns on the investment.	Volkmann et al. (2010)
12.	Innovative economic organization under risk and uncertainties.	Dollinger, (2003)
13.	A combination of agriculture and entrepreneurship for a profit whereby agriculture is seen as a business venture.	Macher, (1999)
14.	A practice of taking the risk in an innovative way to create or develop a product or service in agricultural sector in return for profit.	Author's, (2022)

Source: Hilmi, (2018).

From table 2.1, it is seen that agripreneurship differs from other non-agricultural entrepreneurship. This agrees with Fitz-Koch et al. (2017) who posited that agripreneurship is different from non-agricultural entrepreneurship and should be considered as a class of its own. Despite this, the definitions did not reveal whether agripreneurship entails traditional agriculture or not and whether subsistence farmers are also agripreneurs or not. This distinction is important because it is noted that most of the definitions emphasized profit generation and returns obtained from the investment and these are notably not characteristics of traditional and subsistence farmers. In these types of farming, the main concern of the farmers is how much to produce and how to feed the family instead of the marketing and profit aspect of production. Thus, the existing literature has attempted in one way or the other to separate entrepreneurship in agriculture from entrepreneurship in other non-agriculture businesses but did not give

the difference between agripreneurship and traditional agriculture and those practicing subsistence farming. As a result, this study argues that agripreneurship is not the same as traditional agriculture which involves using tools such as cutlasses and hoes to till and cultivate a piece of land and rearing of farm animals. In this case, the report which has been provided by FAO (2015) that all farmers, regardless of whether they commercialize or not, are agripreneurs is contentious and therefore must be reconsidered. This is because one of the basic ideas behind entrepreneurship is the ability to take the risk and enter into a business venture for a profit. Not all farmers are taking the risk and or doing the agribusiness. Also, it is difficult to tell if any whether subsistence farmers who produced for domestic consumption receive profit. In addition, the original entrepreneurship orientation construct emphasizes three important features of entrepreneurial behaviour: which are creativity, risk-taking, and pro-activeness (Lans et al. 2013) and where these three elements are lacking, there would be no entrepreneurship. In effect, the innovativeness and risk-taking aspect cannot be completely taken out so as agripreneurship is concerned. With this view, farmers who are risk averse, unable to adopt new methods of farming including adapting to new technology, unable to enter into the business world and cultivate what could be used only to feed the family are not agripreneurs. In practice, they are not taking any risk and therefore see agriculture as a way of life; something laid down by their forefathers and hence must participate. Therefore, it is not surprising that other researchers such as Faria & Mixon (2016) have described agripreneurs as 'new type farmers' whiles others such as Rao & Kumar (2016) described them as 'innovators'. It should also be mentioned here that so far as entrepreneurship or agripreneurship is concerned, the business aspect is a necessity where the business is translated to mean profit-making from a venture.

Because agripreneurship originated from entrepreneurship, a detail understanding of entrepreneurship is required. In this way, the link between agripreneurship and entrepreneurship becomes explicit and easy to apply. The word entrepreneurship originated from the French word 'entreprendre' which can be broken down into two words 'entre' and 'prendre' where 'entre' means between and 'pendre' means to take

(Barringer & Duane, 2016). Thus, according to Coulter (2003), the word refers to 'go between' or 'between-taker'. In short, it means to 'undertake'. According to Merriam Webster Dictionary, the phrase was first used in 1762 to describe a person who organizes, manages, and assumes the risk of a business or venture in order to gain money. And as according to Hilmi (2018), the term was first used in the seventeenth century by Richard Cantillon, an economist, to describe a person who takes the risks in pursuing opportunities cited in Casson et al. (2008), and who acted as a bridge between someone with capital, money, and he or she or a group of people would take on business opportunities. This later evolved in the eighteenth century to include someone (entrepreneur) who was taking a risk in terms of planning, supervising, organizing, and owning factors of production, while economist Say would go even further in the nineteenth century by proposing that the profit derived from capital ownership and that derived from entrepreneurial gains were distinct and separate (Coulter, 2003). Entrepreneurship, according to Onuoha (2007), is the process of creating new businesses or renewing existing ones, particularly new firms, in response to possibilities. Drucker (1985) mentioned that entrepreneurship is the act of making something new by using the existing resources with new wealth-producing capacity. Entrepreneurship is therefore about taking risks (Drucker, 1970 and Knight, 1920). A new entry is a vital act of entrepreneurship. Entering new or current markets with new or existing goods or services is one way to make a successful entry. The act of initiating a new endeavour, whether by a start-up, an existing corporation, or through internal corporate venturing, is known as a new entrance (Lumpkin & Dess, 1996). Entrepreneurship encompasses the study of sources of opportunity, the processes of discovery, evaluation, and exploitation of opportunities, as well as the people who discover, evaluate, and exploit them (Shane & Venkataraman, 2000). Entrepreneurship is a context-dependent on social process in which individuals and organizations create wealth by combining unique bundles of resources to produce new products and services and take advantage of market possibilities. (Hitt & Sirmon, Ireland, 2003). Within a new or existing organization, entrepreneurship is a mindset and a process for starting and growing a

business by combining risk-taking, creativity, and/or invention with sound management (Commission of the European Communities, 2003). As entrepreneurs working in non-agricultural firms such as banking, information technology, marketing and insurance are notably taking risks to come out with new ideas and manage businesses for profits so as farmers.

Entrepreneurship is different from entrepreneur. Entrepreneurs are those who pursue entrepreneurship. The traditional definition of entrepreneur is often attributed to Richard Cantillon, over three centuries ago, as a risk-taker who consciously commits resources to a commercial endeavour so as to seize opportunities in exchange for a return (Casson, 2002; Ahmad & Seymour, 2008). Entrepreneurs, according to Cantillon, are persons who acquire goods at a known current prices at a market and determine to sell them in the near future based on price differences. As a result, the entrepreneurs are risk-takers and carriers of uncertainties. They, according to Bolton & Thompson (2000), are individuals who frequently develop and innovate in order to build something of recognized economic value around observed prospects. Entrepreneurs, according to Hisrich (1990), are people who can show initiative, innovative thinking, coordinate social and economic systems to turn resources and situations into practical account, and accept risks and setbacks. They are the ultimate business's decision-makers and are in charge for its success or failure (FAO, 2019). They are distinguished by attributes such as creativity and ingenuity, and can transform ideas into reality through meticulous preparation and excellent administration (European Commission, 2012). According to Defoe (2001), entrepreneurs are “pro-jectors” implying that at least they are responsible for the management of a business. According to Joseph Schumpeter, the entrepreneurs are the innovators who put into action the changes within markets through the carrying out of new combinations. Schumpeter noted that these combinations can take many forms including; the introduction of a new good or quality thereof, the introduction of a new method of production, the opening of a new market, the conquest of a new source of supply of new materials or parts, and the carrying out of the new organization of any industry (Schumpeter, 1934). By implementing

change within markets and carrying out new combinations, Knight (1921) opined that entrepreneurs are those individuals who attempt to forecast and act upon change within markets and bear the uncertainty of market dynamics. They are always speculators and deal with the uncertain conditions in the future. Their success or failure depends on the correctness of their anticipation of uncertain events. If they fail in their understanding of things to come, they are doomed. They recognize and act based on the profit opportunities, more importantly arbitrageurs (Kirzner, 1973). Butler (2006) noted that entrepreneurs are complex combination of some interacting factors and these factors include possessing resilience, tenacity, opportunity spotting, and risk-taking. According to the study, these factors are called personality factors. Others include attitude, skills and motivation. The ability to network, think strategically, gain access to resources, business knowledge and acumen, interpersonal skills, and people management capabilities were called skills, while the attitude consists of having awareness of the importance of customer focus, the application of creativity and imagination, defined personal standards and values, and the perception of enterprise as a positive activity. On the other hand, motivation was defined as personal drive and ambition, the desire to make an effect, the need for achievement or self-satisfaction, a desire for prestige, the need to generate and amass wealth, and perform social duty. The study further reported that the presence, combination and interaction of these factors determine both how an entrepreneur engages in enterprising activities, and ultimately the degree of success that is achieved. The entrepreneurs are opportunity-driven operating beyond the subsistence level–not small family farmers. They are often seen as innovators and designers of new ideas and business processes. Entrepreneurs are usually creative, take opportunities and accept risks, and can quickly change business strategies to adapt to changing environments. They are often innovators (Kahan, 2012). They need not necessarily be the financier of the business venture, or the owner of the physical assets, but is the main or one of the main risk-takers and net profit beneficiaries (FAO, 2019). They exhibit a number of characteristics that distinguish them from conventional business owners. These characteristics according to Zhang & Cueto (2015) include

initiative, risk-taking, leadership, business and profit orientation, unconventional or out of the box thinking, never say die attitude, willingness and the ability to follow the new technology. They have the ability to turn their ideas into business opportunities. Many of them do not compromise on traditional jobs but completely enter into a new field and make a success of it through their own ingenuity or with some institutional or state help. They are very good in perceiving new business opportunities and usually exhibit positive biases in their perception that is, a bias towards identifying new business possibilities to meet the market needs. In this case, they demonstrate a pro-risk-taking attitude that makes them more likely to exploit the identified opportunities. Entrepreneurs are bold enough to go out there to bring out what has never existed there before or modify a system to a level that satisfies the needs of customers.

2.3 Agripreneurship Opportunities

Hills et al. (2004), Shane & Venkataraman, (2000) have opined that opportunities are the main focus of entrepreneurship and as mentioned by Busenitz et al. (2014) to its legitimacy should be a different field of study. According to Short et al. (2010), there could be no entrepreneurship without opportunities. Therefore, before exploring what constitute agripreneurship opportunities, it is important first of all to clarify what exactly constitute opportunities**.** Based on this, Oyson & Whittaker (2015) defined opportunities as entrepreneurially discovered or created situations in which new goods, services, raw materials, markets and organizing methods are conceived as having a potential for exploitation. According to Stevenson & Jarillo (1990), opportunities are future situations which deemed desirable and feasible. Hills et al. (1997) referred to opportunities as either the possibility to create new businesses or significantly improve the position of an existing business, in both cases resulting in new profit potential. Likewise, Kaish & Gilad (1991) defined opportunities as market gaps resulting from disequilibrium. In definition like these, opportunities are defined as unmet demand that currently exist in a particular market, although the potential for economic profit is not made explicit. Karlesky (2015) based on his research

findings also defined opportunities as new combinations of technologies and markets. He further opined that based on subjective beliefs new technology-market combinations can be created through (a) the development and application of new technologies, or (b) the application of existing technologies in new markets.

Choi & Shepherd (2004) for example, suggested that opportunities exist when there is customer demand for a new product. In addition, Joseph Schumpeter over a century ago noted five different types of entrepreneurial opportunities which are also crucial in agripreneurship. To mention them here are; the introduction of new goods, the introduction of a new method of production, the opening of a new market, the control of a new source of raw materials or half-manufactured goods, and the creation of a new type of industrial organization. Other scholars have emphasized the role market plays in their definition of opportunities. With this understanding and based on Stevenson & Jarillo's (1990) definition of opportunities, this study defines agripreneurship opportunities as those desirable activities that can either be created or discovered in the agriculture sector based on the alertness and capabilities of the individual to meet the unmet conditions of market demand. In the agricultural sector, these opportunities may be categorized into off-farm and on-farm activities. The majority of the off-farm agripreneurship opportunities have been noted to concentrate on the value chain. They include input procurement, distribution, and the hiring of implements and equipment such as tractors, seed drills, sprayers, harvesters, threshers, and dryers, as well as technical services like irrigation installation, weed control, plant protection, harvesting, threshing, transportation, and storage (Veni & Lakshmi, 2018). Aside from the provision of cattle feed, mineral combination, and forage seeds, similar off-farm opportunities exist in the animal husbandry sector for breeding, vaccination, disease diagnosis, and treatment (Veni & Lakshmi, 2018). Mukhopadhyay & Mukhopadhyay (2020) also emphasized four key areas where agripreneurship opportunities abound. Crop guidance, agricultural input sales, market linkages, and loan facilitation are among them. They also stated that agripreneurship potential existst in dairy, sericulture,

goat, rabbit, floriculture, fishery, shrimp farming, sheep farming, vegetable cultivation, and nursery farming. All of them are off-farm agribusiness options that can be profitably utilized by the youth.

Other researchers, such as Uneze (2013), included agric-tourism entrepreneurship and other service areas in the agriculture value chain, such as transportation, storage, and packaging, workshops and service center training, and agricultural implement repair. Food production systems will be stabilized by post-harvest technologies likeprocessing, packing, and storage, which will assure long-term food availability in the country and eliminate excessive reliance on food imports. Furthermore, the manufacturing and selling of farm machinery, tools, and equipment will open up new avenues for private sector participation and initiatives. Agro-industries can also play a role in agricultural operations by producing, distributing, and supplying inputs such as seeds, fertilizers, and other agro-chemicals. Food processing and marketing are two other areas where agripreneurship opportunities abound but are not yet fully explored (Ado, 2017). Within the extended food system, the agripreneur may also investigate the complete range of 'agribusiness options,' which can encompass logistics, services, cooking, and waste recycling. As the agricultural sector continues to struggle with waste and losses as a result of insufficient processing and storage, there are always opportunities to be taken advantage of.

On-farm opportunities on the other hand, include arable and tree crops production, vegetables production, weeds control, harvesting, application of pesticides and fertilizers. In addition, most farmers in the rural communities are unaware of the right planting distances and correct dosage of fertilizer application per plant per hectare. By organizing workshops and demonstrations for farmers under this circumstance, an opportunity is created. In brief, Otache (2017) outlined these agribusiness opportunities in which the youth in particular can venture into. They are apple, cashew, orange orchard, mango, palm tree (fruits), rubber, cotton wool and cocoa plantation farming businesses. The study further mentioned beans, carrot, cassava, rice, maize, yam, sweet and Irish potatoes, pineapple, sugarcane, flower,

vegetable, groundnut and onion farming businesses as another areas of opportunities. In animal production, he noted that cattle, goat, sheep, poultry and pig rearing are all lucrative areas of investment for the bulging youth. Others include grass cutter, bees, fish farming, mushroom production, rabbit and snail farming business. Other opportunities which need to be added to the above list are the taro (*Colocassia esculenta*) farming business, plantain and banana farming business, tiger nut (*Cyperus esculentus*) farming business and water-melon farming business. With these numerous agripreneurship opportunities, there is no doubt that Nwibo et al. (2016) mentioned that many business opportunities can be found in agriculture. Hence, the youth can take the risk and venture into any of them depending upon appropriate environment for an income and consequently a source of livelihoods.

2.4 Economic Importance of Agripreneurship

According to Kumar & Kumar (2019), the agriculture industry has the ability to contribute to a nation's revenue while also providing direct jobs and income to both the wealthy and the poor. At the same time, Mukembo and Edwards (2016) point out that agripreneurship invariably generates foreign exchange and aids in the resolution of some balance of payment issues through value addition and product exportation. This is especially true for countries whose primary source of international commerce is agriculture. Thus, to achieve economic growth through employment, more income and revenue to the economy of Ghana as a whole, agripreneurship is undoubtedly one of the key options to adopt realizing that, a significant number of the country's population depend on agriculture. In addition, Bairwa et al. (2012) stated that entrepreneurship in agriculture will lead to an increase in wealth while Casson et al. (2008) opined that entrepreneurship make a vital contribution to economic growth. This is still reinforced for example by Bairwa (2012) who opined that if entrepreneurship in agriculture would be applied and practiced accordingly, it will lead to a wide range of economic benefits including increase productivity, innovations in products/services delivery and development of a new agribusiness ventures leading to job creations

for the youth. Further, Uche & Familusi, (2018) have also posited that there are a lot of economic gains in agripreneurship comprising of reduction of poverty index, improved nutrition and food security for an economy. In addition, they noted that agripreneurship development will lead to diversifying the economy especially in an areas of income generation, providing employment and other entrepreneurial opportunities all of which has an economic benefit for a country. According to Hisrich et al. (2010), entrepreneurship has a role in the development of an economy by increasing the per capita output and income bases. These, they noted lead to a change in the structure of a society and businesses through an innovation systems. In addition, Ahmed et al. (2011) consider agripreneurship in terms of job creation strategy that has a potential of making people living in the rural areas self-sufficiency. Therefore, according to Kumari et al. (2020), this concept called agripreneurship will be one of the driving force to move agriculture from production to business and from subsistence to commercial in order to create more employment opportunities and income realizing that, normally, there are limited sources of livelihood options in other sectors such as industry and service. In this direction, Metcalfe (2008) stated that entrepreneurship is the motive force of internal economic change. Therefore, agripreneurship acts as catalyst for creating more jobs, raising productivity and growing the economy since for now, agriculture is the second highest employer of the labour-force in the country and reliable opportunities available for the majority of the youth outside agriculture are limited (Uche & Familusi, 2018). In line with this, agripreneurship is not only an opportunity for earning income and develop a country that require a greater emphasis, but also inevitability for improving the productivity and profitability in the agricultural sector.

2.5 Differences Between Agripreneurs and Non-Agripreneurs

It is essential to distinguish here who are agripreneurs and those who are not. According to FAO (2019), agripreneurs are those people who deliberately take the risk in order to allocate resources to an agribusiness venture so as to exploit the available opportunities in return for profit. Because they allocate

resources to a business, they are often considered as the primary decision-makers in which the success and failure of a business depend. They make differences in their businesses through growth at a scale in terms of how the job would be done, marketing and profit making, and enter the formal economy at least at some stages. They do not remain in the primary level of production for a very long period but also create and develop businesses all along agriculture value chain, comprising of processing, packaging, logistics, marketing, wholesaling, service provision or input supply activities (FAO, 2019).

Agripreneurs are those innovators who are capable of making change in the economy by serving new markets or creating new methods of doing things in the agriculture sector. Thus, agripreneurs may be individuals who undertake a variety of activities in the agricultural sector in order to become entrepreneurs (Ndedi, 2017). According to Rao & Kumar (2016), agripreneurs are innovators, who drives change in a rural economy, by adopting innovative ideas in agriculture and its allied sectors. They take the risk, adopt innovation, create new ways of doing things, and tap new markets. Therefore, agripreneurs are those who undertake a variety of activities in agriculture and its allied sectors to be entrepreneur: explicitly agripreneurs are risk-takers, opportunists, and initiators who deal with the uncertain agricultural business environment of the farm (Tripathi & Agarwal, 2015). Bairwa et al. (2014) put it in this way; agripreneurs are people who carry out the various activities in the agricultural sector in order to become entrepreneurs. Agripreneurs, according to Nagalakshmi & Sudhakar (2013), entrepreneurs whose primary business is agriculture or agriculture-related. Agripreneurs are self-employed business persons who make money in the agricultural industry by pursuing a business idea (Aleke, Ojiako, & Wainwright, 2011). Agripreneurs, according to Macher (1999), are people who operate an agripreneurship venture: they are people who perform agriculture (farming activities) at their own risk. Agripreneurs are those people who create new ways to invent, convert, or establish a product or service within the agricultural value chain, including value addition to current products, while also taking the risks (Tripathi & Agarwal, 2015; Bairwa et al. 2014; Nagalakshmi & Sudhakar, 2013; Singh & Sharma,

2012). It is now sufficient to see why agripreneurs are different from other farmers. For instance, it is seen in the definition of Rao & Kumar, (2016) that agripreneurs are innovators who are capable to drive change in a rural economy. They attempt to be entrepreneurs (Nagalakshmi & Sudhakar, 2013; Bairwa et al. 2014). They manage agripreneurship venture (farm activities) under their own risk (Macher, 1999). In addition, Ndedi, (2017) pointed out some attributes that in general describe agripreneurs. They must be proactive, curious, determined, tenacious, visionary, industrious, honest, innovative, and creative, as well as possess good management and organizational abilities. According to modern and indigenous knowledge, the farmer entrepreneurs are also required to have exceptional foresight in terms of resources and environmental restrictions, as well as the ability to learn from others and their own experience (Estahbanaty, 2013). Farmer-entrepreneurs are market-focused, forward-thinking, and willing to take measured risks, develop new goods, adopt new technology, and innovate in their application. They are willing to make their firms more sustainable as they give greater attention to their long-term existence. These new breed of farmers are continuously looking for new methods to grow, improve, extend their business, and incorporate new farming technologies (Faria & Mixon, 2016). According to Damarla & Kumar (2015), entrepreneurial farmer are one who seize possibilities. Farmers with an entrepreneurial spirit take many different decisions regarding their farm activities in the framework of the value chain, which affect the profits of the farm business until the product reaches the final user, passionately, excitedly, and attentively. Agripreneurs, according to Carr & Roulin (2016), are individual who work in the food system, preferably in a rural setting but not always. They see a market potential to produce food directly such as vegetables, fruit, dairy, meat, fish, and grains, using new and sustainable farming methods. The distinctive features that distinguish agripreneurs from other farmers are presented in table 2.2.

Table 2.2: Some Unique Characteristics of Entrepreneur Farmer (Agripreneur)

	Descriptions of who are agripreneurs	Publication Author's
1.	Risk takers and key decision makers who determine whether a company succeeds or fails.	FAO, (2019).
2.	Entrepreneurs are innovators who promote economic development and engage in a wide range of agricultural activities.	(Ndedi, 2017; Bairwa et al. 2014; Rao & Kumar, 2016)
3.	By embracing creative ideas in agriculture and related industries, an agripreneurs tap new markets, take risks, and promote change in a rural economy.	Rao & Kumar, (2016)
4.	Work in a food system that is based in, but not restricted to, a rural setting.	Carr & Roulin, (2016)
5.	A new kind of farmers who embrace new farming technologies and are committed to making the farm business more sustainable (in the long term).	Faria & Mixon, (2016)
6.	Innovative and environmentally friendly production processes are used.	Carr & Roulin, (2016)
7.	Make the most of opportunities.	Damarla & Kumar, (2015)
8.	In the agricultural industry, invent new ways of doing things (innovators).	Bairwa et al. (2014)
9.	Have exceptional foresight in terms of resources and environmental limits, as well as the ability to learn from others and their own past, based on modern and indigenous knowledge.	Estahbanaty, (2013)
10	Self-employed business owners.	Aleke, Ojiako, & Wainwright, (2011)
11	Manage an agripreneurship venture under their own risk.	Macher, (1999)
12	Persons or a group with the legal authority to use or exploit land or other associated elements for agricultural, forestry, or mixed-use purposes.	Suarez, (1972).
13	Innovators who take risks to create or develop a product/service of economic value for profit.	Author's, (2022)

Source: Hilmi, (2018).

From table 2.2 above, the characteristics of agripreneurs have been revealed. These characteristics typically distinguish agripreneurs from other farmers who are not agripreneurs. This study summed these characteristics into three main points; that all agripreneurs are risk-takers, that all agripreneurs are innovators and that all agripreneurs are developers. With these characteristics, a classic question that can be posed is, are all farmers agripreneurs? It is therefore argue that not all farmers are agripreneurs except

those who possessed the three characteristics given above. It is a necessity for agripreneurs to take risks irrespective of the scale of their business. That is, whether the scale of production is commercialized or not. At this point, it is not surprising that Drucker and Knight opined that entrepreneurship is about taking the risk. However, taking risks alone cannot be translated into tangible or physical object with economic value and this explains why it is also a necessity for agripreneurs to be innovators or developers or both. The innovators and developers seem synonymous; however, they are not. Being an innovator refers to the ability to create or discover something new that never existed in the market place before, based on the risk taken in return for profit. Being a developer on the other hand simply means the ability to develop or expand an already existing business based on the risk taken in return for profit. Individuals who apply these principles become 'new farmers' and they are those specifically called agripreneurs. Therefore, it is posited here that whenever these three key attributes are lacking, a farmer cannot be described as agripreneur and therefore all farmers are not agripreneurs. The definition of 'farmer entrepreneur' devised by Faria & Franklin (2016) concurs with this proposition that not all farmers are agripreneurs. Farmer entrepreneurs, according to their definition, are individuals who are market-oriented, forward-thinking, and willing to take measured chances in developing new products, embracing new technology, and modernizing their use. They went on to say that, as a result of globalization and greater market integration, farmer entrepreneurs are held more accountable for shifts in market demand related to changes in preferences, trends, and fashions, and that, farmer-entrepreneurs are more connected to supply chains, integrated in industry, and active in the creation of new networks than traditional farmers.

In addition, Sandeepa & Sarala, (2020) mentioned that for an individual to be a right agripreneur, he or she must possess the risk-bearing capacity and quest for knowledge in the agriculture sector. In a similar view, Macher (1999) noted that agripreneur operates agripreneurship venture (farm activities) at his/her own risk. Furthermore, according to FAO (2013), a farmer-entrepreneur creates a clear mental picture of what is feasible and the future he (or she) desires. He understands that the market determines

what is achievable. The farmer-entrepreneur is constantly on the lookout for new business prospects. He (she) is aware that the market offers fresh chances. Profits are important to the farmer-entrepreneur. He (she) understands that the market is where profit is made.

2.6 The Youth in Perspective

The literature's notion of youth varies from country to country. As a result, there have been numerous definitions employed in the literature. Individuals between the ages of 15 and 24 are defined as a youth by the United Nations General Assembly, without regard to other classifications used by member nations. This concept was proposed during the International Youth Year in 1985, and it was primarily for statistics purposes in order to improve the design of youth development programs. The World Development Report (2007) broadened the definition of youth to encompass all people aged 12 to 24. Food and Agriculture Organization of United States based on its global programmes for the youth development in rural areas defined youth as individuals that fall within the age bracket of 10 to 25 years. These definitions of the youth, stating age range of 10 to 25 years seemingly contains 'in-school category' and it will therefore be difficult in practice to be used to develop a framework that deals with farmers in general. National Youth Policy of Ghana (2010) defines "youth" as "persons who are within the age bracket of fifteen (15) and thirty-five (35) years". Youth is also a time of transition from a family-dependent childhood to adulthood and absorption into society as a responsible citizen. As a result, the term "youth" is frequently used to refer to people who are in the process of transitioning from childhood to adulthood, which includes processes such as sexual maturation and increasing social and economic independence from parents, as well as others who care for them (Bennell, 2007).

According to the Ghana Statistical Service-Population and Housing Census (2010) the youth constitutes about 35.1percent of the population. Because this study is about entrepreneurship in agriculture, it is appropriate to adopt the definition given by the National Youth Policy of Ghana in order

to increase the chance of interviewing the youth who are farmers, in other words, those who are agripreneurs. This definition is also consistent with Kenya, Tanzania and the African Union (AU) definition of youth. According to the Food and Agriculture Organization of the United Nations (FAO), youth can make major positive contributions to economic growth, social and environmental benefits. This is believed to be possible through agripreneurship. Notwithstanding, the youth are mostly faced with the challenges of unemployment and underemployment in the most African continent which has been noted to have the youngest population. To address this, FAO (2019) stated that fostering entrepreneurship, particularly agripreneurship, is an important element of the solution for producing jobs for the world's rapidly growing youth population. Furthermore, ambitious young entrepreneurs require increased skills and education, as well as financial and capital resources, mentorship, and connections to professional networks.

Between 2005 and 2035, the global youth population will grow by 26 percent in Sub-Saharan Africa (SSA) and 20 percent in Southeast Asia (Bennell, 2010). According to the FAO, roughly 55 percent of youth live in rural regions, although this ratio can reach 70 percent in SSA and South Asia. Youth aged 15-24 account for 36 percent of the total labour force in SSA, 33 percent in the Near East and North Africa (NENA), and 29 percent in South Asia. Developing countries will account for roughly 85 percent of the additional 500 million young people who will reach working age during the next decade. As a result, the rapid growth of the global youth population, particularly in Africa, should cause alarm among all, particularly governments and other responsible authorities. However, because the agricultural sector is so vital to life's sustainability and survival in terms of ending hunger, achieving food security, and improving nutrition, efforts to modernize agriculture into entrepreneurial ventures should be at the forefront of all efforts to attract the youth into agripreneurship (Bennell, 2007).

The ability to engage youth in agripreneurship has the potential to alleviate the problems of an aging farm population while also increasing youth employment. This necessitates securing youth interest and participation in agriculture through a deliberate shift in policy, training, and promotion that specifically targets youth. These people constitute not just a society's productive backbone, a key source of ideas and innovations, but also the primary market for food consumption and, in many cases, the leaders and drivers of public opinion, public policy, and action (Naamwintome & Bagson, 2013). Being the drivers of public opinion and public policy, it is evident that with appropriate motivation the youth can help to transform Ghana agriculture sector to meet the aching challenges in food security, unemployment, poverty, social vices and rural livelihoods. According to the International Labour Organization (ILO), youth suffer a rising shortage of adequate jobs and high levels of economic and social insecurity, with worldwide youth unemployment standing at 74.5 million in 2013 and expected to rise further. The youth especially those living in the rural areas are normally hitched by inadequate access to infrastructure, quality education, decent jobs compared to their counterpart youth living in the urban communities. Youth must first be "ready for economic opportunity," according to World Vision International (2014), in order to have sufficient incomes and resources to sustain productive and satisfying lives. They recognized that so as sustainable livelihood is concerned, readiness alone is not sufficient. As a result, they proposed six further preconditions, which the report termed as "pathways" by which a "ready" youth might achieve sustainable livelihoods, and the more of them there are, the better the chances of success. In this way, the youth are sufficiently employed or self-employed, they receive fair and inclusive treatment at work, they work in a safe and healthy workplace, they engage in continual learning and development, and they are socially responsible and play an active role in their communities (e.g. social justice, responsibility, and environment). The report further mentioned that the global youth population in the year 2014 was 1.8 billion of which 85 percent constituting 1.53 live in developing

countries. With this, 40 percent were unemployed (Table 2.3) and this calls for appropriate remediation (World Vision International, 2014). Hence, agripreneurship is the way to go.

Table 2.3: Global Youth Unemployment Outlook

Global youth population	1.8 billion
Those living in the developing countries	1.53 billion (85%)
Unemployed	0.72 billion (40%)

Source: World Vision International, (2014).

2.7 Sustainable Livelihoods Approach

The Sustainable Livelihoods Approach (SLA) was initially mentioned in research papers in the 1980s, and it was based on the Integrated Rural Development (IRD) model, participatory development, basic requirements, food security studies, and other sector-wide approaches (DFID, 2003). To arrive at a more holistic view of poverty, the framework combines different sorts of analyses linked to households, gender, governance, and farming systems (Buechler, 2004). The framework depicts that livelihood is a dynamic concept that depends on many factors such as natural, economic/financial, and a number of capitals known as livelihood assets (Carney, 1998). Other factors include politics, terms of trade, agricultural intensification and extensification, organizational and institutional factors that combined to produce sustainable livelihood outcomes. Chambers & Conway (1992) define livelihoods as the capabilities, assets (including both material and social resources), and activities required to create a living. In simple terms as explained by Chambers (1995) livelihood is a means of gaining a living. Chambers & Conway went on to say that a way of life is sustainable if it can cope with and recover from stresses and shocks while maintaining or improving capabilities and assets without jeopardizing the

natural resource base. To put it another way, sustainable livelihoods are resilient and capable of meeting both current and future generations' requirements (Chambers & Conway, 1992). In this way, there is a strong expectation that the application of agripreneurship opportunities will enable the households to attain sustainable livelihoods as has been mentioned by Adesope et al. (2011), Ifeanyi-Obi et al. (2011), and Nzeh & Eboh (2010) who discovered that farming and commerce are the most important sustainable livelihood activities carried out by Nigerian rural residents.

2.8 The Five Livelihood Assets

Carney, (1998) termed the five different types of capitals found in the conceptual framework of the sustainable livelihood as livelihood assets. These assets consist of both tangible and intangible resources that the households combine to enhance their well-being. Human capital, natural capital, financial capital, social capital, and physical capital are the five types of capital. Based on the DFID, (2001) approach, the various capitals are explained below.

Human Capital

Human capital refers to several qualities of people's personalities such as skills, knowledge, job capacity, and good health that, when combined, enable persons or individuals to pursue various livelihood strategies that improve livelihood results (DFID, 2001). These sort of capitals, according to DFID, are factors of the amount and quality of labour available at the household level. Human capital varied depending on household size, educational and skill levels, health status, and leadership potential, according to the study. Human capital is also a prerequisite for the other four types of capital.

Financial Capital

Financial capital refers to the financial resources that individuals or households employ to attain their livelihood goals. They include liquid assets such as livestock and jewelry that can be converted to cash

at any time, as well as available stocks such as savings that can be stored in a variety of formats; cash, deposit, or liquid assets that can be converted to cash at any time (DFID, 2001). Financial capital can also be obtained or provided by financial institutions in a form of credits and loans in which case liabilities may be attached. Financial capital is the most versatile of the five forms of assets in the sustainable livelihoods framework, since it can be easily transferred to other types of capital or utilized directly to accomplish livelihoods objectives. Other common financial resources are credit, remittances and businesses**.** Despite these, financial resources have been observed to be the least asset normally available to the poor, making it difficult for them to realize better livelihoods outcomes. Moreover, in terms of access to financial capital by women, according to DFID (2001), globally, over 70 percent of women living in the rural regions are poor.

Natural Capital

It represents the natural resource stocks that people rely on when pursuing their sustainable livelihoods outcomes. Trees, land, forest, rivers, clean air, coastal resources, and other natural resource stocks provide direct and indirect benefits to people. The relationship between natural capital and livelihoods is particularly essential in rural settings, according to Marchetta (2011), because most shocks in rural areas are caused by damage to natural assets.

Physical Capital

Physical capital consists of fundamental infrastructure and physical goods that can be used to support people's or households' livelihoods. For instance, improved and affordable seeds, reliable and affordable irrigation systems, affordable transport systems, energy/electricity that is affordable, the shelter of sufficient quality, and durability in order to be more productive and meet their fundamental necessities in order to achieve their livelihood goals.

Social Capital

Social capital refers to both official and informal social interactions, as well as social resources, from which people can draw a variety of chances and benefits to improve their lives. People can increase their ability, skills, and knowledge to work with others by engaging in interactions with others through work or shared interests that increase their ability, skills, and knowledge to work with others, membership in more formal groups in which relationships are governed by accepted rules and norms, and building trusting relationships that facilitate co-operation, reduce transaction costs, and in most cases help in the development of safety networks among the vulnerable to achieve better livelihoods outcomes.

Succinctly, the sustainable livelihoods approach can be said to be the function of human, natural, financial, social and physical capital. Theoretically, this can be formulated as; $SLA = f(H_C, N_C, F_C, S_C, P_{C,\beta})$. Where the letters are the initials and the subscript *c* represents capital such that H_C = Human capital, N_C = Natural capital, F_C = Financial capital in that order and β accounts for other factors such as transforming and institutional structures. It must also be noted that each capital has its own specific components. Education, skills, knowledge, health, and labour, for example, are all components of human capital. Human capital, according to DFID (1999), is defined as "the skills, knowledge, ability to work, and good health that enable people to pursue various livelihood strategies and attain their livelihood objectives." Human capital is a measure of the quantity and quality of labour available in a household; it fluctuates depending on household size, skill level, leadership potential, and health status (DFID, 1999).

2.9 Livelihoods Strategies

People's livelihood strategies are made up of a variety of choices or possibilities that they apply to make the most use of the resources available to them in order to attain their livelihoods goals (Carney, 1998). These according to the framework, consists of natural and non-natural resources based. Migration is also

one of the strategies that people employ during the periods of shocks and crises. For instance, farmers are more likely to migrate during persistent drought, disease and pest infestation that affect their economic activities. Lack of employment in a particular area, on the other hand, may also cause people to migrate in search of jobs that better enhance their livelihoods.

2.10 Sustainable Livelihood Outcomes

According to DFID (2001) sustainable livelihoods framework, livelihoods outcomes consist of more income, enhanced well-being, quality education, improved food security, sustainable use of natural resources and reduced vulnerability. Further, within the framework, the vulnerability context constitutes trends, shocks, culture and environment while the transforming factor processes constitute the level of government, private sector and institutional factors such as laws and policies. In this case, whenever there are better interactions of livelihoods capitals, there is a higher chance of attaining better livelihoods outcomes. The framework for sustainable livelihoods, as used by Mazibuko (2018) is shown in figure 2.1.

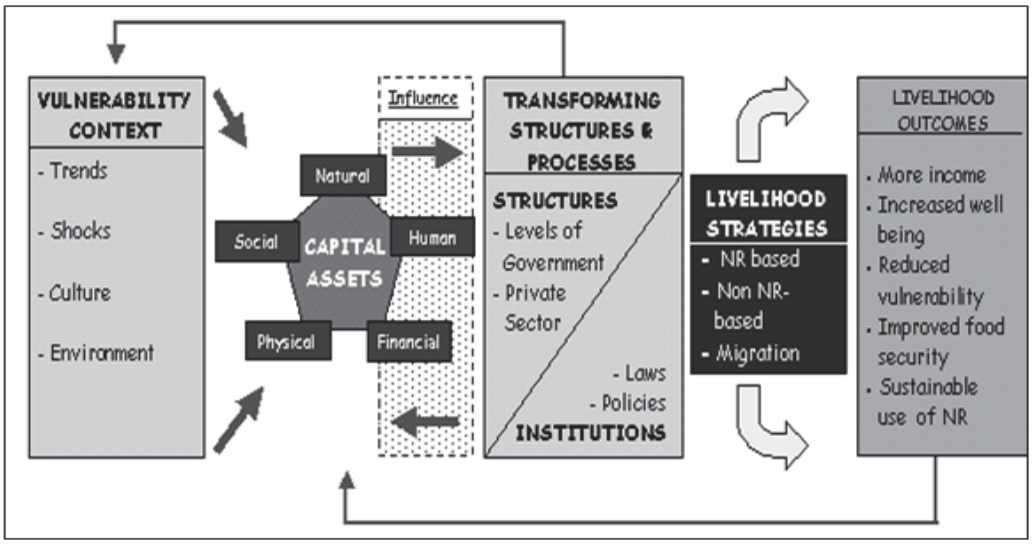

Figure 2.1: Sustainable Livelihoods Framework

Source: Carney, (1998).

Figure 2.1 depicts that livelihoods activities are diverse and do not depend on one particular activity. Thus, in agriculture, people may adopt the strategies of livestock and vegetable production, trading as in retailing of food crops, processed products and inputs, supply of raw materials to local industries, and services as in selling of labour for cash or in kind. The application of any of these multiple opportunities though not exhaustive coupled with taking some measured risk is termed as engagement of agripreneurship opportunities as a means of sustainable livelihoods with the idea that, the livelihood approach puts people first at the centre of development.

2.11 Empirical Reviews

2.11.1 Binary Logistic Regression Model

The Logit model, also known as the binary logistic regression model, is a closed form model that has been used to quantify the effects of factors that influence people's decision to engage in an activity (Twumasi et al. 2019). When the dependent variable has two possible outcomes or is dichotomous, this model is acceptable. According to Train (2009), the model has some flaws, including the inability to represent arbitrary taste diversity, inability to be utilized in conjunction with multi-dimensional data when different components are related throughout time, and the capacity to allow for prohibitive replacement patterns. Despite this, Train noted that the model's parameter estimates are asymptotically consistent and efficient hence can be applied for a dichotomous response.

The goodness of model fit is determined by using, Wald test both of which follow X^2 distribution with 1 degree of freedom and Pseudo R^2s consisting of Nagelkerke and Cox and Snell. These test statistics have values ranging from zero to 1. The higher the value i.e. value close to 1, the better the fit and vice versa.

2.11.2 Influence of Socio-Economic Characteristics on the Decision of the Youth to Engage in Agripreneurship Opportunities

According to Mukembo & Edwards (2016), a variety of variables encourage people to become entrepreneurs, and the same factors may motivate youth to seek agripreneurship. These are known as push and pull factors, according to Alsos et al. (2011) and Vyavahare & Bendal (2012). The pull factors, emerge from the individual's inner self or desire; in this way, their motives are intrinsic. Whereas the push factors primarily arise from situations and circumstances surrounding an individual, i.e., extrinsic forces. As a result, both extrinsic and intrinsic variables influence the youth's decision to pursue agripreneurship opportunities.

Twumasi et al. (2019) used a binary logit model to identify significant factors influencing youth decision to engage in agriculture on the one hand, and a truncated Tobit model to determine factors affecting the actual amount of capital used for agriculture by a youth who decided to participate in farming on the other. By using the price of farm inputs, income perception, access to credit and land, parent occupation, course of study, and other socio-economic characteristics of the respondents such as education, age, and gender as predictors, they discovered that 65 percent, 39 percent, 40 percent, 39 percent, and 48 percent of the respondents had access to credit, perceived that farm inputs (fertilizer, seed, etc.) prices were high, parents engaged in farming as their occupation, had basic dietary needs, and perceived that one can generate high income in farming respectively. They concluded that the intensity of youth participation in farm activities at postsecondary institutions was not encouraging. Furthermore, just 38 percent of the people polled had access to agricultural land. At 1 percent, perceptions of farm input prices, finance availability, fundamental farming knowledge, land availability, and income perceptions were all significant. Education was also shown to be substantial, accounting for a 5 percent significant level of the total. This suggests that there are considerable disparities in perceived agricultural

input prices, availability to credit, fundamental farming expertise, access to land, education, and income perceptions between participants and non-participants.

The study also indicated that, while farming provides many benefits to a nation, the majority of tertiary institution youth, 315 (70 percent) against their counterparts, 135 (30 percent), chose not to engage in farming. The findings also revealed that youth perceptions of farm input prices, youth level of education, youth access to credit, youth access to land, youth course of study at tertiary institutions, youth gender composition, and youth perceptions of farm income all have a significant impact on youth decision and intensity to engage in farming. As a result, they came to the conclusion that youth participation in agriculture is an important strategy to reduce unemployment, food insecurity, immoral social behaviours such as crime and drug misuse, and extreme poverty in developing nations like Ghana.

Another study by Nwibo et al. (2016) used multi-logit regression analysis on socio-economic characteristics such as age, gender, educational level, household size, marital status, total annual income, head of household, agripreneurship experience, farm size, and membership to farmers' associations to investigate the determinants of households' decision to become agripreneurs in Ishielu Local Government Area of Ebonyi State, Nigeria. The findings demonstrated that the coefficient of age was inversely associated to rural families' agripreneurship drive and was statistically significant at a 1 percent (P = 0.01) level of significance. As a result, they believe that the desire to become an agripreneur diminishes as people get older. As a result, younger household heads are keener to become agripreneurs, as such investment works as a buffer against the negative consequences of retirement, but such aspirations tend to decline as people get older. At a 5 percent threshold of significance (P = 0.05), the coefficient of household size was positive and significant. According to the study, this was in line with the initial a priori expectation because a big household size can provide relatively a low-cost source of labour. Again, as the size of a family grows, the home head must consider how to meet the family's consumption

demands. Making agriculture a business comes to mind as a way to generate enough cash to meet the expanding family demand.

The coefficient of education was also positive and significant at a 1 percent (P = 0.01) level, indicating that education is a driving force in agribusiness performance (Nwibo & Okorie, 2013). As a result, education is required to comprehend the nitty-gritty of entering any business for profit maximization. At a 10 percent level of probability, the yearly income coefficient was positive and significant. As a result, they indicated that as a household's income profile rises, so does the desire to expand into an agripreneurship enterprise. This was discovered to be in line with the a priori expectation, as increased income has been shown to motivate higher investment in various projects. At a 1 percent (P = 0.01) level, the coefficient of years of agricultural experience was also positive and significant. This means that a farmer's agribusiness experience has a significant impact on his or her decision to start a comparable business in the same location or somewhere when a similar opportunity exists. According to the findings, effective availability of important investment facilities such as electricity, good roads, and organized and proper information dissemination to rural households on how to discover feasible agripreneurship opportunities should be taken into account by the policymakers.

Another study by Levent & Catherine (2011) discovered that the entrepreneur's prior company experience has a beneficial impact on the firm's entrepreneurial orientation.

Another study by Ifeanyi-Obi & Matthews-Njoku (2014) collected data from respondents using a Likert-type scale of not significant, less significant, significant, and very significant with weights of 1, 2, 3, and 4 correspondingly. With mean values of 3.7 and 2.9, they discovered that farming and trading accordingly were the most important livelihood activities for rural people in the study area. According to the study's conclusions, the government should improve farming in terms of mechanization of farming activities in order to attract young graduates to the industry.

Adi (2007) conducted another study in Eastern Nigeria, identifying education as one of the primary predictors of livelihood strategy in the region. Levent & Catherine (2011) also discovered a significant positive relationship between entrepreneurs' educational attainment and a firm's entrepreneurship orientation, claiming that education equips business owners with the skills and reflective mindsets needed to understand customers and respond to their needs. As a result, a greater degree of education improves the entrepreneur's analytical and computational talents, as well as his or her communication skills.

Turkson & Naandam (2006) discovered that, in comparison to their female counterparts, males are better capable of managing family productive assets and are more likely to be decision makers in African societies.

Another study conducted in Latin America, revealed that the main impediment to continuing businesses by women in Latin America is the difficulty of obtaining financing Camelia et al. (n. d). Magagula & Tsvakirai (2020) also examined the factors that influence the intention of youth to participate in agripreneurship in South Africa. The findings of the study revealed that parental financial support, pursuing agricultural studies in school and perceived economic benefits accrued to agriculture positively influence a youth's intention to pursue agripreneurship but marital status were found negatively related to a youth's intention to pursue agriculture.

2.11.3 The Constraints Facing Agripreneurs

Constraints impose restrictions on a system and make it difficult to optimize resources efficiently. They act as barriers and make it difficult to attain fully the objectives of an organization. The constraints which may be used interchangeably with the words such as challenges, obstacles, limitations and barriers prevent the youth from achieving their goals of becoming successful agripreneurs. The constraints that rural households face, according to Nib et al. (2016), can be divided into three categories: socio-cultural,

knowledge-base, and economic issues. According to the study, socio-cultural issues include land tenure and a lack of investment infrastructure, while knowledge-based factors include a lack of technical know-how, insufficient extension agent training, and a lack of access to research data. Furthermore, high interest rates on loans, a highly competitive market, poor returns on agricultural investment, and a lack of access to financing are also economic considerations. The study found that these elements had an impact on agripreneurship. In other words, they operate as constraints to agripreneurship.

Despite the fact that most rural youth are already involved in informal agriculture in some way, according to another study by IYF (2014), they may not see it as an attractive or viable career option because of obstacles such as geographic isolation, unfriendly land-use policies, poor infrastructure, high transportation costs, and/or unavailable agricultural inputs. Inadequate information, limited skills, market instability, inadequate resources, and infrastructure, among other things, are impediments to the establishment of agripreneurial culture in poor countries. According to Carr & Rollin (2016) in UNCTAD (2015). It is difficult to build effective commercial agripreneurship firms given these constraints. Furthermore, the hand-operated hoe has remained the primary farm implement for working the soil, making agriculture tough and unappealing to rural youth for a long time. Despite agriculture being a major livelihood activities for the rural people, poor farm implements and other farm inputs, lack of technology in food processing and preservation, lack of a solid and reliable market for farm products, and bad infrastructure cause the youth to lose interest (Allajabou & Bello, 2014). Youth, on the other hand, are not necessarily hostile to agriculture or rural areas per se, according to a 2014 report by the International Fund for Agricultural Development (IFAD). Instead, they desire activities that may provide them with adequate livelihoods. As a result, they migrate to urban cities because of opportunities that may be difficult to discover in the rural communities.

Nachimuthu et al. (2018) also reported that most farmers lack access to agricultural raw materials, financial aid, marketing arrangements, new technology access, and advisory services for commercial farming. Another study conducted in India by Verma & Sahoo (2018) found that, while India has the greatest potential for growth in agripreneurship, with a wide range of opportunities in backward and forward linkages with secondary and tertiary sectors, it faces challenges such as inadequate infrastructural facilities, a lack of entrepreneurial culture among the population, and migration of workers to urban areas, among others, indicating that these constraints must be addressed through appropriate mechanisms.

2.12 Summary and Identification of Knowledge Gap

It was noted that literature has provided a lot of empirical definitions of agripreneurship. However, it was found that each definition has its own unique terminologies that distinguish it from the other and this could be attributed to differences in geographical, political, socio-economic, cultural background, framework, and the context to which the researchers want to establish. Despite these, all the definitions identified were in consensus that agripreneurship refers to entrepreneurship in agriculture, and that agripreneurs are those whose business is agriculture or agriculture-related ultimately for a profit. They exhibit characteristics of risk-taking, initiatives and essentially innovativeness and pro-activeness. Also, while the literature mentioned several agripreneurship opportunities, there was no operational definition for agripreneurship opportunities. As a result, the study fills this gap by defining agripreneurship opportunities based on Stevenson & Jarillo (1990) and Kaish & Gilad (1991) definition of opportunity. Thus, the study adds to academic discourse by defining agripreneurship opportunities as those desirable activities that can either be created or discovered in the agriculture sector based on the individual's alertness and capabilities to meet the unmet conditions of market demand. It was also unclear if traditional farmers producing for domestic use are agripreneurs in the literature studied. As a result, an attempt has been made to close this gap by arguing that such farmers cannot be defined as agripreneurs because they

do not make a profit from their produce or receive returns on their investments. Their major concern is how they will feed their family instead of seeing agriculture as a business.

The study also demonstrated the links between youth's desire to pursue agripreneurship opportunities and the socio-economic features of agripreneurs. Furthermore, despite the fact that many constraints have been mentioned in the literatures, no empirical analysis of constraints facing agripreneurs was identified in order to determine whether there is some degree of agreement among the respondents as to which constraint has the least or greatest influence on agripreneurship activity, given a specific locality. As a result, this study employs Kendall's Co-efficient of Concordance analysis to rank and investigate the degree of agreement or disagreement among the respondents in the ranking of constraints, which, as previously stated, will make it easier for stakeholders, economists, and policymakers in the study area to identify the most pressing constraints so that appropriate remedies can be suggested.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides the theoretical and conceptual framework of the study and deals with the methodologies adopted to achieve the specific objectives. Both qualitative and quantitative methods of analysis were used. The qualitative method focuses on the use of descriptive statistics to describe the findings while the quantitative method used econometric models to estimate the parameters and relationships among variables used in the study. Statistical packages such as SPSS version 20 and Excel were also used for the analysis. The final part explains methods of data collection and analysis, sampling techniques, interview procedures, sources of data, geographical area and the limitations of the study.

3.2 Theoretical Framework

Agripreneurship, according to Mukembo & Edwards (2016), is the use of entrepreneurial principles to identify, develop, and manage successful agricultural enterprises/projects for profit and improved livelihoods. Based on the rational choice perspective on the behaviour of an individual, a rational individual will be willing to engage in agripreneurship opportunities and use them to improve his/her livelihoods if and only if he/she derives the maximum benefits or satisfaction from them compared to the other available alternatives. As a result, given their limited resources, the youth in the study area will choose an opportunity that will provide them with the greatest level of satisfaction. The theoretical foundation of this study is therefore based on this assumption: Hence, if agripreneurship opportunities will enhance the livelihoods of the youth, then such opportunities may be represented as $j = 1$, and if they will not, then such opportunities can be represented as $j = 0$. Let Φ be the resources available to the youth in order to convert such opportunity into a profitable business venture and α be other factors such as

individual's socio-economic characteristics. Then, the livelihoods of the youth can be expressed as: $L_1 = L(1, \Phi, \alpha)$ if an opportunity will improve livelihoods and $L_0 = L(0, \Phi, \alpha)$ if it will not. Hence, $L(1, \Phi, \alpha)$ and $L_0 = L(0, \Phi, \alpha)$ are the benefits derived by the youth should they decide to engage in agripreneurship opportunities. However, in the deterministic approach where a stochastic term is introduced, the equation can be specified as: $L_1 = L(1, \Phi, \alpha) + \varepsilon_1$ and $L_0 = L(0, \Phi, \alpha) + \varepsilon_0$ where ε is the stochastic component representing an aspect of the benefits known by the youth but unobserved or latent to the researcher. The youth is assumed to be rational and knows the resources (Φ) to be used, the cost (C) to be incurred and has the ability (Λ) to become agripreneur. Therefore, the equation can be written as; $L_1 = \Lambda(1, \Phi - C, \alpha) + \varepsilon_1$ and $L_0 = \Lambda(0, \Phi - C, \alpha) + \varepsilon_0$. The presence of the stochastic term, ε makes it possible to make probability statement about the decision of the behaviour of the youth. Hence, $P = P[\Lambda(1, \Phi - C, \alpha) + \varepsilon_1]$ and $P = P[\Lambda(0, \Phi - C, \alpha) + \varepsilon_0]$. All other things being equal, the youth will be willing to engage and use agripreneurship opportunities as sources of employment and income generation to improve their livelihoods if and only if the satisfaction derived from utilizing the opportunity is greater than other existing alternative opportunities. Therefore, the equation can be explicitly be written as: $P = P[\Lambda(1, \Phi - C, \alpha) + \varepsilon_1] > P[\Lambda(0, \Phi - C, \alpha) + \varepsilon_0]$. Let $\Lambda(1, \Phi - C) = \beta_1$ and $\Lambda(0, \Phi - C) = \beta_0$, then, the equation can be further expressed as: $P = P(\beta_1 \alpha_i + \varepsilon_1 > \beta_0 \alpha_i + \varepsilon_0)$. By rearranging the common terms on one side, the equation becomes; $P(\beta_1 \alpha_i - \beta_0 \alpha_i > \varepsilon_0 - \varepsilon_1)$ which is appropriate and suitable for the study as it makes it possible to determine the benefits/satisfaction the youth would derive should they decide to engage and use agripreneurship opportunities as sources of income generation. The other two assumptions made were that the satisfaction theory employed is additive and separable and that the benefits derived by the individual vary as a random variable across different opportunities, enterprises, projects, investments, jobs, products, or services.

3.3 Conceptual Framework

With limited access to land for agricultural activities in mining-affected communities, it becomes necessary for the youth living in such communities to be more innovative and diversify into a new approach of agriculture in such a way that even the small land left can be used more economically and sustainably to improve livelihoods. Thus, engagement in agripreneurship or entrepreneurship in agriculture becomes crucial in such communities. The conceptual framework of the study describes step-by-step the factors that determine the youth's decision to engage in agripreneurship opportunities available in the agricultural sector. The centre of the figure depicts the general opportunities available in agriculture which can be relied on as sources of employment, income generation, and ultimately improvement of livelihoods. However, the possibility of this to some large extent depends firstly on the identification of the sub-opportunities under each broad activity such as farming, livestock or trade and or service. In this direction, Nwibo et al. (2016) have mentioned farm inputs supply, farm production and farm processing/distribution as various areas in which agripreneurship opportunities abound while trade, livestock and non-traditional agricultural activities have also been considered in this study. In addition, Otache (2017) listed thirty-one agripreneurial businesses that the youth can venture into. However, the decision of the youth to venture into any of the opportunities is affected by institutional factors which include access to financial support, market and membership of an organization and socio-economic characteristics comprising of age, level of education, household size, experience, and average annual income among others. These factors *ceteris paribus* determine whether the youth would decide to engage and use the opportunities as a means of sustainable livelihoods or not. Besides, the utilization of the opportunities as means of attaining sustainable livelihoods are associated with many constraints which may affect their decisions and discourage them from using the opportunities. The constraints would not only affect their decisions to use the available opportunities but also their willingness to engage. Some of the constraints according to Kumar & Kumar (2019) are low level of education and entrepreneurship

training, inadequate market facilities and poor transportation systems. In addition, Muchara & Batha (2016) mentioned difficulty in accessing resources such as land, water, credit, information, and inadequate property right. Focusing on the individual youth, Wolf (2004) also mentioned unawareness of the individual's strengths, weaknesses and competencies as constraints facing agripreneurs. Therefore, the combination of institutional factors, socio-economic factors and constraints determine the decision of the youth to engage in agripreneurship opportunities. Furthermore, it is anticipated that if the youth will decide to engage in agripreneurship opportunities, they will achieve long-term livelihood outcomes such as increased income, enhanced well-being, excellent education, food security, sustainable use of natural resources, and reduced vulnerability. Based on this notion, the study's conceptual framework is depicted in figure 3.1 below.

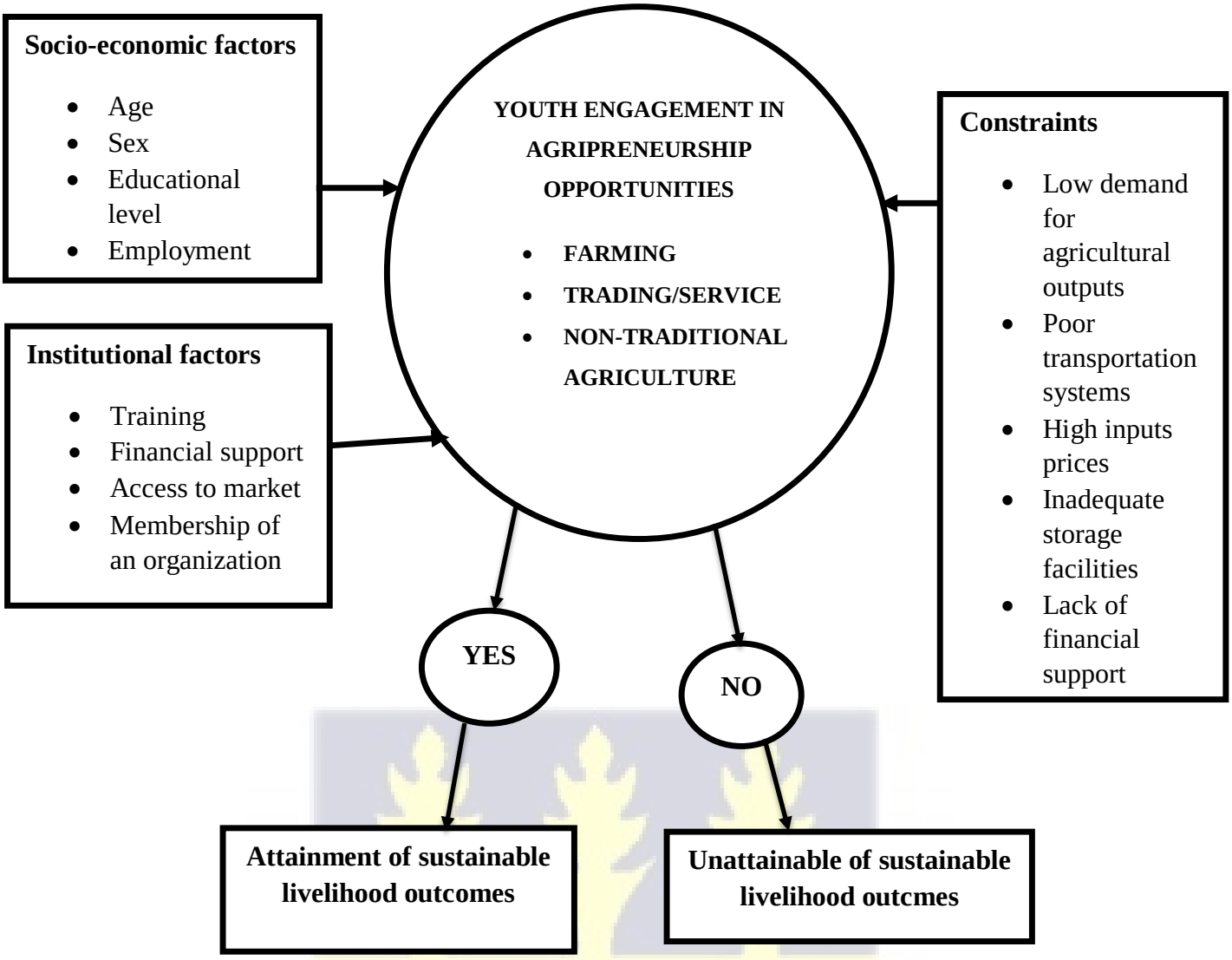

Figure 3.1: Conceptual Framework

Source: Author's Design, 2022

3.4 Methods of Data Analysis

3.4.1 Identifying Agripreneurship Opportunities in the Study Area

This objective was achieved by presenting the various agripreneurship opportunities identified in the literature to the respondents in a form of structured questionnaires. The respondents were then asked to rank them on a four-point Likert scale of 1, 2, 3, and 4, with 1 being not significant, 2 less significant, 3 significant, and 4 most significant. After that, the mid-point value of 2.5 was computed. The data was analyzed using a qualitative method based on descriptive statistics, and the mean score of each outcome calculated. The calculated mean score was then compared to the mid-point value (2.5) of the Likert scale and based on this the decision was established. Thus, any agripreneurship opportunity with a mean score greater than or equal to 2.5 is considered significant by the youth and thus can be used as a source of employment and income generation, whereas any agripreneurship opportunity with a mean score less than 2.5 is considered insignificant by the youth and thus cannot be used as a source of employment and income generation. In that case, the youth in the study area cannot rely on such opportunities as a method of securing long-term employment. The data was then organized into a table with frequencies and percentages.

3.4.2 Determining the Socio-Economic Characteristics Influencing the Youth's Decision to Engage in Agripreneurship Opportunities

The respondents' socio-economic characteristics were elicited using questionnaires. The data was analyzed using a binary logistic regression model, with the youth's decision to engage in agripreneurship opportunities as the dependent variable and socio-economic factors as the independent variables. The model was found to be appropriate for the data set because the dependent variable; youth decision to engage in agripreneurship opportunities was a dichotomous response, that is, contains two decision responses only; whether the respondents will engage in agripreneurship opportunities or not. Thus, the

dependent variable was a binary (dummy) measure and was 1 if they are willing to engage and 0 if otherwise. By using a binary choice, the model as used by Nwibo et al. (2016) is specified as follows:

$$DYE = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MASTATUS + \beta_4 HHS + \beta_5 AGRIEXP + \beta_6 EDU + \beta_7 EMPLOY + \beta_8 AWAREAGRIP + \beta_9 FARMSIZE + \beta_{10} FBO + \varepsilon$$

Where *DYE* is the dependent variable = Decision of the youth to engage in agripreneurship opportunities

β_0 = the constant term

β = coefficients to be estimated

ε = the random error term.

The odds ratio values (*Exp(B)*) obtained from the analysis were then converted to probabilities using the formula: $P = \frac{\text{odds}}{1+\text{odds}}$. This was necessary so that predictions can be made in terms of probabilities. The other models indicating the inclusion and exclusion of lack of financial support and high farm inputs price variables as ranked by the respondents as the most pressing constraints are specified as follows:

$$DYE = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MASTATUS + \beta_4 HHS + \beta_5 AGRIEXP + \beta_6 EDU + \beta_7 EMPLOY + \beta_8 AWAREAGRIP + \beta_9 FARMSIZE + \beta_{10} FBO + \beta_{11} LFINASUPPORT + \beta_{12} FAMINPUTP + \varepsilon$$

When the variable, lack of financial support was dropped from the model, it becomes:

$$DYE = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MASTATUS + \beta_4 HHS + \beta_5 AGRIEXP + \beta_6 EDU + \beta_7 EMPLOY + \beta_8 AWAREAGRIP + \beta_9 FARMSIZE + \beta_{10} FBO + \beta_{11} FAMINPUTC + \varepsilon$$

Also, when the variable high farm input price was dropped from the model, it becomes:

$$DYE = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MASTATUS + \beta_4 HHS + \beta_5 AGRIEXP + \beta_6 EDU + \beta_7 EMPLOY + \beta_8 AWAREAGRIP + \beta_9 FARMSIZE + \beta_{10} FBO + \beta_{11} LFINASUPPORT + \varepsilon.$$

Where the variables and symbols have their usual meanings. These model specifications were also necessary in order to verify and determine whether lack of financial support, high farm inputs price or both as ranked by the youth agripreneurs in the study area are significant and to what extent.

3.4.3 Testing the Model Fit

The goodness-of-fit of the model selected for the analysis was tested using the likelihood ratio test. This serves as an indicator to assess the appropriateness of the model fit. The other statistics such as Wald statistic, Pseudo R^2 consisting of Nagelkerke and Cox and Snell were also used to test for the significance of independent variables with the use of chi-square (X^2) distribution with 1 as a degree of freedom. The values of these test statistics range from 0 to 1. The higher the value, (that is, a value near to 1), the better the fit and vice versa; again, utilizing the binary logistic regression model for this goal was appropriate because these indicators were available to measure the model fit.

3.4.4 The Likelihood Ratio Test

This test specifically tests the significance of coefficients in the model used with or without predictors to compare one model with the other called the restricted model using the log likelihoods ratios. This helps to determine whether a specific coefficient in one or another model is statistically significant. The test statistic as used by Altaş & Öztunç (2013) is specified below:

The Likelihood Ratio Test = $-2\ln\left[\frac{Maximum\ likelihood\ of\ the\ restricted\ model}{Maximum\ likelihood\ of\ the\ unrestricted\ model}\right]$.

3.4.5 The Wald Test

This test, unlike the likelihood ratio test, requires the estimation of only one model. It is based on the hypothesis that some coefficients, β_i in the model fit are equal to zero. If the coefficient is significantly different from zero, the predictor is statistically significant and contributes significantly to the total outcome prediction. The test statistic as employed by Altaş & Öztunç (2013) is as follows:

$$\textbf{Wald} = \left[\frac{Coefficient\ estimates}{Standard\ error\ of\ the\ estimated\ coefficient}\right]^2 = \left[\frac{\widehat{\beta_J}}{SE\widehat{\beta_J}}\right]^2.$$

3.4.6 Pseudo R^2 (Nagelkerke's R^2 and Cox and Snell's R^2)

The two most R^2s used in binary logistic regression analysis are Nagelkerke's R^2 and Cox & Snell's R^2. These R^2s are in practice similar in meaning to that of R^2 in the linear regression model. They are necessary to determine the extent to which the explanatory variables explained the overall outcome. In these statistics, zero denotes no prediction at all, showing that the explanatory factors have no influence on the outcome variable's prediction, and 1 denotes perfect prediction, suggesting that the explanatory variables have a considerable impact on the outcome variable's prediction. The following are the two statistics:

Cox and Snell, $\boldsymbol{R^2_{CS}} = 1 - e^{\left[-\frac{2}{n}LL(New) - LL(Baseline)\right]}$ and

Nagelkerke, $\boldsymbol{R^2_N} = \frac{R^2_{CS}}{1-e^{\left[\frac{2LL(Baseline)}{n}\right]}}$

The two LLs reflect log likelihood in the new model and log likelihood in the prior model, and n represents the sample size.

3.4.7 Test for Econometric Problems

The three main econometric problems commonly encountered in econometric models are autocorrelation, heteroscedasticity, and multicollinearity. If their existence in a regression model is not checked and corrected, decisions and inferences made based on the coefficient estimates would be misleading.

Autocorrelation occurs when the disturbance terms in the regression model are correlated. In other words, the covariance between the disturbance terms is not equal to zero, that is, $\text{cov}(u_i, u_{j)} \neq 0$ and $i \neq j$ where i and j are two different observations. Because autocorrelation is noted to be a typical characteristic of time series data, its test was relaxed in this study because the study primarily relied on cross-sectional data.

When the variance of the disturbance term in regression analysis is not constant, heteroscedasticity arises. In other words, the disturbance term's variance is not homoscedastic; that is, $\text{var}(u_i) = \delta^2_i$, where i = 1, 2, 3,….. showing that the variance of the residuals varies. The disturbance term in the binary logistic regression model employed in the analysis was assumed to be homoscedastic. This is because, in the presence of heteroscedasticity, the parameter estimates remain consistent and retain their BLUE features, that is, they are the best linear unbiased estimators (Gujarati & Porter, 2009; P: 371) and are asymptotically efficient.

Multicollinearity on the other hand, occurs when there is a linear relationship among explanatory variables in multiple regression models. For perfect multicollinearity, the coefficients of the explanatory variables cannot be determined. The coefficients can only be estimated if multicollinearity is less or near perfect. In this case, the coefficients estimates are inaccurate, have high standard errors, unstable (sensitive to a small change in data) and have large variances and confident intervals leading to insignificant test statistics such as *t* and *F* ratios. The existence or lack of collinearity among the variables was evaluated using graphical and variance inflation factor (VIF) methods with SPSS version 20 software

because the logistic regression model used for the analysis included several explanatory variables. The scatterplot revealed that the little dots follow the normalcy line, indicating that there is no multicollinearity.

The VIF shows how the variance of a coefficient is inflated due to the presence of multicollinearity among explanatory variables. The decision was based on the value or range of the VIF. If the VIF = 1, it indicates that the explanatory variables are not correlated to one another. On the other hand, if the VIF value occurs in the range 1< VIF < 5, it indicates that the collinearity exists in the model but moderately. Also, if VIF ≥ 5 to 10, it indicates that collinearity among the explanatory variables in the model is high especially when VIF > 10. The range of values of the VIF obtained during the analysis of this study was 1 to 2.8, indicating that multicollinearity among the explanatory variables used in the model was absent. Hence, reliable decisions and inferences can be made based on the coefficients estimated from the model used for the analysis. See Appendix ii for the results of the multicollinearity test.

3.4.8 Identifying the Constraints Facing Agripreneurs in the Study Area

The constraints facing agripreneurs were identified through the literature review. The questionnaires were then structured in two sections to elicit the needed data from the respondents for the analysis. The first section consists of the list of all the constraints identified from the literature and the second section gives room for the respondents to specify their own constraints which were not found in the list. The questionnaires were then administered in a form of interviews scheduled with the purposively selected agripreneurs households. The respondents were asked to rank all of the constraints on a numeric scale from least to most pressing, using the numbers 1, 2, 3, 4, 5,.....n. Data collected were analyzed using Kendall's Coefficient of Concordance also called Kendall's *W*. This technique helped to ascertain the degree of agreement or disagreement among the rankings by the respondents. In determining the total

rank score for the identified constraints, the constraint with the least mean score was ranked as the most pressing whilst the constraints with the highest mean score was ranked as the least pressing constraints (Denkyirah et al. 2016). The weighted average formula is specified as:

Weighted average = $\frac{\sum T}{\sum n}$

Where **Σ**T = sum of ranks for each constraint

Σn = number of respondents.

Mathematically, the Kendall's Coefficient of Concordance is expressed as:

$$W = \frac{12s - 3m^2n(n+1)^2}{m^2(n^2-n) - mT}$$

Where s = sum of squared deviations

m = number of respondents

n = total number of constraints being ranked

T = correction factor for tied ranks

The Kendall's Coefficient of Concordance or Kendall's *W* gives a value that ranges between zero and one i. e. $0 \leq W \leq 1$. A value greater than zero indicates some level of agreement while a value equal to zero indicates that there is no agreement among the items ranked.

Hypothesis and Significant Test for the Kendall's Coefficient of Concordance

Null hypothesis, H_0 = There is disagreement among the respondents in the ranking of the constraints.

Alternate hypothesis, H_1 = There is an agreement among the respondents in the ranking of the constraints.

Using the formula $X^2 = k(n-1)W$, the chi-square, X^2 test was calculated. The X^2 critical is read from a chi-

square table with n - 1 degrees of freedom, where k is the number of raters. If the calculated X^2 is greater than the X^2 critical at the P = 0. 05 level of significance, the null hypothesis, H_0, is rejected, and the conclusion is that there is agreement among the respondents in ranking the constraints; otherwise, the H_0 is not rejected, and the conclusion is that there is disagreement among the respondents in ranking the constraints.

3.5 Methods of Data Collection

3.5.1 Sources of Data, Instruments and Interview Procedures

For the analysis, the study used both primary and secondary data. The primary data was acquired solely through a survey, with questionnaires serving as the major instruments. The other techniques such as personal interviews and focus group discussions with the key informants in the six randomly selected communities were also conducted. Heads of institutions such as the department of agriculture, Agribusiness Advisory Centres, owners of agribusiness shops and human resources managers that are always in direct contact with the youth in the six communities were also consulted to discuss issues concerning the attitudes of the youth participation in agriculture. The questionnaires were therefore designed consisting of both open and closed questions to elicit data about the respondents' socio-economic characteristics, nature of farms, community level characteristics, and their opinions relevant to the attainment of the specific objectives. The open questions allowed the respondents to provide the necessary answers to the questions asked without any special restrictions. The closed questions on the other hand, asked for specific answers. The questionnaires were designed to consist of four sections. The first part focused on the respondents' socioeconomic factors, such as age, sex, marital status, family size, income, and educational attainment. The second component is based on the respondents' agripreneurship activities being identified. The questions asked include decision to engage in agripreneurship opportunity, type of agricultural business/enterprise owned or managed, the number of such business,

experience, scale, and type of output produced, services offered and expected average annual income. The third part of the questionnaires concentrated on the decision of the youth to engage in agripreneurship opportunities. In this case, if the response is yes, it is recorded as 1. On the other hand, if the response is no, it is recorded as 0 and the respondents are further asked based on their best of knowledge to give their reasons. A follow-up question is asked using the Likert scale of 1, 2, 3 and 4 for not significant, less significant, significant and most significant respectively. The fourth part captures questions on the specifications and ranking of the constraints facing agripreneurs in the six selected communities. By outlining all the constraints identified, the questionnaires asked the respondents to rank them using the numeric scale 1, 2, 3, 4… n. See Appendix i for the questionnaires used for the survey.

Secondary data needed for the accomplishment of the specific objectives were obtained by reading literature such as articles, journals, books relevant to the subject matter and the internet using specific keywords and website addresses. Key-words such as the meaning of entrepreneurship, meaning of agripreneurship, agripreneurship opportunities, challenges, obstacles and constraints of agripreneurship were input into the search engines. Information that popped up was thoroughly read and the needed data ascertained. These pieces of information obtained from the literature and the internet helped the researcher gain more insight into the various definitions of entrepreneurship, agripreneurship, agripreneurship opportunities and the constraints agripreneurs faced. The other secondary data such as the total population of people living in the study area, land area, the area under cultivation, mining, the existence of agribusinesses and the district map were obtained from departments and institutions such as the Ministry of Food and Agriculture (MoFA), Ghana Statistical Service (GSS), and the District Assembly (DA). In particular, information from the Ghana Statistical Service Population and Housing Census and the District Assembly gave the researcher more insight into the description of the study area.

3.5.2 Description of Variables Used in the Logit model and Hypothesis

1. AGE (AGE): According to FAO (2008), the working age of the agricultural labour-force is between 31 and 40 years. As a result, it is believed that youth's age will have a positive or negative impact on their decision to pursue agripreneurship opportunities. As the youth is aging (from 15 to 40 years), the more the experience he or she gathers. Their experience guides them to undertake a business that is more viable at the right time and in the right environment. They may also be capable of switching to different alternatives when there is economic shock because of the experience they have gathered throughout their working life. However, the ages below 15 and above 40 years are predicted to have a detrimental impact on their decision to pursue agripreneurship opportunities. During the survey, age was measured in years in a particular range categorizations.

2. Sex (SEX): It was expected that being a male will play a significant role in the decision of the youth to engage in agripreneurship opportunities than in female counterparts with a positive correlation. This is because males are normally endowed with resources and are capable to take risks compared to females in the same environment. In addition, Mbam & Nwibo (2013) have found that the males participate more in agricultural activities than the females in a similar environment. In the questionnaire, sex was measured as a dummy with a value of 1 for males and 0 for females.

3. Marital status (MASTATUS): It was hypothesized that the youth marital status will have a positive or negative impact on their decision to pursue agripreneurship opportunities. This is because those who have married would like to generate more income to cater for the family even if they bear no children and in doing this, engagement in agripreneurship opportunities become option. However, the drive to engage in agripreneurship is expected to decline among the youth who are single. During the survey, marital status was measured as numeric using 0, 1, 2, and 3 for single, married, divorced and separated respectively.

4. Household Size (HHS): It was hypothesized that the number of people who live or may not live under the same roof but eat from the same pot with a recognized leader will affect the decision of the youth to engage in agripreneurship opportunities positively. This is because as the size of the family continue to increase, the head of the household begins to identify other sources of income to meet the consumption and utility demands of the family. In doing this, engaging in agripreneurship opportunities comes to mind to generate enough income to cater for the household needs. Thus, the household will be willing to invest in new opportunities to increase their income and hence improve their livelihoods. Aside, a family with a large household size will have an advantage of a source of labour. During the survey, household size was recorded by the researcher as a number given by the respondents typically the head of the household.

5. Previous Agripreneurship Experience (AGRIEXP): It was hypothesized that agripreneurship experience will have a positive influence on the decision of the youth engagement. This is because the more experienced an agripreneur has gained, the more practical skills and knowledge he or she has gathered and the higher the probability to manage and deal with risk about entrepreneurship in agriculture. As noted by Mbam et al. (2013) the more experience one obtains, the more he or she is exposed to strategies for effective management and marketing. Agripreneurship experience was measured as the number of years one has involved himself/herself in agricultural businesses.

6. Education (EDU): It was expected that education will have a substantial favourable impact on youth's decision to engage in agripreneurship opportunities. This is because the better the youth's educational attainment, the more likely he or she acquires the necessary skills, information, and capacity to recognize the different opportunities in agriculture and related industries that match their interests and aspirations. During the survey, education was measured as levels of formal education attained using numeric such as 1, 2, 3 ..... starting from basic school to tertiary.

7. Employment Status (EMPLOY): It was hypothesized that employment will either have negative or positive relationship with the decision of the youth to engage in agripreneurship opportunities because those who have been engaged may already have sources of income to sustain their livelihoods. On the other hand, those who are unemployed may seek a job in order to generate income to sustain their livelihoods and to take care of the households. In doing this, agripreneurship becomes an option. It was measured using numeric.

8. Awareness of Agripreneurship Opportunities (AWAREAGRIP): Awareness was hypothesized to have either negative or positive effect on the decision of the youth to engage in agripreneurship opportunities. This is because if they are aware and know the benefits, they are more likely to engage relative to if they are not aware. It was measured as a dummy with 1 as 'yes, I am aware of agripreneurship opportunities' and 0 for 'no, I am not aware of agripreneurship opportunities.

9. Farm Size (FARMSIZE): The bigger the farm size (large scale production) the higher the farm income and vice versa. Therefore, it was hypothesized that farm size will have a positive effect on the decision of the youth to engage in agripreneurship opportunities of the youth. Farm size was measured in acres during the survey and then converted to hectares using the proportion 2.471 acres = 1 hectare during the analysis.

10. Membership of Farmers' Based Organization (FBO): It was assumed that belonging to an association or organization has a positive effect on the decision of the youth to engage in agripreneurship opportunities because members receive training, acquire knowledge and skills that increase their chances of engagement to utilize the opportunities more effectively. It was measured as dummy such that yes = 1 and no = 0.

11. Financial Support (FINASUPPORT): It was hypothesized that financial support will either have a positive or negative influence on the youth's decision to engage in agripreneurship opportunities because the youth may have a certain level of financial ease to develop or expand their business or create a new one if they have access to financial support. This will lead to more jobs, employment and income generation thereby enhancing their livelihoods compared to if they have no access or lack financial support. During the survey, financial support was measured as a dummy with 1 = having access to financial support when required and 0 = having no access to financial support when required.

12. Farm Input Price (FAMINPUTP): It was hypothesized that farm input price will either have positive or negative influence on the decision of the youth to engage in agripreneurship opportunities. It will demotivate the youth and have a negative influence on their decision to engage if they perceive that the prices of inputs are high and vice versa. It was measured using numeric such that 1 = No, I perceived that input prices are low and 2 = Yes, I perceived that inputs prices are high. The table 3.1 shows the variables used in the model, how they were measured, and their corresponding theoretical a priori.

Table 3.1: Description of Variables, Measurement and their Theoretical a Priori

Description of variables	Variables codes	Measurement	*A priori*
Age	AGE	Years (Range)	-/+
Sex	SEX	Male = 1, Female = 0	+
Marital status	MASTATUS	Numeric	-/+
Household size	HHS	Numeric	+
Previous agripreneurship experience	AGRIEXP	Years (Range)	+
Education	EDU	Numeric	+
Employment	EMPLOY	Numeric	-/+
Awareness of agripreneurship	AWAREAGRIP	No = 0, Yes = 1	-/+

Farm size	FARMSIZE	Acres (Range)	-/+
Membership of Farmers' Based Organization	FBO	No = 0, Yes = 1	+
Financial support	FINASUPPORT	No = 0, Yes = 1	-/+
Farm input price	FAMINPUTP	Numeric	-/+

Source: Author's design, 2022

3.5.3 Sampling Procedure

The multi-stage sampling technique was employed. This procedure helped the investigator to stratify the population into clusters and allows for flexibility to select the sample size carefully.

Birim North District was purposively chosen for the study because it is one of the districts in which one of the worlds' leading gold mining companies, Newmont is operating leading to an influx of many youth in the district in search of job in the mining company. Within the district, six communities were randomly selected namely New Abirem, Adausena, Hweakwae, Abodom, Praso, and Noyem. The selected communities were found to be suitable for the study because they are all located within the outskirts of the mining activities. After chosen the communities, clusters were formed in each community and the various houses within each cluster were entered step-by-step and the number of households within a particular house were interviewed using the questionnaire designed. The youth respondents were then carefully selected from each household based on their age categorization that is from 15 to 35 years according to the definition of Youth Policy of Ghana (2010). Hence, if the youth in these communities are well-informed to take risk through research to come out with innovative ideas more agripreneurs will be created and the willingness of the youth to participate in agricultural activities will be increased.

The sample size for the study was determined by following the random probability formula which is given as:

$$n = \frac{z^2(p*q)}{e^2} \div 1 + [\frac{z^2(p*q)}{e^2 N}]$$

Where

n = sample size

z = z-score at a chosen confident level

e = margin of error

N = population

p = probability of the presence of the key attribute of the population

q = the probability of the absence of the key attribute so that the summation of p and q = 1 such that if *p* = *x* then *q* = *1 – x.* At confident level of 95%, z-score = 1.96 and the margin of error, *e* which is the confident interval = 5%. If *p* = 0.80 then *q* = 0.20 and the population (*N)* considered in the six communities was fifteen thousand (N = 15,000). By substituting this data into the above formula, a total of 242 respondents were sampled for the study. However, 220 responses were received vis-à-vis the questionnaires distributed and this was used for the analysis. Table 3.2 shows the six randomly selected communities and the percentage of actual responses received from each community.

Table 3.2: Distribution of the Number of Respondents Sampled from each Community

Communities	Targeted sample	Actual responses received	Percentage of the actual responses received (%)
New Abirem	65	60	92.3
Adausena	35	30	85.7
Hweakwae	30	30	100.0
Abodom	32	30	93.8

Praso	45	40	88.9
Noyem	35	30	85.7
Total	242	220	90.9

Source: Author's computation, 2022

3.5.4 The Study Area

Birim North District (BND) is one of the Ghana's 260 Metropolitan, Municipal and District Assemblies (MMDAs), which are part of the 33 Municipalities and Districts in the Eastern Region, which are overseen by the Ministry of Local Government, Rural Development, and Environment. The district, with New Abirem as its capital, was established in 1987 under Legislative Act 462 (Legislative Instrument 1993) in accordance with the Government Decentralization and Local Reform Policy to promote effective decentralized governance and expedite the development of the area.

BND is located in Ghana's eastern region, between the latitude of $6^0$18N and the longitude of $0^0$59W on the equator. The district is bordered on the north by Kwahu West Municipal, on the west by Asante Akyem South and Adansi South Districts, on the south by the newly formed Akyemansa District, and on the east by the Atiwa Kwaebibirem District. The District Assembly which is responsible for day-to-day administration and implementation of government policies is situated in the south-west part of Ntronang to Oda road. There are three police stations in the district located at Afosu, New Abirem and Ntronang that ensures compliance of law and order in the district. There are also three SHSs called New Abirem-Afosu Senior High School located in the district capital, St. Michael Senior High School located at Akoasi, and Amuana Praso Senior High School located at Amuana Praso. There is also one radio station called 'Ananse Fm'104.9MHz that serves as a medium of communication, information dissemination and announcement for communities in the district. The district government hospital is also found at New Abirem responsible for delivery of health care services though other private hospitals such

as I and I also exist. The market day occurs every Tuesday and Friday at New Abirem where farmers take advantage to sell their farm produce. All these help in the development and growth of the district.

The total population in the district as of 2010 according to National Population and Housing Census is 78,907 of which 71,016 (90 percent) live in rural communities. Of this population, 39,572 (50.2 percent) are males and 39,335 (49.8 percent) are females. This indicates that males are slightly (237) more than females about 0.4 percent in the district. The district's population is mostly young (51.5 percent), with a large base population pyramid that tapers off with a limited number of elderly people (6.5 percent). The District's total age dependency ratio is 81.7, with males having a greater age dependency ratio (83.2) than females (80.3). With a total surface area of 550 km^2, the district has a population density of 143.5 people per square kilometer. This suggests a significant population demand on land and infrastructure in the district, particularly in the district capital, such as water, electricity, roads, markets, housing, social services, and other resources.

Within the district's jurisdiction are 78 settlements. New Abirem, the district capital, is roughly 241 kilometers north-west of Accra and has a population of about 6,123 people. After Akoasi and Afosu, it is the district's third largest urban center (GSS, 2010 PHP). According to GSS data from 2010, the average household size in the district was 4.2 people per household. The urban score is 4.0, whereas the rural score is 4.3. Akoase, Amuana Praso, Afosu, New Abirem, Old Abirem, Ntronang, and Nkwarteng are among the district's urban towns, while Nyafoman, Noyem, Adadekrom, Tweapease, Adausena, Hweakwae, and Abohema are among the district's rural towns. Agriculture, which includes both food and tree crops, and livestock production, is the district's main economic activity.

The major tree crops cultivated in the district are oil palm, cocoa and citrus comprising of about 77,546 hectares and the dominant food crops include maize, cassava, plantain, rice and cocoyam comprising about 13,491 hectares including vegetable cultivation. This gives 91,037 hectares total area

of land under cultivation in the district. Manufacturing and processing of palm oil are also carried out in the district but farming is the leading economic activity and serves as a significant source of livelihoods for dwellers in the district (GSS, 2010 PHP).

Farmers use cutlass and hoe as the main tools for farming accounting for subsistence and small-scale production with an average farm size of about 1.2 hectares, a typical characteristic of rural households except few farmers undertaking commercial production. The accessibility of land for agricultural activities is through a land tenure system consisting of leasing, renting, sharing locally called 'abunu' and 'abusa' and through inheritance (MoFA, 2018). Three main farming systems are very common in the district namely mixed cropping, intercropping and mixed farming. As seen in figure 3.2, the primary sources of farm labour are homes or families, as well as hired labour. Land-availability and acquisition, farm sizes and holdings, farming systems, farm labour, area under cultivation and types of crops grown, as well as their estimated yields, sources of finance, extension services, farm tools and equipment, storage and marketing systems are all considered under agricultural sector.

The district is distinguished by topographical elements such as drainage, tributaries, relief, and climatic factors such as rainfall, temperature, and humidity. The Pra River, which also acts as a border between the district and two other districts in Ashanti Region, is the main source of drainage. The district has tributaries such as the Maamang, Nwi, Sukrang, Afotosu, and Adechensu Rivers. All of these tributaries form confluence with the Pra River, which also runs south and enters into the sea near Shama, Western Region. The district's terrain is mountainous, especially in the forest belt, and undulating, rising to 61 metres above sea level in certain places. The rainfall pattern consists of two main seasons in the district. The first season occurs in late March to mid-July and the second season also occurs in late August to late October with an amount of rainfall between 1500mm and 2000mm during the two peaks periods of May to July and August to October annually.

The temperature is relatively stable throughout the year and ranges between 25^0C to 32^0C and relative humidity of about 55 percent to 59 percent per year. The climatic conditions are also favourable for crops production. The economic implications of these unique features especially the rivers are that they can be used in the form of irrigation to boost agricultural production to generate employment, increase agricultural productivity, and ensure sustainable livelihoods for the people living in the district. The district is located within the semi-deciduous forest belt of the vegetation of Ghana consisting of tall trees with evergreen undergrowth.

BND was chosen for the study because it is one of the districts endowed with valuable natural resources such as gold and timber. The forest contains a large species of economic trees such as *Triplochiton scleroxylon*, *Ceiba pentandra*, *Cedrela odorata* and *Khaya ivorensis* known in Ghana as Wawa, Onyina, Cedrela and Mahogany respectively that are important for the timber industry. The forest also contains gold deposit which is important for the mining industry, both domestic and abroad and it is the reason why one of the world-leading gold mining companies, Newmont is operating leading to an influx of many youth in search of jobs in the mining company.

In addition to the public infrastructure, the youth in the district have access to improved infrastructure such as water, clinics, roads, schools and scholarship from the mining company as part of fulfilling their corporate social responsibilities, which was the case in the four of the six communities studied. Those already employed in the mining company in addition to the influx of newcomers will also increase demand for food crops, animal products and services, thus improving opportunities for the youth in the area who venture into agripreneurship. This makes the study area (Birim North District) a very unique one. However, in this study, the youth living in the mining communities are not different from those living in the non-mining communities.

Two main challenges were identified as facing the district in general. The first is a bigger market that can offer better prices for agricultural produce in order to reduce difficulties in haggling prices with

farmers. The other challenge was inadequate storage and processing facilities for storing vegetables and crops such as tomatoes, citrus and rice (MoFA, 2018). Figure 3.3 is the map of Birim North District showing the various communities where the study was conducted.

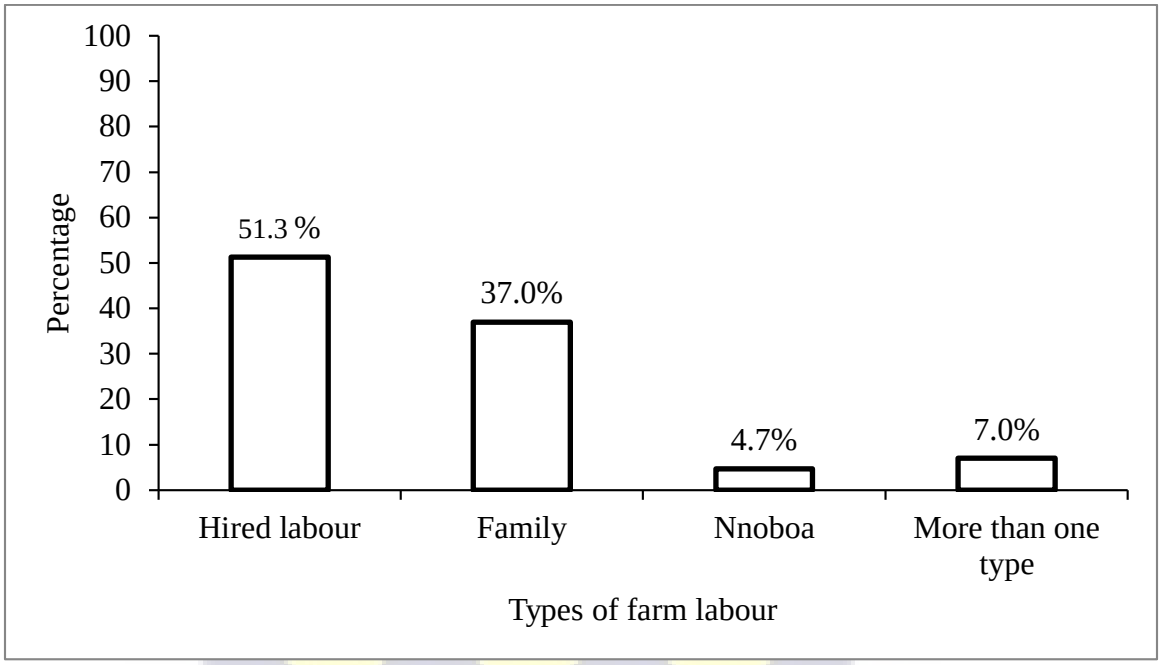

Figure 3.2: Sources of Farm Labour

Source: MoFA (2016, BNDA).

From figure 3.2, it is seen that 51.3 percent of farmers use hired labour. Farmers who rely on only family/household labour constitute 37 percent, 4.7percent rely on 'nnoboa' whilst 7 percent of the farmers depend on more than one type of labour for their farming activities in the BND.

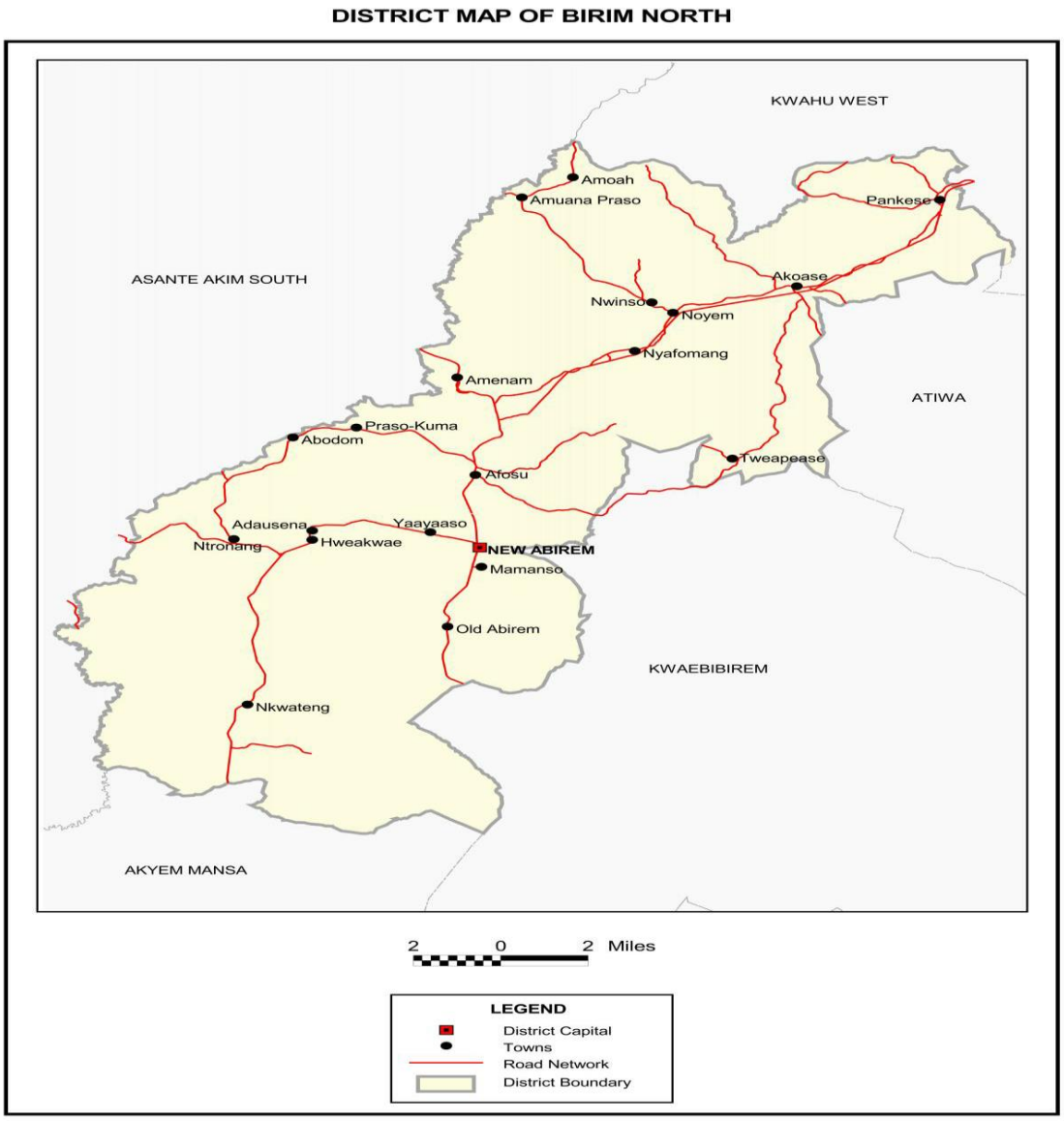

Figure 3.3: Map of the Study Area

Source: GSS (2010, PHC)

3.6 Scope and Limitations of the Study

The study was set forth to examine the youth engagement in agripreneurship opportunities as a means of attaining sustainable livelihoods in mining communities in the Birim North District of Ghana. The achievement of the specific objectives requires resources in terms of financing and time. This resulted in

only 220 respondents being sampled as against the calculated sample of 242 sample size from the six communities instead of the entire district. Thus, a study taking into account the entire communities within the district with a larger sample size can also be carried out by future researchers. This is because it is well-known that as the sample size increases, the population parameter approaches its true mean value. Travelling up and down during the survey amidst COVID-19 pandemic was also not an easy task. The unwillingness of some of the respondents to answer the questionnaires was also encountered. This was emphatically due to inadequate and lack of awareness of entrepreneurship and agripreneurship knowledge among some of the respondents. Therefore, it was necessary to do enormous clarifications, definitions and continuous follow-up until the required number of responses were obtained. In addition, simple descriptive statistics were used to identify the most significant agripreneurship opportunities. However, this could have also been done using econometrics models to ascertain the main relationships among those opportunities. This could have helped to quantify the significance level of each opportunity identified in the study area. Moreover, several agripreneurship opportunities exist in agriculture, the study focused on those that commonly prevail in the study area. Several constraints were also identified as facing agripreneurs in the study area. However, only those relevant to this study were used for the analysis. Last but not the least, a lack of communication platforms for agripreneurs in the study area was noted as limiting accessibility of agripreneurship information. As a result, future research can be done to determine the impact of communication platforms on the utilization of agripreneurship opportunities.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

The results of the study are presented in this chapter. The first section describes the background and the socio-economic characteristics of the respondents. The second section is on the presentation and description of the agripreneurship opportunities identified and the analysis of the factors that influence the decision of the youth to engage in agripreneurship opportunities. The third section, which is the final part describes the analysis of the constraints agripreneurs in the BND face.

4.2 Background of the Respondents

4.2.1 Community-Level Characteristics

Data were collected on the infrastructural status from the key informants in the various communities under study. This information helped to determine the position of the developmental progress of the communities studied and hence will help investors to decide on investment portfolios that would be appropriately fit a particular community in the study area. The findings revealed that the majority of the respondents constituting 33.2 percent were with the view that communication networks are good whiles 19.5 percent were with the view that the communication networks are very poor. On the communities' road networks, 65.0 percent responded that the communities' road networks are very good whiles only 2.7 percent mentioned that they are very poor. In a similar view, the majority of the respondents consisting of 75.0 percent gave positive response that education facilities in the study area are in a good state whiles only 5.9 percent were with the view that the education facilities are in a poor state. However, none of the respondents indicated that the educational facilities in the study area are in a very poor state. The findings are presented in table 4.1 below.

Table 4.1: Infrastructure Base Resources in the Study Area

Infrastructure availability and access	Communication network		Community road network		Education facility	
Indicators	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
Very good	68	30.9	143	65.0	42	19.1
Good	73	33.2	51	23.2	165	75.0
Poor	36	16.4	20	9.1	13	5.9
Very poor	43	19.5	6	2.7	0	0.0
Total	220	100.0	220	100.0	220	100.0

Source: Field Survey, 2022.

On the other hand, 58.0 percent indicated that the availability and accessibility of portable water for domestic consumption was very good and 42.0 percent indicated that it was good. This is illustrated in figure 4.1. These results were consistent with the initial expectation because it was initially anticipated that one of the departments of the Newmont Mining Company called Water and Sanitation Management in collaboration with Ghana Water Company and the District Assembly will ensure quality water distribution to the various communities under study.

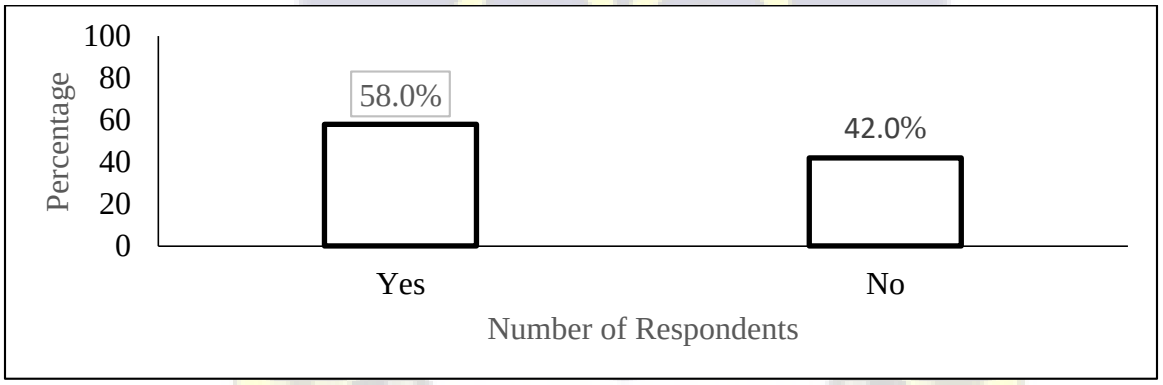

Figure 4.1: Availability and Accessibility to Portable Water in the Study Area

Source: Field Survey, 2022

4.2.2 Socio-Economic Characteristics of the Respondents

The socio-economic characteristics of the respondents are discussed and presented in a form of tables using frequencies and percentages as follows:

Age: The age distribution of the respondents is shown in Table 4.2. Some of the respondents in the research area were found to be 35 percent between the ages of 25 and 30, and 65 percent between the ages of 31 and 35. This result revealed that the respondents for the interview were chosen based on the National Youth Policy of Ghana (2010) definition of youth as people between the ages of fifteen and thirty-five. However, those within the age bracket of fifteen to twenty-four years were not sampled. This is because they were found to belong to the 'in-school group' and therefore do not play a significant role in agricultural activities in the study area.

Table 4.2: Age Distribution of the Respondents

Age	Frequency	Percentage
25 to 30	77	35. 0
31 to 35	143	65.0
Total	220	100.0

Source: Field Survey, 2022

Sex: 122 out of the 220 respondents interviewed for the study were males, accounting for 55.45 percent of the total, while 98 were females, accounting for 44.55 percent. In comparison to their female counterparts in the research area, males dominate the use of agripreneurship opportunities as a means of sustainable livelihoods. This could be because males are more competent of taking the risks and venturing into agriculture activities than females in most African countries, particularly in rural areas. This

conclusion supports the findings of Mbam & Nwibo (2013), who found that males are more involved in agricultural activities than females. In most African communities, males are also described as decision-makers and are capable to manage resources well than female counterpart in the same environment (Turkson & Naandam, 2006).The findings are shown in the table 4.3.

Table 4.3: Sex Distribution of the Respondents

Sex	Frequency	Percentage
Males	122	55.5
Females	98	44.6
Total	220	100.0

Source: Field Survey, 2022

Educational Level: In the sustainable livelihoods framework, education is one of the human capital that needs to be developed. It is one of the vital tools necessary for economic development. As a result, the educational background of the youth under the study was assessed during the field survey. The results of the educational level of the respondents interviewed are presented in table 4.4 below. It was revealed that 5.9 percent of the respondents had primary education only, 26.8 percent had JHS/JSS education, 30.9 percent had SSS/SHS education, 13.2 percent had technical/vocational education, 15.5 percent were undergraduates, 7.3 percent have had first-degree qualification and 0.5 percent constituting one respondent had received post graduate diploma education. These results showed that the literacy level of the respondents was very high with the majority completing secondary education. This finding may be attributed to the availability of the scholarship grant that is provided by the Newmont Mining Company, a department called Newmont-Akyem Development Foundation (NAkDeF) in the study area that is used to sponsor any student who passes his or her basic school examination and willing to further his or her

education up to first-degree level. However, of all the 220-youth interviewed, none of them was found to have had or reached masters or PhD level of education.

Table 4.4: Educational Level of the Respondents

Educational level	Frequency	Percentage
Primary	13	5.9
JHS/JSS	59	26.8
SSS/SHS	68	30.9
Technical/Vocational	29	13.2
Undergraduate	34	15.5
First degree	16	7.3
Post Graduate Diploma	1	0.5
Total	220	100.0

Source: Field Survey, 2022

The results of the other socio-economic characteristics such as marital status, household size, average annual income, farm activities, farm size, crop production, awareness of agripreneurship opportunities, membership of farmers' base organization, agripreneurship experience and off-farm agricultural activities are also discussed and presented in tables/figures as follows:

Marital Status: Marriage is a legal relationship between a man and woman who have agreed to live together as one in a form of companionship. In most cases, it is one of the important social relationships which is very difficult to avoid if not impossible in one's life. In some households, the married couple serves as a source of labour contributing to family income. This necessitated the study to consider the marital status of the respondents. The findings are presented in table 4.5. From the table, it is seen that

out of the total of 220 respondents interviewed in the study area, 45.9 percent consisting of 101 respondents were married whiles 33.2 percent consisting of 73 respondents were singled. In addition, it is seen from the table that 13.6, 1.4 and 5.9 percent of the respondents were divorced, widowed and separated respectively.

Table 4.5: Marital Status of the Respondents

Marital status	Frequency	Percentage
Single	73	33.2
Married	101	45.9
Divorced	30	13.6
Widowed	3	1.4
Separated	13	5.9
Total	220	100.0

Source: Field Survey, 2022

Household Size: A household is a group of people who may or may not live in the same dwelling unit but eat from a "shared pot" with a recognized leader. Households are the primary source of farm labour in most rural areas where labour and financial resources are scarce. As a result, the larger the household, the more labour is available for agricultural tasks. This ostensibly assists such households in saving money that would otherwise be spent on hiring labour. Furthermore, compared to a home with disorganized and poorly educated individuals, a household with well-organized and highly educated people is more likely to make more revenue and thus be able to sustain their livelihoods. The results of the household size obtained by interviewing the heads of households during the survey are shown in table 4.6. According to the data, the majority of the youth constituting 58.2 percent live in households with 4 to 6 members, while 35.5 percent live in households with 1 to 3 members. Only 6.4 percent of households

have more than 6 individuals. The standard deviation obtained was 0.579, and the average household size was 1.71 members, with 1 and 3 representing the least and maximum members respectively.

Table 4.6: Household Size of the Respondents

Household size	Frequency	Percentage
1 to 3	78	35.5
4 to 6	128	58.2
Above 6	14	6.4
Average	1.71	Minimum = 1
Std. Deviation	0.579	Maximum = 3

Source: Field Survey, 2022

Employment Status of the Respondents: Employment is one of the major sources of income to a person, family and household. It helps one to earn income to pay bills, fees, consumption and acquisition of wealth. As a result, it was necessary to find out the employment status of all the respondents in the study area. The results of the distribution of employment status among the youth are presented in table 4.7 below.

Table 4.7: Distribution of Employment Status of the Respondents

Employment status	Frequency	Percentage
Employed full-time	98	44.5
Part-time	65	29.5
Self-employed	16	7.3
Unemployed	41	18.6
Total	220	100.0

Source: Field Survey, 2022

These findings are encouraging because they indicated that the majority of the youth in the study area are working. The results revealed that out of the total number of 220 youth interviewed, 44.5 percent were in full-time and 29.5 percent were in part-time employment. Only 7.3 percent were self-employed and 18.6 percent were unemployed. The finding of the low proportion of self-employed among the youth in the study area may be attributed to inadequate capital, infrastructures, and well-organized institutional factors that support the creation of own businesses. The low percentage of self-employed among the youth is a clear indication that there is a lack of entrepreneurial spirit among the youth in the study area since self-employed has been recognized as one of the major characteristics of all entrepreneurs. For instance, FAO (2016) at one time posited that entrepreneurs are self-employed persons who run their own business. An enabling environment that enhances the creation of businesses needs to be created in the study area so that the youth could develop an interest in establishing their own businesses. On the other hand, those found to be unemployed are encouraged to consider participating in agriculture as a source of employment. In line with this Bernell (2018) reported that there are numerous opportunities available in agriculture and by far it is one of the areas that requires low start-up capital.

Average Annual Income: The respondents' average annual income from all agripreneurship businesses, both on-farm and off-farm, was evaluated. It was found that the average annual income of the majority was very low. The findings are presented in table 4.8. Out of the 220 youth interviewed, 47.7 percent earn an average annual income of three thousand, one hundred Ghana cedis to five thousand Ghana cedis (GHS3,100 to GHS5,000) while 17.7 percent earn an average annual income ranging from one thousand Ghana cedis to two thousand Ghana cedis (GHS 1,000 to GHS2,000), 19.1 percent also earn an average annual income of two thousand, one hundred to three-thousand Ghana cedis (GHS2,100 to GHS3,000). On the other hand, only 4.5 percent earn an average annual income of less than one thousand Ghana cedis (less than GHS1,000) while 10.9 percent did not reveal the level of their average annual income to the researcher and this was titled as not available in the table.

Table 4. 8 Range of Average Annual Income of the Respondents

Average Annual Income (GHS)	Frequency	Percentage
Below 1,000	10	4.5
1,000 – 2,000	39	17.7
2,000 – 3,000	42	19.1
3,100 – 5,000	105	47.7
Not available	24	10.9
Total	220	100.0

Source: Field Survey, 2022

Agripreneurship Experience: Experience leads to the acquisition of knowledge and skills by an individual. It is gained in most cases as a result of continuous performance of an activity or regular observations of situations. It enables one to better understand things and be able to deal with situations more appropriately. Due to its indispensability in one daily job activity, the experience level of the respondents was assessed. Table 4.9 shows the findings obtained. It is seen from the table that the majority of the respondents consisting of 45.8 percent have had experience from 1 to 3 years and 17.9 percent have had agripreneurship experience ranging from 4 to 6 years. On the other hand, 25.4 percent had experience below 1 year and only 10.9 had experience that was above 6 years.

Table 4.9: Agripreneurship Experience of the Respondents

Agripreneurship experience	Frequency	Percentage
Below 1 year	51	25.4
1 to 3 years	92	45.8
4 to 6 years	36	17.9
Above 6 years	22	10.9
Total	201	100.0

Source: Field Survey, 2022

Awareness and Sources of Agripreneurship Information: Awareness creates sensitivity and makes individuals conscious about the existence or non-existence of an activity. Thus, the study investigated among the youth to ascertain whether they are aware of the existence of agripreneurship opportunities. If the majority of the respondents are aware of them, it is an indication of obtaining reliable data and vice versa. The result of the level of awareness of agripreneurship is summarized in figure 4.2. The figure depicts that the majority 74.5 percent (164) of the respondents were aware and understood what agripreneurship is about, indicating that they know agripreneurship opportunities. However, only 25.5 percent (56) mentioned that they are unaware and therefore do not have knowledge of agripreneurship. Proportionally, the awareness level of agripreneurship among the youth in the study area was high as depicted in figure 4.2.

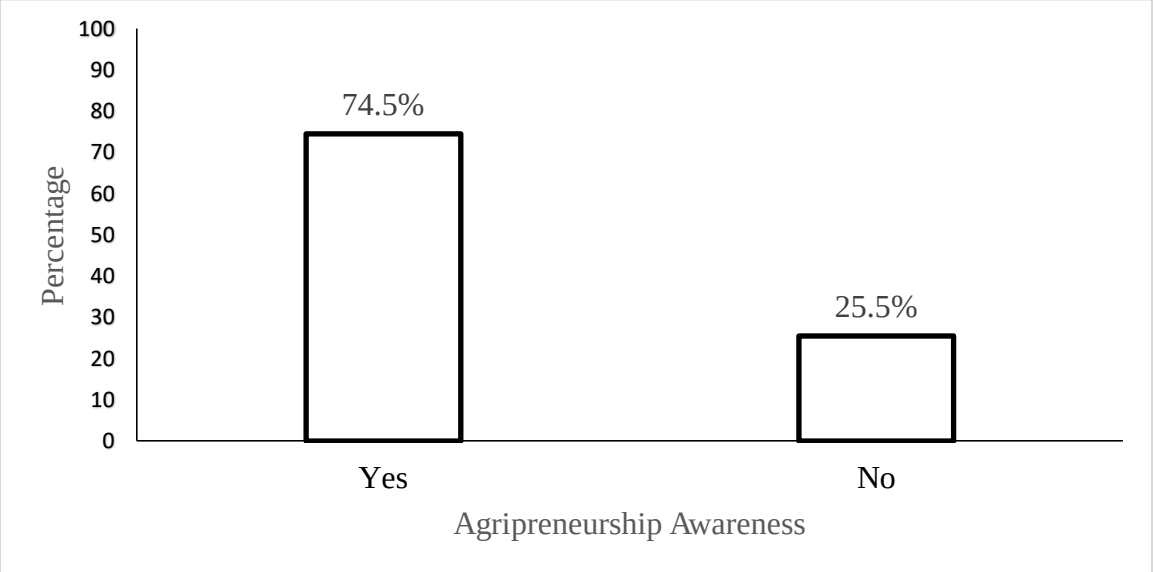

Figure 4.2: Awareness Level of Agripreneurship Opportunities in the Study Area

Source: Field Survey, 2022

Sources of Agripreneurship Information: The results of sources of information on the awareness of agripreneurship are presented in table 4.10. The results revealed that the majority (64.0 percent) received their information from the media whiles 13.4, 4.9 and 17.7 percent received their information from Agriculture Extension Agent, Farmers' Based Organisations and seminar/training/workshop respectively.

Table 4.10: Sources of Information on Awareness of Agripreneurship

Sources of awareness	Frequency	Percentage
Agricultural Extension Agents	22	13.4
Farmers' Based Organisations	8	4.9
Seminar/Training/Workshop	29	17.7
Media	105	64.0
Total	164	100.0

Source: Field Survey, 2022

The results further revealed that the effort of the media in disseminating agripreneurship information was high while that of Agriculture Extension Agents in the study area was low. Therefore, they need to be encouraged to work harder in that direction. On the other hand, if the number of extension agent in the district is low, it should be channelled to the appropriate authorities so that more extension agents would be posted to the study area to assist in the dissemination of agripreneurship information. Since, for now, agripreneurship is the need of the hour.

4.2.3 Agripreneurship Activities of the Respondents

Farming activities: Out of the total, 201 respondents representing 91.4 percent grow crops, carry out horticulture, raise livestock and/or undertake non-traditional agriculture activities as sources of income.

Crops Production: Crops grown by the respondents were grouped under food (arable) and tree crops. The arable crops consist of maize, rice, cassava, yam and plantain whiles the tree crops consist of oil palm and cocoa. Others were also found to involve in horticultural activities consisting of vegetables and fruits production. The findings are presented in table 4.11. The results indicated that 40.3 percent grow maize, 1.5 percent grows rice, 24.9 percent grow cassava, 2.5 percent grow yam and 4.5 percent grow plantain. Also, 20.9 percent were into oil palm production while 5.5 percent were into cocoa production.

Table 4.11: Crops Grown by the Respondents

Crops	Frequency	Percentage
Maize	81	40.3
Rice	3	1.5
Cassava	50	24.9
Yam	5	2.5
Plantain	9	4.5

Oil palm	42	20.9
Cocoa	11	5.5
Total	201	100

Source: Field Survey, 2022

Horticultural Activities: It was also found that out of the total number of 201 respondents interviewed on agricultural activities, 55 of them were found to be in horticulture activities. With this, 94.5 percent produced vegetables such as aubergine, cabbage, okra, and tomatoes whiles only 5.5 percent produced fruits such as pineapple. The result is shown in table 4.12.

Table 4.12: Horticultural Activities Carried Out by the Respondents

Horticulture activities	Frequency	Percentage
Vegetables	52	94.5
Fruits	3	5.5
Total	55	100.0

Source: Field Survey, 2022

Farming Systems: The results of farming systems are shown in table 4.13. The majority of the youth constituting 79.6 percent practice mixed cropping, 10.4 percent crop rotation, 3.5 percent mixed farming and 6.5 percent practice other types of farming systems such as monocropping and intercropping.

Table 4.13: Farming System Practice by the Respondents

Farming system	Frequency	Percentage
Mixed farming	7	3.5
Mixed cropping	160	79.6
Crop rotation	21	10.4
Others	13	6.5
Total	201	100.0

Source: Field Survey, 2022

Farm Size: The findings showed that 79.6 percent have a farm size between 0.40 to 2.02 hectares and 14.9 percent have a farm size that is less than 0.40 hectares. Only 7.5 percent worked on a farm land which was between 2.43 to 4.05 hectares. The minimum size of their farms was found to be 0.40 hectares and the maximum was 1.21 hectares. The average hectarage was 0.88 which indicated that the farm size of the respondents was low. This could be attributed to the use of manpower and simple farm tools such as cutlass and hoe for farming in the study area accounting for small and medium scale production. The results are presented in table 4.14 below.

Table 4.14: Farm Size of the Respondents

Farm size	Frequency	Percentage
Less than 0.40 hectares	30	14.9
0.40 to 2.02 hectares	156	79.6
2.43 to 4.05 hectares	15	7.5
Minimum	0.40	–
Maximum	1.21	–
Average	0.88	–

Source: Field Survey, 2022

Farm Animals Kept by the Youth: Apart from farming activities carried out by the youth in the study area, 27 of them represent constituting 12.3 percent raised livestock in addition to farming activities. The results are shown in table 4.15. From the table, it is seen that 0.5 percent keeps poultry farm, 5.9 percent raised sheep, 2.3 percent raised goats and 3.6 percent raised pigs.

Table 4.15: Livestock Kept by the Respondents

Livestock	Frequency	Percentages
Sheep	13	5.9
Goats	5	2.3
Pigs	8	3.6
Poultry	1	0.5
Total	27	12.3

Source: Field Survey, 2022

Trading Activities: Table 4.16 shows the results of the trading activities of the respondents. A total of 74 respondents representing 33.6 percent were found to conduct trade activities. With this, the majority consisting of 13.2 percent sold vegetables, 7.7 percent sold fruits and, 4.5 percent sold food stuff. Only few consisting of 1.4 were into agro-chemicals sales and 6.8 percent were into what this study termed it as 'speculative agripreneurship business involving aggregation of palm oil and grains.'

4.2.4 Speculative Agripreneurship Business

Speculative agripreneurship business is defined in this study as a type of agricultural trade whereby agripreneurs buy agricultural commodities at certain prices in the present and sell them at an uncertain price in the future. The focus group interview conducted with the agripreneurs involved in this type of business on the risky level revealed that it is riskier compared to other businesses due to future price uncertainties associated with it. Based on this, the definition was also devised as a process of undertaking

a risky trade (business) with the hope of making a profit in future in the agricultural sector. This brings to life what has been documented by Drucker and Cantillon over a century ago that entrepreneurs buy at a certain price in the present and sell at an uncertain price in future. In this way, agripreneurs involved in the business take the risk and buy the commodity with the anticipation of future price increase. Thus, the agripreneurs need to store the purchased commodity for some months before selling them. In this case, good storage leads to a high selling price and more profits.

The respondents further explained that the business is very sensitive to time in terms of buying and selling periods. They revealed that buying and storing of the commodity should occur during bumper harvest while selling should occur during the period of scarcity. They further mentioned that this is where the profit level is highest. The three main commodities found to be traded by the agripreneurs were palm

Table 4.16: Trading Activities of the Respondents

Trading activities	Frequency	Percentage
Food stuff	10	4.5
Fruits vendors	17	7.7
Vegetable vendors	29	13.2
Agro-chemicals	3	1.4
Speculative agripreneurship business	15	6.8
Total	74	33.6

Source: Field Survey, 2022

oil, rice and maize. The results are summarized in table 4.17. From the table, two periods are indicated, Period I and Period II. Period I shows the range of months in which all the agripreneurs are expected to purchase the commodities (palm oil, rice or maze) for storage. It is also the period in which the commodities are in abundance and the prices are at their possible lowest level while Period II shows the range of months in which the agripreneurs are expected to release the commodity to the market for sale.

It also shows the periods of months in which the commodities are relatively scarce and their prices are at their highest possible level.

Table 4.17: Expected Periods of Speculative Agripreneurship Business

Commodities	Palm oil	Rice	Maize
Period I	March – August	August – November	August – February
Period II	September – February	December – July	March – July

Source: Author's design based on the field data, 2022

4.3: Identification of the Agripreneurship Opportunities

Table 4.18 presents the agripreneurship opportunities identified as not significant, less significant, significant and most significant that can be used by the youth in the study area as sources of employment and income generation. From the table, it is seen that all the opportunities identified were significant except farming activities (planting, weeding and harvesting) for cash, horticulture involving vegetables and fruits production and being an artisan as in mechanic, welder and carpenter who contributes to the maintenance and services of agricultural implements. Thus, opportunities such as food crops production (maize, cassava and plantain), ownership of tree crops (oil palm, cocoa and citrus), trading (inputs: seeds, agrochemical, fertilizer), livestock enterprises (ruminant and non-ruminant production), offering of veterinary services, ownership of assets (for: processing, packaging and storage of agricultural produce), nursery, (seedlings production), non-traditional agriculture (honey, mushroom, snail, grasscutter production), and speculative agripreneurship businesses are the major sources of livelihoods in the study area. Again, the mean values of each opportunity revealed that livestock enterprise was the most significant with a mean score of 3.25. This was followed by the pursuance of speculative agripreneurship business (palm oil and grains aggregation), ownership of tree crops, and non-traditional agriculture production with mean values of 3.19, 3.11 and 3.00 respectively.

Table 4.18: Agripreneurship Opportunities

Opportunities	Not significant	Less significant	Significant	Most significant	Mean values
Farming activities (Planting, Weeding, Harvesting)	53 (24.1)	32 (14.5)	78 (35.5)	57 (25.9)	2.3
Food crops production (Maize, Cassava, Plantain)	39(17.7)	29(13.2)	60(27.3)	92(41.8)	2.4
Ownership of tree crops (Oil palm, Cocoa and Citrus)	20 (9.1)	11 (5.0)	89 (40.5)	100 (45.5)	3.1
Horticulture/Vegetables/Fruits Production	124 (56.4)	52 (23.6)	21 (9.5)	23 (10.5)	1.3
Trading/Seeds/Agrochemicals	39 (17.7)	22 (10.0)	96 (43.6)	63 (28.6)	2.8
Livestock enterprise (Ruminant and N0n-ruminant production	0 (0.0)	13 (5.9)	138 (62.7)	69 (31.4)	3.3
Veterinary services	2 (0.9)	57 (25.9)	115 (52.3)	46 (20.9)	2.9
Ownership of assets (For processing, packaging and storage)	22 (10.0)	84 (38.2)	56 (25.5)	58 (26.4)	2.7
Artisans/Mechanics/Welders/Carpenters	32 (14.5)	105 (47.7)	47 (21.4)	36 (16.4)	2.4
Nursery/Seedlings production (Cocoa, Teaks, *Cedrela*)	7 (3.2)	75 (34.1)	108 (49.1)	30 (13.6)	2.7
Non-traditional agriculture (Honey, Mushroom, Snail, Grasscutter production)	12 (5.5)	19 (8.6)	145 (65.9)	44 (20.0)	3.0
Speculative Agripreneurship Business (SAB)	7 (3.2)	13 (5.9)	132 (60.0)	68 (30.9)	3.2

- Mean score ≥ 2.50 implies that the agripreneurship opportunity is significant
- Values in the parentheses are percentages
- Number of opportunities = 12
- N = 220

Source: Field Survey, 2022

4.4 Socio-Economic Characteristics Influencing the Decision to Engage in Agripreneurship

The results of the binary logistic regression analysis of the socio-economic characteristics which influence the decision of the youth to engage in agripreneurship opportunities are presented in table 4.19. The relationship and the significant levels among the variables used in the model are discussed as follows:

Sex

The sex of the respondents had a positive relationship with the decision of the youth to engage in agripreneurship opportunities and was statistically significant at both 5 percent ($P = 0.05$) and 10 percent ($P = 0.10$) levels of significant. The result was consistent with the initial *a priori* because it was expected that the male gender will play a very significant role in the decision of the youth to engage in agripreneurship opportunities than in female counterparts with a positive correlation. This is because males are normally endowed with resources and are capable to take risks compared to females in the same environment. This finding agrees with Mbam & Nwibo (2013) who posited that the male gender is more involved in agricultural activities than the female gender. It is also consistent with the finding of Turkson & Naandam (2006) who indicated that males are more capable to manage household productive assets and are mostly decision makers in African societies as compared to their female counterparts. The result is also similar to that of Nwibo et al. (2016) who found that the gender composition of the youth, significantly affect the decision and the intensity to engage in farming. In terms of probability, the model predicted 99.9 percent likelihood of the male gender deciding to engage in agripreneurship opportunities than the female counterpart *ceteris paribus*.

Marital Status

Marital status also had a positive influence on the youth decision to engage in agripreneurship opportunities and was significant at 10 percent ($P = 0.10$) level only. This was also in line with the initial *a priori* expectation since it was hypothesized that marital status will have either a positive or negative

effect on the decision of the youth in the study areas to engage in agripreneurship opportunities. This positive relationship suggests that, *ceteris paribus*, as the majority of the youth in the study area, get married, their drive to engage in agripreneurship opportunities increases. The model predicted 94.7 percent chance of those who have married to decide to engage in agripreneurship opportunities as compared to those who have not.

Previous Agripreneurship Experience

Experience had a positive and significant relationship with the decision of the youth to engage in agripreneurship opportunities at significant levels of both 5 percent and 10 percent. This implies that the more experienced the youth have gathered by engaging in previous agripreneurship opportunities, the more they would be willing to embrace similar opportunities because as the level of experience increases, their knowledge level also increases. This result concurs with Nwibo & Okorie (2013) who found positive relationship between the years of agripreneurial experience and the youth decision to be agripreneur. Contrary to this was that, their agripreneurial experience was significant at 1 percent ($P = 0.01$) level. The finding also concurs with the study by Levent & Catherine (2011) who reported that past experience in business of the entrepreneur has positive impact on the entrepreneurial orientation of the firm. This implies that the agripreneurial experience gathered by a farmer has strong association in making him/her to establish similar business within the area or elsewhere where similar opportunity exists. The model predicted 93.9 percent probability of the youth having previous agripreneurship experience to decide to engage in agripreneurship opportunities *ceteris paribus* than those who do not have any agripreneurship experience.

Education

Education had positive influence on the decision of the youth to engage in agripreneurship opportunities and it was significant at both 5 percent and 10 percent level of significant respectively. This implies that,

ceteris paribus as the educational level of the youth in the study area increases the decision to engage in agripreneurship opportunities also increases. The finding was also consistent with the initial *a priori* expectation that education will have positive impacts on the decision of the youth's engagement. The result was also consistent with Nwibo & Okorie, (2013) who mentioned that education has been noted to be a driving force in agripreneurial success. Hence, education is a prerequisite to understanding the nitty-gritty of entering any venture for profit maximization. Again, the result concurs with Levent & Catherine, (2011) who found that educational attainment of an entrepreneur makes a positive impact on a firm's entrepreneurial orientation.

Employment Status

Employment status also had positive influence on the decision of the youth to engage in the opportunities at a significant level of 5 percent and 10 percent. This was also consistent with the initial *a priori* expectation because it was noted that employment is a source of income to the youth. Thus, as the income from employment increases, the purchasing power of the youth also increases and this increases their chance to continue engaging in the opportunities so as to generate more income. The model predicted 99.9 percent chance of those who were employed to decide to engage in agripreneurship opportunities than those who were not.

Awareness

Creating awareness on the adoption of entrepreneurship in agriculture among the youth as a means of achieving sustainable sources of employment and income generation had a positive effect on the decision to engage in agripreneurship and was significant at 10 percent level, indicating that with other factors being equal, as awareness level increases, the decision to engage in agripreneurship opportunities also increases. In other words, the more the youth are informed on the importance and the benefits of engaging in agripreneurship, the more their decision to participate increases. Awareness of agripreneurship was

also consistent with the initial positive *a priori.* The model predicted 99.3 percent chance of those who are aware of agripreneurship to decide to engage in agripreneurship opportunities compared to those who were not aware *ceteris paribus*.

Farm Size

Farm size had a positive influence on the youth decision to engage in agripreneurship opportunities and significant at both 5 percent and 10 percent level. This result is also consistent with the initial positive *a priori* expectation. Thus, the bigger the farm size, the higher the source of farm income. This implies that as farm size approaches large scale or becomes commercial, the more the decision of the youth to engage in agripreneurship opportunities increases. The model predicted 99.9 percent likelihood of those youth who have large farm size to decide to engage in agripreneurship opportunities than those who do not *ceteris paribus*.

Farmers' Based Organization (FBOs)

Being a member of FBOs was significant at both 5 percent and 10 percent level and positively influence the decision of the youth to engage in agripreneurship opportunities. This was also in line with the *a priori* expectation because members belonging to an organization receive training; acquire knowledge and skills that increases their chances of engagement to utilize the opportunities more effectively to improve their livelihoods. Thus, as the youth join an organization, all things being equal, their decision to engage in agripreneurship opportunities also increases. The model predicted 99.9 percent probability of those youth who belong to an organization to decide to engage in agripreneurship opportunities compared to those who do not belong to any organization *ceteris paribus*.

The findings further revealed that only a few consisting of 9 percent (19 respondents) of the youth compared to their counterparts consisting 91 percent (201 respondents) decided not to engage in agripreneurship opportunities. This is illustrated in figure 4.3 below.

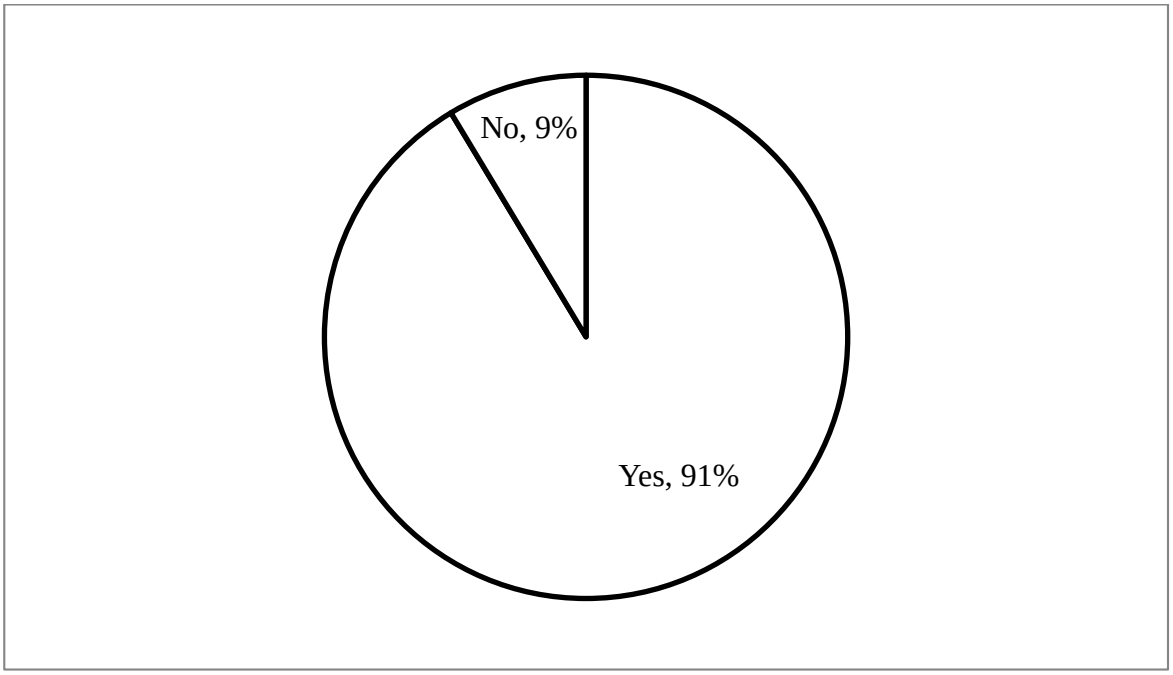

Figure 4.3: Decision of the Youth to Engage in Agripreneurship Opportunities

Source: Field Survey, 2022

However, other variables such as age and household size were not statistically significant at any level. This means that both variables, age and household size have no effect on the decision of the youth to engage in agripreneurship opportunities in the study area. These results however did not conform to the hypothesized *a priori* because it was initially expected that those variables would have a significant influence on their decision of engagement.

The estimated R^2 statistics consisting of Cox and Snell and Nagelkerke had values 0.394 and 0.886 respectively. Based on these values, it can be seen that the Nagelkerke's R^2 predicts the model fit very well than Cox and Snell implying that the independent variables in the model explained 88.6 percent of the total variations of the dependent variable. In addition, the model was statistically significant at 1 percent level based on the Chi-square test. The Log likelihood value of 19.268 indicates that the coefficients in the model in the presence of the explanatory variables were also statistically significant.

Table 4.19: Socio-Economic Factors that Influence the Decision of the Youth to Engage in Agripreneurship Opportunities

Description of variables	Coeff. estimates	S. E.	Wald	df.	Sig.	Exp(B)	*P* - value
Constant term	-57.707**	23.616	5.972	1	0.015	.000	. 000
Age	-2.676	1.678	2.543	1	0.111	0.069	0.065
Sex	16.991**	6.720	6.392	1	0.011	23928717.736	0.999
Marital status	2.891***	1.486	3.784	1	0.052	18.008	0.947
Household size	-3.813	3.136	1.479	1	0.224	.022	0.022
Agripreneurship experience	2.736**	1.348	4.121	1	0.042	15.429	0.939
Education	3.983**	1.705	5.453	1	0.020	53.663	0.982
Employment	8.744**	3.341	6.497	1	0.011	6275.597	0.999
Awareness	4.901***	2.677	3.352	1	0.067	134.361	0.993
Farm size	14.432**	5.715	6.376	1	0.012	1852263.994	0.999
Farmers' Based Organization	6.842**	3.349	4.174	1	0.041	936.472	0.999
Number of obs. = 220	**P = 0.05 and ***P = 0.10 are significant at 5% and 10% respectively.						
Pseudo R^2							
Cox and Snell = 0.394							
Nagelkerke = 0.886							
-2Log likelihood = 19.268							
Chi-square = 110.111							
Prob. > chi-square = 0.000							

Source: Field Survey, 2022

4.5 Constraints Facing Agripreneurs in the Study Area

Table 4.20 presents the identified constraints facing the agripreneurs in the study area. It is seen from the table that lack of financial support received the least mean value of 2.07, followed by high inputs prices

which received a mean value of 2.48. On the other hand, inadequate storage facilities received a mean value of 3.71, a low level of agripreneurship education also received a mean value of 4.20, poor transportation systems received a mean value of 4.15 and that of inadequate demand for the output was 4.40. This results revealed that the majority of the youth ranked lack of financial support first indicating that, lack of financial support was the most pressing constraint facing agripreneurs in the study area.

High inputs prices were ranked as the second most pressing constraint that is the second most pressing constraints. Inadequate storage facilities were ranked third indicating that it is the third most pressing constraint. On the other hand, poor transportation systems and low demand for agricultural output were ranked fifth and sixth respectively, implying that they are the least constraints facing agripreneurs in the study area.

In order to determine whether there was some degree of agreements among the respondents in ranking the constraints, Kendall's Coefficient of Concordance also called Kendall's *W* was applied, and the test statistics obtained are shown under table 4.20. The estimated Kendall's *W* for the ranking of the constraints was 0.315. Based on the estimated chi-square value of 298.787 with 5 df, the null hypothesis as stated in the methodology is rejected and the conclusion is that there is some degree of agreement among the respondents in ranking the constraints, at an asymptotic significant level of 0.000. In this case, the youth in the study area fairly agree that the constraints facing agripreneurs in the study area are more related to first and foremost lack of financial support, high inputs prices and then inadequate storage facilities, while poor transportation systems and low demand for agricultural output being the least constraints in the BND.

The finding of lack of financial support agrees with Nachimutu et al. (2018) who reported that most farmers are constraint with financial support while Nib et al. (2016) mentioned that it was due to lack of loan. The finding on high inputs prices as ranked by the respondents also concurs with what has been published by Twumasi et al. (2019) who found that 39 percent of the respondents perceived that

prices of farm inputs (fertilizer, seeds, etc.) were high and that of inadequate storage facilities also concurs with the findings of GSS (2010 PHC) who published that one of the main challenges farmers in Birim North faced is inadequate facilities for storing agricultural produce.

Table 4.20: Constraints Facing Agripreneurs in the Study Area

Constraints	Mean Rank	Rank
Lack of financial support	2.07	1st
High inputs prices	2.48	2nd
Inadequate storage facilities	3.71	3rd
Low level of agripreneurship education	4.20	4th
Poor transportation systems	4.15	5th
Low demand for agricultural output	4.40	6th
N	190	
Kendall's *W*	0.315	
Chi-square	298.787	
df.	5	
Asymp. Sig.	0.000	

Source: Field Survey, 2022

By ranking lack of financial support and high input prices as the most pressing constraints, it becomes necessary to investigate whether they are statistically significant and have some degree of influences on their decision to engage in agripreneurship opportunities. Therefore, the two variables were input in the binary logistic model and analyzed. The results showed that none of the coefficients of the two variables was statistically significant at any level.

When the variable, lack of financial support was dropped from the model, all the variables were statistically significant at both $P = 0.05$ and $P = 0.10$ level except age, household size and high input price which was not statistically significant at any level.

In the same direction, when the variable lack of financial support was included while high input price was dropped from the model, none of the coefficients estimated was statistically significant at any level. In effect, both variables were not statistically significant at any level and therefore do not influence the youth decision to engage in agripreneurship opportunities despite ranking them as the most pressing constraints facing them in the study area. The results are presented in Appendix iii.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary and conclusions of the study based on the results. This is followed by policy recommendations for further actions.

5.2 Summary of the Study

The study was set forth to identify the various agripreneurship opportunities that can be used by the youth as sources of employment and income generation in the quest of sustainable livelihoods. It also examined the socio-economic characteristics that would significantly influence the decision of the youth to engage in those agripreneurship opportunities. The study also identified and analyzed the constraints agripreneurs in the study area faced. The analytical approaches and models used for the achievements of the specific objectives were the Likert scale, binary logistic regression using SPSS version 20 and Kendall's Coefficient of Concordance.

By applying the multi-stage sample technique, pretest questionnaires were used through a survey to sample two hundred and twenty (220) youth from six randomly selected communities within Birim North District of Ghana. Specifically, the Likert scale was used to identify the most significant agripreneurship opportunity in the study area. The binary logistic regression model was used to analyze the socio-economic characteristics that significantly influence the decision of the youth to engage in agripreneurship opportunities. The Kendall's Coefficient of Concordance was used to identify and rank the constraints facing agripreneurs in the study area as well as analyze the degree of agreement among the respondents in ranking the constraints.

The results of the Likert scale analysis identified twelve agripreneurship opportunities with livestock production enterprise and speculative agripreneurship business consisting of palm oil and grains aggregation dominating. The results of the binary logistic regression analysis of the socio-economic characteristics influencing the decision of the youth to engage in agripreneurship opportunities also showed that sex, employment status and farm size were the three most statistically significant at 5 percent (P = 0.05) and 10 percent (P = 0.10) level and positively correlated with the youth decision of engagement. The other socio-economic characteristics such as marital status, previous agripreneurship experience, education, awareness of agripreneurship, and membership of Farmers' Based Organizations (FBOs) were also statistically significant at both 5 percent and 10 percent level of significance while age and household size were not significant at any level.

The Kendall's Coefficient of Concordance analysis revealed that lack of financial support was the most pressing constraint facing agripreneurs in the study area, followed by high inputs (seeds, fertilizers, pesticides, weedicides etc.) prices, and inadequate storage facilities for palm oil and grains aggregation. The results further revealed that there was some degree of agreement among the respondents in ranking of the constraints.

5.3 Conclusions

- Based on the findings, it can be concluded that livestock production enterprises, speculative agripreneurship business, non-traditional agriculture (honey production, grasscutter rearing, mushroom production, etc.), nursery (seedlings production) and ownership of assets (for processing and packaging of agricultural produce) are agripreneurship opportunities that can be engaged in by the youth in the study area as a means of employment and income generation for an improvement of their livelihoods.

- The major socio-economic characteristics that will influence the youth's decision, should they decide to engage in agripreneurship opportunities in the study area are sex, marital status, previous experience, education, employment status, awareness of agripreneurship, farm size, and being a member of Farmers Based Organizations (FBOs).
- Low demand for agricultural output, poor transportation system, inadequate storage facilities, low level of agripreneurship education, high inputs prices and lack of financial support were the constraints found facing agripreneurs in the study area. However, the respondents ranked lack of financial support, high farm inputs prices, and inadequate storage facilities as the most pressing constraints while poor transportation systems and low demand for agricultural produce were ranked as the least constraints. Thus, given the agripreneurship opportunities such as livestock production enterprise, speculative agripreneurship business, non-traditional agricultural activities and the significant socio-economic characteristics, males with high levels of education who are aware, more experienced and belong to Farmers Based Organization are more likely to decide to engage in agripreneurship opportunities than their counterpart. In general, the majority of the youth were willing to engage in the agripreneurship opportunities, in particular if they are provided with financial support and subsidies on farm inputs.

5. 4 Policy Recommendations

Based on the conclusions presented above, the following recommendations are put forward for policy considerations.

- Agricultural programmes that aimed at providing employment and income generation to enhance the livelihoods of the youth living in the study area should target on livestock production enterprises, speculative agripreneurship business, non-traditional agriculture or nursery of tree crops as they were found significant.

- Education, awareness creation, and female participation are key components that need to be considered by the policymakers to stimulate the adoption of agripreneurship as avenues of employment and income generation. This could be achieved through designing a sensitization programmes such as workshops and trainings that include all the youth and the stakeholders to increase the awareness level and educate the youth on the benefits derived from participating in agripreneurship ventures. This is necessary because it was found that currently, 35 percent of the total respondents sampled for the study constituting 77 were into primary businesses unrelated to agriculture. Of this, 20 (9.1 percent) was found to engage in illegal mining activities, popularly known as 'galamsey', 46 (20.9 percent) were into a motorcycle and 11 (5.0 percent) were into tricycle riding. As indicated by some directors of Business Advisory Centres, their main focus is on how to get 'quick money' thus neglecting agriculture.
- There should be a wakeup call on the financial institutions, NGOs and corporate bodies to devise mechanisms that facilitate easy accessibility of financial support for the youth who venture into agripreneurship projects. Government should continue to provide subsidies on farm inputs (seeds, fertilizers, weedicides, pesticides, etc.) and extend them to reach the youth in BND. This will reduce the burden of purchasing inputs at high prices by the youth and increase their participation in agripreneurship opportunities.

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APPENDICES

Appendix i: Questionnaires

EXAMINING YOUTH ENGAGEMENT IN AGRIPRENEURSHIP OPPORTUNITIES AS A MEANS OF SUSTAINABLE LIVELIHOODS IN MINING COMMUNITIES IN THE BIRIM NORTH DISTRICT OF GHANA

My name is Emmanuel Osei Opoku a graduate student at the above-mentioned university carrying a study on the topic: Examining Youth Engagement in Agripreneurship Opportunities as a means of Sustainable Livelihoods in Mining Communities in the Birim North District of Ghana with the specific objectives;

1. What are the agripreneurship opportunities in the study area are sustainable that can be used by the youth as sources of employment and income generation?
2. What socio-economic characteristics influence the decision of the youth to engage in agripreneurship opportunities?
3. What are the constraints do agripreneurs in the study area face?

It is an academic exercise and all the information given shall be used solely for this purpose. I would therefore be very grateful if you could provide the necessary answers to the questions stated below. All information provided would be treated anonymous and kept confidential. Thank you.

You may contact me on 0204564849 for any enquiries.

BACKGROUND INFORMATION

Name of the community …… Date …... …../ …..…. / …..….

- *Please tick the appropriate box for the options provided for each question and specify where necessary.*

SOCIO-ECONOMIC CHARACTERISTICS

1. What is your age (in completed years)? 1. 25 – 30 [ ] 2. 31 – 35 [ ] 3. Others (Please specify) .....
2. The sex of the respondent? 1. Male [ ] 0. Female [ ]
3. What is your marital status? 1. Single [ ] 2. Married [ ] 3. Divorced [ ]
   4. Widowed [ ] 5. Separated [ ]
4. How many children do you have? 0 None [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] Above 5 [ ]
5. What is your household size? 1. 1 – 3 [ ] 2. 4 – 6 [ ] 3. Above 6 [ ]
6. What is your residential status? 0. Non – native [ ] 1. Native [ ]
7. What is your highest level of formal education? 0. None [ ] 1. Primary/Basic school [ ]
   2. JSS/JHS [ ] 3. SSS/SHS [ ] 4. Technical/vocational [ ] 5. Undergraduate [ ]
   6. First degree [ ] 7. Post graduate diploma [ ] 8. Masters degree [ ] 9. Doctorate degree [ ]
8. What is your employment status? 0. Unemployed [ ] 1.Employed full-time [ ]
   2. Contract [ ] 3. Part time [ ] 4. Self-employed [ ]
9. What is your major occupation? 1. Farming [ ] 2. Trading [ ] 3. Teaching [ ]
   4. Miner [ ] 5. Civil servant [ ] 6. Others (Please specify) ……..……
   ……..……
10. What is the range of your annual net income status? 1. Below GHS1,000 [ ] 2. GHS1,000 – 2,000 [ ] 3. GHS 2,100 – 3,000 [ ] 4. GHS 3,1000 – 5,000 [ ] 5. Others (Please specify) …….

FARM AND MARKET – LEVEL CHARACTERISTICS

11. What is the range of your farm size? (measured in acres) 1. Less than 1 [ ] 2. 1 – 5 [ ] 3. 6-10 [ ]

    4. 11 – 15 [ ] 5. Above 15 [ ]

12. What type of land tenure system do you practice? 1. Freehold [ ] 2. Leasehold [ ]

    3. Customary [ ] 4. Government [ ]

13. What type of farming system do you practice? 1. Mixed Farming [ ] 2. Mixed Cropping [ ]

    3. Crop Rotation [ ] 4. Others (Please specify) …….....…..……

    …….....……

14. What major food crops do you normally produce? 1. Maize [ ] 2. Rice [ ]

    3. Cassava [ ] 4. Yam [ ] 5. Plantain [ ] 6. Others (Please specify) …….....…

    …….....…….……

15. Could you please give reason for your selected crops …….....……

    …….....…….……

16. Do you produce them commercially, subsistence or on both basis?

    1. Yes, commercial only [ ] 2. Yes, subsistence [ ] 3. Both commercial and subsistence [ ]

    4. None of them [ ]

17. How many distances (in kilometres) do you cover before reaching your farm?

    1Km [ ] 2Km [ ] 3Km [ ] Above 3km [ ]

18. In terms of sales, do you produce them for sale with minor consumptions?

    1. Yes [ ] 2. No [ ] 3. Others (Please specify) …….....……

    …….....…….

19. Do you own or take care of any of these tree crops; cocoa, oil palm or citrus? 1. Yes [ ] 2. No [ ]

20. If yes select the one applicable to you 1. Cocoa only [ ] 2. Oil palm only [ ] 3. Citrus only [ ]

4. Cocoa and palm oil [ ] 5. Oil palm and citrus [ ] 6. Cocoa and citrus [ ] 7. All the three crops

21. If yes, how many acres? Please specify ……

22. Where do you sell your agricultural produce? 1. Market [ ] 2. Farm gate [ ]

3. Shop [ ] 4.Road side [ ] 5. Others (Please specify)……...……...

COMMUNITY – LEVEL CHARACTERISTICS

23. How long have you stayed in this community? 1. 1 – 10 [ ] 2. 11 – 20 [ ]

3. 21 – 30 [ ] 4. Above 30 [ ]

24. Do you belong to any farmer association or organization in this community?

1. Yes [ ] 0. No [ ]

25. Do you have market in this community? 1. Yes [ ] 0. No [ ]

26. What is the status of road networks in your community? 1. Good [ ] 2. Very good [ ]

3. Moderately good [ ] 4. Excellent [ ] 5. Poor [ ] 6. [ ] Very poor

27. What is the status of communication networks in your community? 1. Good [ ]

2. Very good [ ] 3. Moderately good [ ] 4. Excellent [ ] 5. Poor [ ] 6. Very poor [ ]

28. Under what medium do community members make announcement? Through; 1. Community information centre [ ] 2. The uses of horns [ ] 3. House-to-house [ ]

29. Do you have social centre in your community for gathering purposes? 1. Yes [ ] 0. No[ ]

30. What is the main economic activity in your community? 1. Farming [ ] 2. Trading [ ]

3. Mining [ ] 4. Others (specify) …….....……..

THE YOUTH DECISIONS TO ENGAGE IN AGRIPRENEURSHIP DIMENSIONS

31. Are you aware of what agripreneurship is about? 1. Yes, I am aware [ ] 0. No, I am not aware [ ]

32. If yes, please indicate the source of your awareness? Through; 1. Extension agent [ ] 2. Farmers' based association [ ] 3. Seminar/Training/Workshop [ ] 4. Media [ ] 5. Others (Please specify) .....

33. Are you currently engaged in any agripreneurship activity? 1. Yes [ ] 0. No [ ]

34. If yes indicate the type of agripreneurship activity you are into (You may tick more than one) 1. Crop cultivation [ ] 2. Livestock [ ] 3. Service/Trading [ ] 4. Crop and Livestock [ ] 5. Crop and service/trade [ ] 6. Livestock and Service/trade [ ] 7. Others (Please specify)

…….

35. If crops**,** indicate the main type of crop grown …….……

36. Indicate the number of the crops enterprises …….……

37. If animals**,** indicate the main type of animal reared …….……

38. Indicate the number of the animal enterprises …….……

39. If services**,** indicate the main type of service you offer …….……

40. If trade, indicate the main type of trade .....

41. Others (Please specify) …….…..

42. Could you please specify the range of monthly income (in Ghana cedis) earned from each of them?

…….……..……

43. If no to 36, please mention your current occupation/job:……..……..…….……

44. Could you please explain or give reasons why you changed your occupation? .....

.....…….…….……..……..…….

…… ……..……..……

45. Have you ever decided or planned to engage in any agriculture venture to the best of your knowledge? 1. Yes [ ] 0. No [ ]

46. If yes, what venture? ……..…….

47. If no, please give reasons …….....…….

.....

AGRIPRENEURSHIP AND LIVELIHOODS DIMENSION

48. Would you say that agripreneurship activity has enhanced your livelihoods as a youth in this community? 1. Yes [ ] 0. No [ ]
49. Do you have access to financial support when required? 0. No [ ] 1. Yes [ ]
50. If yes from which source? 1. Formal [ ] 2. Informal [ ] 3. Both [ ]
51. If formal, which of the following is the main source? 1. Commercial bank [ ] 2. Rural bank [ ] 3. Microfinance [ ] 4. Others (Please specify)……...……...
52. If no, which of the following is/are preventing you from getting access to financial support?
53. 1. Interest rate is high [ ] 2. Cumbersome procedures [ ] 3. Do not have collateral [ ] 4. Do not have account [ ]
54. How do you perceive farm inputs prices at market? 1. Low [ ] 2. Average [ ] 3. High [ ]
55. What are some of your expectations from the mining company, the government, NGOs and other institutions with respect to sustainable livelihoods and opportunities? Please specify ….....……..
56. On a scale of 1 to 4, 1 being not significant, 2 less significant, 3 significant and 4 being the most significant, how would you rank the following livelihoods activities in the table below?

Livelihood activities	**Not significant**	**Less significant**	**Significant**	**Most significant**
1. Farming activities (Planting, Weeding, Harvesting)				
2. Food crops production (Maize, Cassava, Plantain)				

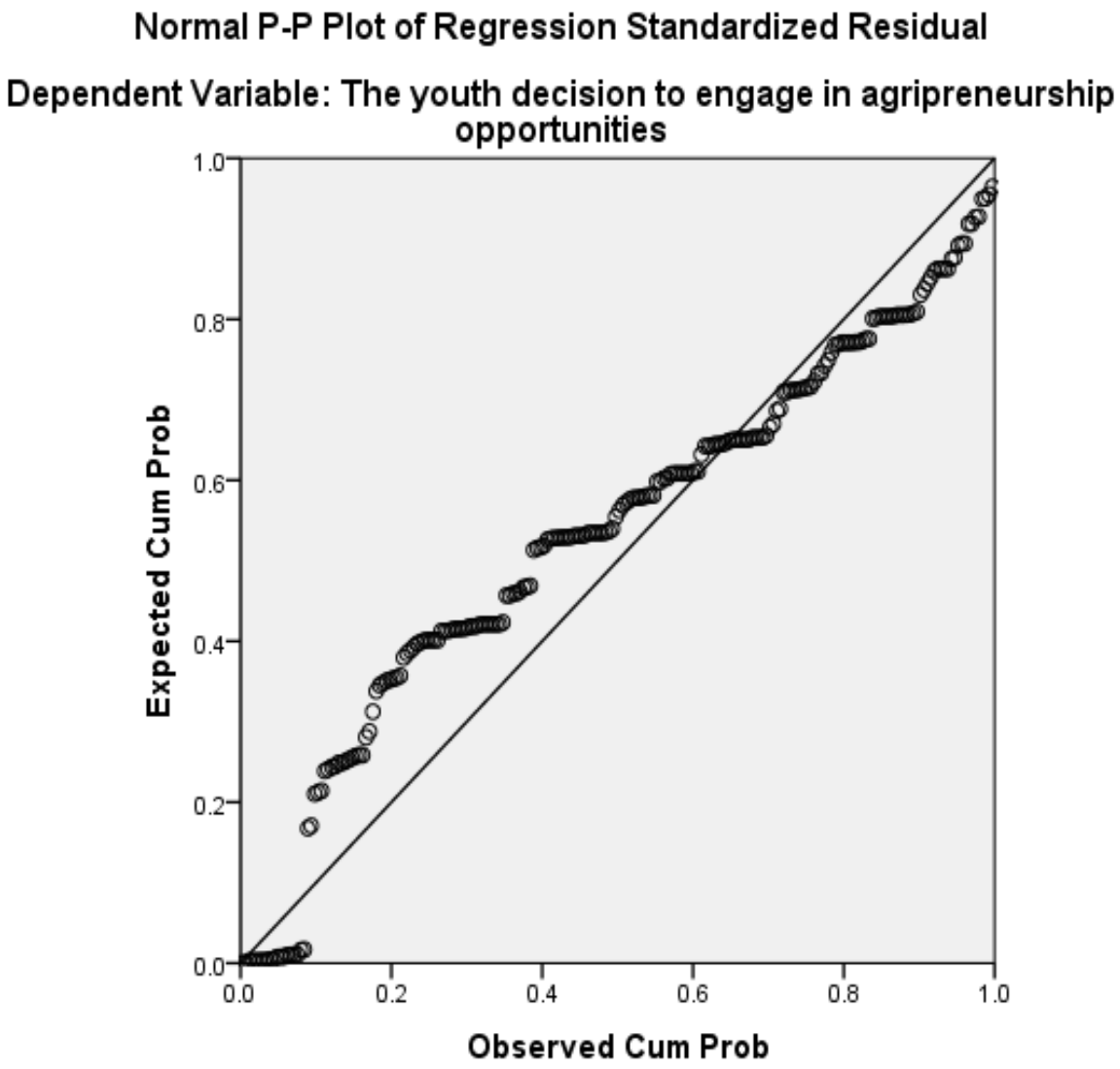
3. Trading/Seeds/Fertilizers/Agrochemi-cal/Processed products/Food stuff				
4. Ownership of tree crops (Cocoa, Oil palm, Citrus				
5. Horticulture/Vegetable/Fruits production				
6. Veterinary services				
7. Artisans/Mechanic/Carpenter/Welder				
8. Nursery				
9. Animal production enterprises (Poultry farm, Ruminant, Non-ruminant production)				
10. Ownership of asset (Processing, Packaging and storage devices				
11. Non-traditional agriculture (Honey, Mushroom, Snail, Grasscutter production)				

CONSTRAINTS – DIMENSION

57. Please rank the following constraints in order of significance. 1 being the least significant to 3 being the most significant.

CONSTRAINTS	RANK
1. Low level of education/training in entrepreneurship	
2. Lack of financial support	
3. Inadequate market for output	
4. Poor transportation system	
5. High prices of farm inputs	
6. Information asymmetry	
7. Others (Please specify)	

Appendix ii: Test for Multicollinearity



Scatterplot Test for Multicollinearity

VIF Test for Multicollinearity

	Unstandardized Coeff.		Standardized Coeff.			95.0% C. I. for B		Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	303	.174		1.740	.083	-.040	.646		
AGE	.068	.038	.115	1.778	.077	-.007	.143	.775	1.291
SEX	.098	.039	.173	2.486	.014	.020	.175	.676	1.479
MARITAL STATUS	.060	.023	.218	2.628	.009	.015	.105	.472	2.118
HOUSEHOLD SIZE	-.043	.037	-.089	-.1.182	.239	-116	.029	.574	1.742
EXPERIENCE	-.002	.018	-.006	-.093	.926	-.036	.033	.908	1.101
EDUCATION LEVEL	.042	.014	.208	3.060	.003	.015	.070	.704	1.420
EMPLOYMENT STATUS	.063	.017	.247	3.678	.000	.029	.097	.721	1.387
AWARENESS	.072	.038	.112	1.908	.058	-.002	.146	.951	1.051
FARM SIZE	.120	.038	.218	3.196	.002	.046	.195	.704	1.421
FBOs	.027	.035	.045	.758	.449	-.042	.096	.930	1.075
FINANCIAL SUPPORT	-.030	.019	-.152	-.1.595	.112	-.066	.007	.359	2.785
FARM INPUT COST	-.032	.016	-171	-2.032	.043	-.063	.001	.460	2.172

a. Dependent variable: The decision of the youth to engage in agripreneurship opportunities

Appendix iii: Output Files

The Binary Logistic Regression Analysis

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	AGE	-2.676	1.678	2.543	1	.111	.069	.003	1.846
	GENDER	16.991	6.720	6.392	1	.011	23928717.736	45.554	12569316613980.383
	MASTATUS	2.891	1.486	3.784	1	.052	18.008	.978	331.422
	HHS	-3.813	3.136	1.479	1	.224	.022	.000	10.303
	AGRIEXP	2.736	1.348	4.121	1	.042	15.429	1.099	216.611
	EDU	3.983	1.705	5.453	1	.020	53.663	1.897	1518.386
	EMPLOY	8.744	3.431	6.497	1	.011	6275.597	7.541	5222442.111
	AWAREAGRIP	4.901	2.677	3.352	1	.067	134.361	.708	25511.563
	FARMSIZE	14.432	5.715	6.376	1	.012	1852263.994	25.283	135699983651.235
	FBO	6.842	3.349	4.174	1	.041	936.472	1.321	664125.713
	Constant	-57.709	23.616	5.972	1	.015	.000		

a. Variable(s) entered on step 1: AGE, GENDER, MASTATUS, HHS, AGRIEXP, EDU, EMPLOY, AWAREAGRIP, FARMSIZE, FBO.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	19.268[a]	.394	.886

a. Estimation terminated at iteration number 12 because parameter estimates changed by less than .001.

The Binary Logistic Regression Analysis when Lack of Financial Support and High Input Prices were Included in the Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	AGE	-199.804	1864.008	.011	1	.915	.000	.000	.
	SEX	308.378	3089.936	.010	1	.921	8.447E+133	.000	.
	MASTATUS	153.635	1394.817	.012	1	.912	5.281E+066	.000	.
	HHS	114.367	1436.615	.006	1	.937	4.666E+049	.000	.
	AGRIEXP	87.591	808.388	.012	1	.914	1.097E+038	.000	.
	EDU	43.754	477.768	.008	1	.927	10046489561634466000.000	.000	.
	EMPLOY	445.979	4480.753	.010	1	.921	4.855E+193	.000	.
	AWAREAGRIP	85.444	1225.083	.005	1	.944	1.282E+037	.000	.
	FARMSIZE	576.916	5692.592	.010	1	.919	3.561E+250	.000	.
	FBO	87.552	888.792	.010	1	.922	1.055E+038	.000	.
	LFINANSUPPORT	-222.752	2249.620	.010	1	.921	.000	.000	.
	FAMINPUTP	66.090	1197.501	.003	1	.956	5038693034183488000000000000000.000	.000	.
	Constant	-1687.164	17045.228	.010	1	.921	.000		

a. Variable(s) entered on step 1: AGE, SEX, MASTATUS, HHS, AGRIEXP, EDU, EMPLOY, AWAREAGRIP, FARMSIZE, FBO, FINANCESUP, FAMINPUTP.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	.000[a]	.445	1.000

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

The Binary Logistic Regression Analysis when Lack of Financial Support was Dropped from the Model and High Input Price Included

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(*B*)	95% C.I. Exp(*B*)	
								Lower	Upper
Step 1[a]	AGE	-2.281	1.722	1.754	1	.815	.102	.003	2.988
	SEX	15.498	7.046	4.838	1	.028	5377100.986	5.410	5344014885384.726
	MASTATUS	3.428	1.931	3.152	1	.076	30.805	.700	1355.500
	HHS	-4.231	3.311	1.633	1	.201	.015	.000	9.559
	AGRIEXP	3.176	1.726	3.386	1	.066	23.943	.813	704.936
	EDU	3.827	1.754	4.759	1	.029	45.934	1.475	1430.653
	EMPLOY	9.316	3.891	5.733	1	.017	11111.442	5.420	22780931.647
	AWAREAGRIP	5.413	3.098	3.053	1	.081	224.380	.517	97346.578
	FARMSIZE	15.525	6.673	5.414	1	.020	5527920.475	11.554	2644680304413.799
	FBO	7.285	3.516	4.292	1	.038	1458.072	1.481	1435360.804
	FAMINPUTC	.720	1.332	.293	1	.588	.487	.036	6.616
	Constant	-59.391	25.798	5.300	1	.021	.000		

a. Variable(s) entered on step 1: AGE, SEX, MASTATUS, HHS, AGRIEXP, EDU, EMPLOY, AWAREAGRIP, FARMSIZE, FBO, FAMINPUTC.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18.996[a]	.395	.887

a. Estimation terminated at iteration number 12 because parameter estimates changed by less than .001.

The Binary Logistic Regression Analysis when Lack of Financial Support was Included in the Model and High Input Cost Dropped

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(*B*)	95% C.I. Exp(*B*)	
								Lower	Upper
Step 1[a]	AGE	-233.449	1771.843	.017	1	.895	.000	.000	.
	SEX	315.671	2314.302	.019	1	.892	1.243E+137	.000	.
	MASTATUS	189.776	1384.279	.019	1	.891	2.622E+082	.000	.
	HHS	106.090	868.036	.015	1	.903	1.187E+046	.000	.
	AGRIEXP	105.461	776.094	.018	1	.892	6.326E+04577025 9363529872	.000	.
	EDU	64.211	495.605	.017	1	.897	9000000000000.0 0	.000	.
	EMPLOY	566.464	4829.427	.014	1	.907	1.028E+246	.000	.
	AWAREAGRIP	126.270	1001.840	.016	1	.900	6.891E+054	.000	.
	FARMSIZE	768.060	7007.101	.012	1	.913	.	.000	.
	FBO	127.600	989.495	.017	1	.897	2.606E+055	.000	.
	LFINANSUPPORT	-189.692	1370.866	.019	1	.890	.000	.000	.
	Constant	-2221.000	19516.180	.013	1	909	.000		

a. Variable(s) entered on step 1: AGE, SEX, MASTATUS, HHS, AGRIEXP, EDU, EMPLOY, AWAREAGRIP, FARMSIZE, FBO, LFINANSUPPORT .

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	.000[a]	.445	1.000

a. Estimation terminated at iteration number 20 because maximum iteration has been reached. Final solution cannot be found.

The Kendall's *W* Test

Ranks

	Mean Rank
Lack of financial support	2.07
High prices of farm inputs	2.48
Inadequate storage facilities	3.71
Low level of education	4.20
Poor transportation	4.15
Inadequate demand for output	4.40

Test Statistics

N	190
Kendall's W[a]	.315
Chi-Square	298.787
df	5
Asymp. Sig.	.000

a. Kendall's Coefficient of Concordance