BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ECONOMICS

AN ANALYSIS OF THE IMPACT OF AGRICULTURE ON ECONOMIC GROWTH IN SUB-SAHARAN AFRICA (SSA). (2000-2020)

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE BACHELOR OF SCIENCE HONOURS DEGREE IN ECONOMICS OF BINDURA UNIVERSITY OF SCIENCE EDUCATION. FACULTY OF COMMERCE.

JUNE 2023

DEDICATION

Firstly, I would like to thank the Lord almighty for taking me this far since the first year at Bindura University and helped me out to finish whilst fit and strong. Secondly, I dedicate the great love and appreciation to my father and mother who with great love and effort accompanied me in the process without any backsliding and hesitation in every moment of supporting my education so that my dream come true.

ABSTRACT

The ability of agriculture to supply extra labour, food, and intermediate inputs for agro processing companies makes it one of the primary drivers of economic expansion in the majority of SSA countries. Additionally, it helps nations to produce more foreign currency and opens up new markets for other sectors. Scholars have been arguing how agriculture affects economic growth in SSA countries, though, for a very long time. Others argue that agriculture is the driving force behind economic growth and a prerequisite for industrialization, despite recent empirical evidence from certain researchers to the contrary. However, this study uses value added per worker for 20 chosen Sub-Saharan African countries from 2000 to 2020 to analyse the connection between agriculture and economic growth. The data was provided by the internet accessible World Bank Development Indicators (WBDI). The data were analysed using both Fixed Effects Models (FEM) and Random Effects Models (REM). The findings imply that agriculture contributes to the economic expansion of Sub-Saharan African countries.

ACKNOWLEDGEMENT

My greatest gratitude goes to my supervisor Dr Kairiza for providing me with guidance and feedback throughout the process of doing this dissertation with great enthusiasm for the project and his unwavering support, encouragement and patience. Lastly, I would like to show great appreciation to the whole Bindura university lecturers and the other team for all the considerate guidance and support during the process.

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LIST OF ACRONYMS

GDP	Gross domestic product
SSA	Sub-Saharan Africa
UNDP	United Nations Development Programme
GLA	Growth led by agriculture
FAO	Food agriculture organisation
OLS	Ordinary least squares
FEM	Fixed effects models
REM	Random effects models
ARDL	Autoregressive distributed lag
UN	United nations
USA	United states of America
KEI	Knowledge
WBDI	Wold Bank development indicators
SADC	Southern African Development Community
COMESA	Common Market for Eastern and Southern Africa
CAADP	Comprehensive Africa Agriculture Development Programme
MAFAP	Monitoring and Analysing Food and Agricultural Policies
ECOWAS	Economic Community of West African States
EAC	East African Community

CHAPTER 1

1.0 Introduction

Agriculture is one of the most crucial drivers of economic growth in sub-Saharan countries because it provides excess labour, food, intermediate inputs for agro processing industries, opens markets to businesses, accumulates capital for business investments, and increases foreign exchange. The majority of people in Sub-Saharan Africa reside in rural areas, which experience the worst levels of poverty and deprivation. considering that practically all rural households depend on agriculture either directly or indirectly and considering the considerable contribution that this sector makes to the overall economy, it should seem evident that agriculture should be a key component of growth and development. Despite having a considerable impact on the eradication of poverty and the transformation of the economies of many Asian and Latin American countries, agriculture-led growth has not yet proven successful in Africa. The bulk of African countries are still far from having the right conditions for an agricultural revolution to succeed, and factor productivity in African agriculture lags far behind that of the rest of the globe. However, for many years, academics have disagreed about the impact of agriculture on economic growth in underdeveloped countries. While other scholars contend otherwise, recent empirical findings from some academics demonstrate that agriculture serves as both a catalyst for economic growth and a necessary step on the road to industrialization. According to Titus (2009), trade openness and agriculture are the two main drivers of economic growth. Agriculture has an impact on the size of the industrial sector, according to Terry & Roe's (2000) research. Dennis and Iscan (2011) examined agricultural distortion, structural change, and economic growth using time series data sets and an absolute assessment of agricultural taxation. They came to the conclusion that the convergence in per capita income, structural change, and economic growth are all influenced by the distortionary agricultural policy. Houssem (2010) found that there is a weak erogeneity for agriculture and sectorial co-integration. Despite the fact that he was aware that only the agro-food processing industry sub sector might find agriculture to be convenient, the expansion of other non-agricultural sectors is fueled by agriculture. Agriculture is significant for the majority of low-income African countries, according to Xinshen (2007). Block (1999) examines the relationship between agricultural and economic growth by calculating the growth multipliers of agriculture, services, industry, and

manufacturing using growth multipliers from a four-sector simulation mode. realized that the inter-sectoral linkage should be important for agriculture. In Sub-Saharan Africa (SSA), agriculture plays a significant role in economic development, poverty reduction, and food security. This demonstrates how crucial the agricultural sector is to the sub-Saharan African countries' rural populations' ability to support themselves. Additionally, it contributes, on average, more than 25percent of the GDP. Due to the agribusiness sector's significant contribution to the GDP of sub-Saharan African nations, the agriculture sector also accounts for nearly half of the GDP. By developing this agricultural sector, it is also possible to diversify the economies of several SSA nations. One method of addressing the global food crises has been the development of Sub-Saharan African agriculture. Due to low investment, a lack of infrastructure, a price policy that is unjustified, a weak system of land tenure, and a lack of strong institutions, the agricultural sector has developed very slowly and has not quite succeeded in increasing agricultural productivity. Additionally, because imports outnumber exports, SSA is more susceptible to fluctuations in global prices. As a result, there is growing doubt about agriculture's contribution to growth and the eradication of poverty in the global community. The argument that agriculture is relevant to economic growth, as it is in sub-Saharan Africa where the economy is dependent on agriculture, prompted me to conduct further empirical research to determine whether this is the case. The strategy chosen for this roundtable, however, was to concentrate on the increase in value added productivity per worker in the production of food crops.

1.1. Background of Study.

Every effort to discuss agriculture in Sub-Saharan Africa is at once both too broad and too specific. Because Sub-Saharan Africa is not one homogeneous entity and because of the diversity of its agro-ecology, market dynamics, regulatory frameworks, and cultural characteristics, generalizing about problem descriptions and remedies is particularly difficult. April (2022) working paper. Agriculture is a unique economic sector because it depends on nature for production.

Access to water and fertile soils are necessary conditions for increasing output. Both of these provide challenges across a large portion of SSA. African soils are naturally low in fertility since they are very old and have not been replaced by volcanic material. Additionally, soil erosion and decreased productivity have been brought on by poor soil

management and a lack of affordable inputs. Smallholder farming practices frequently cause soil nutrient balances to further deteriorate. Bationo from 2009. In a large portion of SSA, lack of soil moisture is perhaps the biggest barrier to crop cultivation. Only 14% of cultivated soils are thought to be affected by moisture stress (Ibid). The growing effects of climate change are likely to make this scenario more uncertain. (2012) Magnusson et al. Only three to six percent of the arable land in SSA is irrigated. Contrarily, agriculture is frequently too linked with other continental economic and cultural endeavours as well as with international political and economic situations to be properly addressed in isolation. As others have shown in IDS Bulletin (2005), there are many factors that affect agricultural growth in Sub-Saharan Africa, and there is a danger of oversimplification (fast fixes) when addressing it. By employing growth multipliers from a four-sector simulation mode to calculate the growth multipliers of agriculture, services, industry, and manufacturing, Block (1999) explores the connection between agricultural and economic growth. understand how crucial the links between sectors should be for agriculture. The Sub-Saharan countries appear to have a competitive edge in agricultural production. A chance exists to concentrate on agricultural production in order to have a favourable domino impact on economic growth if agriculture fosters it. Several sub-Saharan African nations have a wealth of natural and human resources, which, if utilized well, can offer the nations a sizable absolute advantage. As trade openness rises, states may then profit from trading agricultural produce with other countries that are at a competitive disadvantage in these products. Numerous agricultural policies, including land reforms and efforts like The Maputo Declaration, were implemented in 2003 in response to the stagnation of African agriculture. The signatories concurred that agriculture should receive 10% of public spending in order to increase agricultural output. Kreuger August (2015). Subsidies have been provided to the agricultural industry in an effort to assist and support both small- and large-scale farmers. Due to the implementation of irrigation systems and more recently, smart agriculture, many families in developing nations increasingly rely on agriculture as their secondary source of income. The question of whether agricultural production has an impact on economic growth is being investigated by many experts, but the results are conflicting. Agriculture significantly contributes to economic growth, poverty alleviation, and food security in Sub-Saharan Africa (SSA). This highlights how essential the agriculture sector is to the rural communities' ability to survive in sub-Saharan African nations. Furthermore, it contributes typically more than 25% of the

GDP. Expanding this industry can also help to diversify the economies of various SSA countries because it contributes significantly to the GDP of African nations and accounts for about half of it. The growth of Sub-Saharan African agriculture has been one strategy for tackling the global food issues. The agricultural sector has expanded very slowly and has not been able to raise agricultural productivity due to poor investment, a lack of infrastructure, an unreasonable price policy, a weak system of land tenure, and a lack of strong institutions. Furthermore, as imports dominate exports, SSA is more vulnerable to changes in international prices. Through this point of entry, it is feasible to concentrate on what must be a key component of every effort to fight poverty by promoting agricultural growth. The expansion of agriculture and the elimination of poverty are both impacted by a wide range of primary and secondary factors, which can be included in an analysis. The productivity entry point covers a wide range of subjects, such as public policy, human capacities including health and education, the operation of institutions and markets, alternative forms of social engagement to technology, and innovation. This study will concentrate on the value added to agriculture per worker. It is projected that the acute economic crisis that the Sub-Saharan countries have been going through has been made worse by the covid-19 pandemic. The GDP is significantly increased by agriculture compared to other industries. There is a lot of land that is incredibly productive, and agriculture has the ability to drive economic expansion. If the resources are effectively employed to boost agricultural output, economic growth may be negatively impacted. Some of the sub-Saharan African countries had terrible cyclones and droughts, which had a significant effect on agricultural productivity. According to the World Bank, due to the COVID-19 epidemic as well as climatic change, the GDP of the majority of sub-Saharan African countries has decreased and may continue to do so in the ensuing two to three years. In reaction to this climate change, smart agriculture has been established to promote agriculture. The bulk of developing nations' economies are based on agriculture because most people still reside in rural regions and depend on farming and other related rural economic activities for their livelihood, according to the Food and Agriculture Organization (FAO) (2020). According to the United Nations Development Programme (UNDP), 75% of the world's poor live in rural areas and are mainly reliant on farming and fishing. Agriculture not only provides raw materials and inputs to other economic sectors, but also makes sure that there is enough food, employment, and income for

people to exist. According to Bafana (2011), agricultural activities provide employment and income for 60% to 70% of the population in various sub-Saharan African countries, provide 60% of the raw materials used by the industrial sector, and create 40% of all export revenues. As the main source of income for the vast majority of people, agriculture performance is a significant factor in determining the resilience of rural livelihoods and poverty levels. Despite this, smallholder farmers still confront challenges like inconsistent and low rainfall, deteriorating soil fertility, poor investment, a shortage of labour and draft animals for farming, insufficient physical and institutional infrastructure, poverty, and ongoing food insecurity. Due to the abundance of crucial resources required for agriculture in Sub-Saharan Africa, there are numerous doubts about whether agriculture should be used as a vehicle for growth. The presumption that agriculture is relevant to economic growth necessitated my empirical study for a further investigation into whether agriculture has an effect on the economic growth of sub-Saharan African countries where their economies depend on agriculture. This investigation will look into the relationship between agricultural and economic growth.

1.2 Problem Statement

Since agriculture is one of the main sources of income and food security in Sub-Saharan Africa, the aim of this research is to determine whether it has any impact on economic growth in that region.

It is better to be aware of its effects so that some resources and raw materials can be concentrated to concentrate on improving agricultural production for better and quality output to boost economic growth, overcome the highest levels of poverty and food shortages in the countries, as well as to boost employment levels.

1.3 Aim of the study

- To analyse the impact agriculture on economic growth in sub-Saharan Africa.

1.4 Objective of the study

- The objective of this study is to analyse the impact of agriculture on economic growth in sub-Saharan African countries.

- To find out the drivers of agricultural productivity in the SSA
- To determine the current situation of agriculture in the SSA the challenges being faced in the sector by the region.

1.5 Research Questions

1. What is the relationship between agriculture and economic growth in Sub Saharan Africa?
2. What are the key drivers of agricultural productivity in Sub Saharan Africa?
3. What is the current state of agriculture in Sub Saharan Africa, and what are the challenges facing the sector in the region?

1.6 Significant of the study

The conclusion of this paper makes a unique addition by outlining how agriculture affects economic growth.

Making annual budgets for the various economic sectors will be crucial for policymakers and researchers, especially in emerging nations where agriculture dominates the national economy. This will rely on how much agricultural sector contributes to the GDP as compared to other sectors.

1.7 Statement of hypothesis

$H_{0:}$ There is no statistical significant relationship between Agriculture and economic growth in sub Saharan Africa

$H_{1:}$ There is a statistical positive significant relationship between agriculture and economic growth in the sub Saharan Africa.

1.8 Assumptions of the study

1. Since the data utilized to conduct the analysis is accurate and from credible sources, it covers a broad sample of SSA nations.
2. The research assumes that agriculture has the great potential to fuel economic growth just like other factors like natural resources in SSA countries.

3. The study also makes the assumption that increased agricultural research and development will lead to significant economic growth in SSA.

1.9 Delimitations of the study

The study on the relationship between agriculture and economic growth is based on secondary data from the World Bank Development Indicators (WBDI) for 20 sub-Saharan African nations for the years 2000–2020. Due to time constraints and the lack of data for some of these countries, the researcher was unable to cover all 49 sub-Saharan African nations. Additionally, because the research was unable to address the effects of agriculture on the time period prior to 2000, the findings of this study cannot be applied to that earlier time frame. This is due to the lack of statistics in many sub-Saharan African nations.

1.10 Limitations

The researcher faced significant challenges due to a lack of sufficient funding for the investigation. Since some online data sources required payment, there were none that were adequate to link to. Additionally, the researcher's geographic position presented some difficulties because it prevented proper internet use due to network issues.

1.11. Definition of key terms

Agriculture - The production of food, fibre, lumber, and greenery is referred to as agriculture. It is further defined as the process of producing food, industrial raw materials, and energy sources using natural resources.

Agriculture includes the inputs used in production, the social and environmental setting in which farms and people operate, as well as the processing and downstream movement of goods to prepare them for use as food, clothing, construction materials, and energy. But agriculture is much than just food production.

Gross domestic product (GDP) - Is defined as the monetary measure of the market value of all the final goods and services produced and sold in a specific time period by a county or countries.

Economic growth - The increase in real GDP. A growth in an economy's revenue, spending, and national output in terms of value.

1.12 Summary

This chapter emphasizes the research's introduction, its historical context, its issue statement, its goals, and an understanding of how the research was conducted, the data used, and the subject region, which is sub-Saharan Africa. The chapter also provides a brief explanation of the motivations behind the research and a summary of the empirical data from earlier investigations, both of which demonstrate a strong interest in the subject.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

The literature on the contribution of agriculture to economic growth is examined in this chapter to highlight the importance of agriculture. Agriculture used to be associated with the production of staple foods and crops. The agriculture value chain is currently used to expand agriculture to various farming systems. In order for agriculture to validate post-harvest actions up until the product is consumed. And throughout the entire process, many stockholders take advantage of the job opportunities to boost the economy of the nation. For many nations, agriculture is the main industry that generates money. This is because there aren't enough non-agricultural industries for such a large portion of the population to participate in, and because there aren't enough industries that can move workers back and forth between them. Even though the ratio is low, agriculture still accounts for the majority of the countries in developing world's income. It is the primary food source. By increasing the output of cash crops, it is crucial for the nation's foreign exchange. The expansion of small businesses and agro-processing industries is facilitated by market growth in the agricultural sector. The agriculture sector serves as a source of production inputs for those industries as well. Therefore, in addition to providing for food security, agriculture is crucial for saving for the accumulation of capital.

2.1 Theoretical Literature

2.1.1 Rostows theory of growth

W. Rostow (1960), According to the theory, economic growth happens in five distinct stages, each of which has its own characteristics and difficulties. The traditional society represents the first stage and is characterized by subsistence farming, low productivity, investment of less than 5 percent, and low production. The second phase is necessary for take-off and is referred to as the progressive stage because there is a transition from manufacturing to agriculture. Scientific perspective on global innovation and the agricultural technological revolution. The introduction of financial institutions' profit-

making and risk-taking is also a part of this stage. Both international and interregional trade has increased. Infrastructure has been `built, and investment has gone from 5 to 10percent. Both agriculture and industry are undergoing revolutionary change as we take off. Due to innovation and technical advancement in both agriculture and industry, productivity levels are sharply rising. Urbanization and industrialization are increasing. The theory contends that the economy is currently heading toward self-sufficiency. New industries are now being established, capital is now available from a variety of sources, and profits are being reinvested. Additionally, rising domestic demand encourages business growth and results in economies of scale and scope that increase investment by 20% and create jobs. The theory's second phase is its maturation drive. Modern production techniques are used in both the manufacturing and agriculture sectors at this stage, which has a variety of industries. Production rises as a result of higher demand brought on by population growth. There are more export revenues, better job opportunities, higher per capita incomes, and higher living standards. Finally, the economy can sustain itself. The age of high mass consumption, which is characterized by high per capita income, high consumption of luxury goods, nearly resolved employment issues, more leisure time, and finally increased investment and production, is finally reached. From this model, it is obvious that as agriculture improved at each stage, so did economic growth, and at the final stage, there was an increase in GDP per capita, demonstrating the beneficial effects of agriculture on economic growth.

2.1.2 The classical theory of economic growth

Adam Smith made the connection between a gain in people's wealth and an improvement in the output of the production factors (land, labour, and capital), which is reflected in the growth of labour productivity and an increase in the amount of functional capital. A lot of attention was paid to the elements that fuelled rapid expansion, such as population growth, an increase in the share of labourers employed in manufacturing, capital investment, and geographic discoveries. Smith contends that population increase is endogenous and is influenced by the accessibility of resources necessary for subsistence. Additionally, it was understood that investment was endogenous and reliant on the labour and savings of capitalists, with savings being defined as the total of reserves used for industrial rather than domestic consumption. Lavrov and Kapoguzov (2006) discovered a link between geographic discoveries,

scientific advancements, and increases in agricultural productivity. The main causes of Smith's increased productivity were the division of labour and technological advancements. Smith held that competition is at the heart of both individual economic sectors and the country's economy as a whole, and that the division of labour, which is a product of technical developments, may help the economy grow fast. Smith argued that while the results of balancing systems are preferable and advantageous for society, competition might aid in the system's achieving balance, Reid (1989). The projections made by Thomas Malthus (1766–1834) on population growth, economic expansion, and increasing productivity proved to be dismal. According to Malthus, if the ratios between population growth and means of subsistence remain constant, if the population grows exponentially and the means of subsistence grow arithmetically, we will face the impending depletion of the Earth and as a result, a bitter struggle for finite resources, the growth of wars, epidemics, hunger, mass disease, and so on Lavrov and Kapoguzov (2006). Malthus proposed a solution to this problem by urging people to exercise caution, especially the poorest, and to delay having children until they have enough money to live a respectable life. Despite the fact that Malthus' calculations were not entirely correct (he published data on the growth of the population in the United States as a global trend while ignoring the obvious fact that a large number of people were migrating from Europe to the USA) and despite the fact that he failed to predict the degree of development of scientific and technological progress in the field of agriculture, his theory of diminishing returns of factors of production was still actively used in the 20th century.

2.1.3 Physiocracy theory

Is an economic theory that was created in the 18th century by a group of progressive French economists who believed that the value of land was the only source of national prosperity and that agricultural goods should be highly valued. Their beliefs, which were created in France, acquired the most momentum in the latter part of the 18th century. The most significant contribution of the Physiocrats was their focus on productive effort as the foundation of economic development. The Physiocratic school of economics was the first to recognize labour as the exclusive source of value. However, according the Physiocrats, the formation of this value in society goods was solely the result of agricultural labour. All "industrial" labour and non-agricultural labour, according to Marx's (2000) argument, are "unproductive appendages" to

agricultural labour. The physiocrats, who considered economic life as a natural process with intrinsic laws, were the ones who created the natural order principle. They were against the government becoming involved in business. (2007) Osipian.

2.1.4 Neoclassical growth theories

In the 1950s and 1960s, as interest in the issues surrounding dynamic equilibrium started to wane, the challenge of realizing potential growth—which was more dependent on the adoption of new technology, higher productivity, and improved production organization than it was on unused capacity—came to the fore. The American economist Robert Solow (1924) opposed government intervention in the economy along with other academics and favored allowing major corporations to maximize their development potential in a cutthroat market by making the most of the resources available to them. Their methodology was based on two theories: the classical theory of the factors of production, which sees labour, capital, and land as independent factors in the formation of the national product, and the theory of marginal productivity, which maintains that the income received by owners of the factors of production is determined by the marginal products of these factors. Neoclassical theorists have three objections of the neo-Keynesian growth theory, according to UN (2011). First off, they ignore all other factors, especially those pertaining to technical innovation, such as the expansion of education and skill sets, the enhancement of production organization, etc. since they are solely focused on one growth component, capital accumulation or investment growth. They also come from the fact that the capitalists' share of the profits is unchangeable. The neoclassical model offers the flexibility to vary the coefficient of capital because it takes into consideration both labour and capital and presumes their interchangeability. Thirdly, because the Neo-Keynesians undervalued the market mechanism's potential for automatic rebalancing, even with today's technological equipment for production, a particular output volume can be obtained by applying different combinations of resources. Neoclassical economists, on the other hand, believed that a competitive market system is the only one that can lead to balanced economic growth. This criterion also holds true for a sound monetary system. They opposed inflationary government spending because they saw government interference in the economy as a threat to stability.

2.1.5 The Theory of Robert Solow

First presented in A Contribution to the Theory of Economic Growth in 1956, Solow's theory was further developed in The Technical Change and Aggregate Production Function in 1957. For its advancement, the author was awarded the Economics Nobel Prize in 1987. R. Solow advances the idea that the equilibrium of the economic system requires that aggregate demand and supply be equal. In accordance with his theory, aggregate supply is determined using the Cobb-Douglas production function, which captures the functional relationship between production volumes on the one hand, and the factors used and their combinations on the other. Investments, the labour force, and technical advancement are three factors that can be related to economic growth, in accordance with Solow's thesis. The hypothesis demonstrates that the amount of capital intensity is significantly influenced by the savings rate. A higher saving rate causes investment growth or capital stock to increase, which in turn boosts output. According to Solow's theory, population expansion is one of the elements that helps an economy grow steadily in a stable economic environment. However, this results in a decline in the capital stock per worker if population expansion is not matched by a rise in investments. According to R. Solow's theory, countries with higher rates of population growth are expected to have lower capital-labour ratios and incomes. Technology advancement ranks third in terms of economic growth after investments and a rise in employment. It should be stressed that technological advancement in neoclassical theory does not imply that machines will eventually replace human labour. Instead, it implies that there will be qualitative changes in production, such as better organizational structures, higher worker education levels, larger production scales, etc. R. Solow was the first economist among all of his colleagues to get a deeper and more comprehensive grasp of the economic efficiency of production as a largely independent driver of economic expansion and a tangible source of social progress in the last quarter of the 20th century. According to Solow's theory, the sole prerequisite for a continuing rise in living standards as indicated by per capita income is technological progress. The ideal amount of capital intensity is determined by R. Solow's "golden rule of accumulation" formula. There are a variety of savings standards that are compatible with equilibrated economic growth, but the standard that permits the maximum degree of consumption will be the best. Contrary to conventional techniques, capital productivity per unit of output (marginal productivity), or the optimal size and cost-effectiveness of the capital, determines the highest consumption. The R. Solow hypothesis highlights technical progress as the only basis for welfare growth that is

sustainable and makes it possible to choose the growth path that would maximize consumption.

2.2 The key drivers of agricultural productivity in Sub Saharan Africa.

Climatic variability - In sub-Saharan Africa, the climate variability, which includes droughts, floods, and other extreme weather events, can have a significant impact on agricultural productivity. To manage the risks associated with climate variability, farmers need access to climate information and adaptive technologies.

Policy environment – A favourable policy landscape is essential for the productivity of agriculture. Productivity can be increased by farmers with the aid of policies that support agricultural development, such as subsidies for inputs. On the other hand, productivity can be hampered by policies that discourage investment in agriculture.

Access to finance and inputs - Is one of the main obstacles to SSA's agricultural productivity. Farmers frequently struggle to get credit to invest in their farms or buy inputs. To increase crop yields, farmers need access to inputs like high-quality seeds, fertilizer, pesticides, and other inputs. Sub-Saharan African smallholder farmers, however, frequently lack access to these inputs because of limited supply, poor infrastructure, and financial constraints.

Agricultural extension services - The knowledge and skills farmers need to improve farming practices like crop rotation, intercropping, and soil conversation are provided by agricultural extension services. The accessibility and calibre of these services, however, differ greatly across sub-Saharan Africa. Additionally, access to them is restricted for many farmers.

Research and development (R&D) - Research and development in agriculture for productivity to increase, investment in floods and other extreme weather events is crucial. Farmers can become more resilient to climate change, increase yields, and lower costs by implementing new technologies and practices.

Infrastructure - When it comes to boosting agricultural productivity and facilitating access to markets, infrastructure like roads, irrigation systems, and storage facilities is absolutely essential. However, poor infrastructure is a significant issue in many areas

of sub-Saharan Africa, making it difficult for farmers to access inputs and transport their goods to markets.

2.3 Empirical literatures

This section takes into account some of the prior research that is pertinent to this study. A lot has been written about how agriculture affects economic growth. The focus of empirical research will be on prior studies that are pertinent to this topic. The availability of surplus labour, the provision of food, the availability of intermediate inputs for agro processing industries, the opening of markets to businesses, the accumulation of capital to invest in businesses, and the rise in foreign exchange are all regarded as key drivers of economic growth. However, for many years, academics have disagreed about the impact of agriculture on economic growth in underdeveloped countries. Despite the statements of some scholars to the contrary, recent empirical data from some specialists imply that agriculture is the mechanism of economic growth and a requirement for industrialization. So it will be interesting to find out if agriculture, which is the study's major goal, really is the engine for economic growth. The body of studies on agricultural and economic growth is reviewed in this section. By employing growth multipliers from a four-sector simulation mode to calculate the growth multipliers of agriculture, services, industry, and manufacturing, Block (1999) explores the connection between agricultural and economic growth. understand how crucial the links between sectors should be for agriculture. Terry L.R. (2001) investigates the significance of agriculture to economic growth using Arthur Lewis's thesis based on Engel's Law, which explains how the industrial sector acts as an industrial sector of agricultural production. Investigated was how agriculture affected other economic sectors. According to the Ramsey genre intertemporal model, The Importance of Agriculture was posted on February 25, 2013 by admin in Agriculture. He has finally realized that agriculture has an impact on the size of the industrial sector. D. Xinshen (2007) evaluated how agriculture affected Sub-Saharan Africa's development and concluded that it was a significant role in the majority of the continent's low-income nations. By analysing national data from developing nations using time series econometrics techniques, Titus O.A. (2009) evaluates the impact of agriculture on economic growth. Using the autoregressive distributed lag (ARDL) error correction model and one of the agricultural development models (neoclassical), which describes agriculture as an engine of economic growth, he studies the backward and forward

impact between agriculture and economic growth. He discovered that agriculture contributes to economic expansion. Houssem E. C. (2010) evaluated the co-integration between the various economic sectors in Tunisia and addressed the issue of erroneous regression and non-causality between the agricultural and other sectors. Even though he was aware that agriculture is a growth engine for other sectors and is particularly advantageous to the agro processing industry sub sector, he nevertheless saw weak erogeneity for agriculture and sectorial co-integration. Dennis and Iscan (2011) evaluated agricultural distortion, changes in the composition of the economy, and economic growth using time series data sets with an absolute assessment of agricultural taxation. They examine the interaction between the distortionary agriculture policy and the convergence of economic development, structural change, and per capita income. Syed Ali Raza and etal (2012) determined that there is a substantial association between agricultural and economic growth by using a simple regression model on secondary data from 1980 to 2010 and testing the contribution of agriculture to economic growth. Researchers Tolulope and Chinonso (2013) examined how agriculture contributed to Nigeria's economic growth using historical data from 1960 to 2011 using a growth accounting framework. They found that agriculture can have some positive influence on economic growth. Contrary to the ALG perspective, Hirschnam (1958), Ranis and Fei (1961), Jorgensen (1961), Lewis (1954), and Hirschnam (1958) assert that there is no connection between agricultural and other industries. According to Matsuyama (1992), the argument of comparative advantage disproves the idea that agricultural productivity theoretically spurs economic progress, which prompts emerging countries to suggest a policy hostile to agriculture. According to Okonkwo (1989), Schiff and Valdez (2002), the industrial sector is the main driver of economic growth, which leads them to support the idea of growth-led agricultural development GLA. Yao (2000) investigated how high taxes in poor nations effect agriculture. The theoretical link between agricultural and economic growth has been the subject of countless research, yet there is still debate. When analysing Titus (2009). Tsakok and Gardner (2007) found that prior studies on the role of agriculture in economic growth were unable to provide exact conclusions because of the considerable restrictions on econometric analysis of cross-sectional data for a panel of nations. This is because the majority of individuals who employed simple correlation coefficient analysis and ordinary least square (OLS) regression may have had improper specification concerns since they failed to account

for the data's dynamic time-series behaviours. Furthermore, rather than just demonstrating a correlation between agriculture and GDP growth, the results are constrained to demonstrate the direction of causality. Furthermore, the contained hypothesis of a similar production activity across various types of economies is ruled out by the disparity in technological development between nations. A number of policy initiatives have been crucial to the sector's development over the past ten years and have been driven by the need for a healthy and sustainable agricultural sector. The Comprehensive Africa Agriculture Development Program (CADDP) was started in 2003 in an effort to revive the continent's flagging agricultural sector. The Maputo Declaration on Agriculture and Food Security sought to achieve a 6 percent annual growth in the agricultural sector by pledging to devote at least 10percent of the national budgetary expenditures to its implementation. Less than 20percent of the nations have fulfilled their commitment to fund agriculture. The Malabo declaration on accelerated agricultural growth, which vowed to eradicate hunger in Africa by 2025, more recently reaffirmed these commitments. Although the agricultural sector has been given priority, the FAO's Monitoring and Analysing Food and Agricultural Policies (MAFAP) program observes a general decline in the proportion of public resources directed toward agriculture in the ten countries examined in 2013. Public funds have been used by these nations to support a wide range of consumer and producer policies. However, some of these investments might have focused primarily on short-term goals that weren't necessarily in line with the sector's long-term development objectives, according to FAO and ECOWAS (2015). An increased policy emphasis on infrastructure, research, and development would be advantageous for the agricultural sector's strategic development. Numerous researchers have pointed to the political and policy framework's instability as a barrier to the sector's development. The consistency of policy applications will continue to be a crucial element in determining the sector's success within the development agenda. Fertilizer subsidy programs have been used in a number of nations as a form of producer support aimed at increasing productivity. While successful in accelerating yield growth in nations like Zambia and Malawi, the long-term effectiveness of such programs is still debatable, with the costs frequently found to outweigh the benefits Jayne and Rashid (2013). An all-encompassing strategy to assist small-scale producers has been promoted as an alternative. This includes funding for research and development in agriculture, extension programs aimed at enhancing soil quality, and the growth of physical infrastructure. The Maputo

declaration on agriculture and food security included a resolution calling for the creation of strategic food reserve systems to support food security. As a result, the majority of the money given to consumer-related programs in the area has gone toward keeping public food stocks of key staple grains. These policies' implementation costs and effects on price distortion must both be taken into account. Where their application is based on open target prices that are in line with import and export parity levels, they have been minimized. In addition, governments supported consumers by enacting transient trade laws like import tariff reductions or export bans. Due to SSA's production growth falling short of demand resulting from population and income growth, imports of food products like wheat, rice, and poultry are on the rise. Import tariffs have frequently been used to support domestic producers, especially in comparison to producers outside the region. The reduction of tariff rates achieved by several regional trade agreements in Africa, including the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Economic Community of West African States (ECOWAS), and the Southern African Development Community (SADC), has been accompanied by a corresponding rise in non-tariff measures. Implementing the 2015-established tripartite free trade area between SADC, COMESA, and the East African Community EAC will create the continent's largest economic bloc, accounting for more than half of Africa's population and GDP, and it could have a significant impact on trade in the region.

2.4 Summary

This chapter attempted to explain the general significance of agriculture to sub-Saharan African economies and how it helps to reduce poverty. The chapter goes into great detail by presenting literature on the role of agriculture in promoting economic growth, both theoretical and empirical. The drivers and difficulties of agricultural productivity in the SSA are also addressed by policies. The results demonstrate how crucial agriculture is to spurring regional economic growth.

CHAPTER III

3.0 Introduction

The research methodology used to examine how agriculture affects economic growth in Sub-Saharan African (SSA) nations is summarized in this section. The chapter begins with a summary of the study's sample and data sources, then moves on to a description of the econometric model specification. Along with the estimation methods used, this chapter also discusses the rationale for the inclusion of the independent variables. The chapter ends with a summary of the most important ideas covered.

3.1 Sources of data of the study

The dataset, which comprises of 20 Sub-Saharan African countries and is drawn from the World Bank's World Bank Development Indicators (WBDI) (2022), aims to investigate whether agriculture will accelerate economic growth in Sub-Saharan Africa. Agriculture is measured as agriculture value added per worker for the years 2000 to 2020, and the results are presented in annual order. A GDP indicated the economic expansion.

3.2 Model specification

The model used to examine the impact of agriculture on economic growth was expressed as follows:

$$GDP_{it} = \beta 0 + \beta 1 Agric_{it} + \beta 2 manufac_{it} + \beta 3 GvtExpt_{it} + \beta 4 SV_{it} + \beta 5 NR_{it} + \mu_{it}$$

Where:

GDP_{it} = the gross domestic product of country i in the year period t that is the dependent variable

$\beta 1 Agric_{it}$ =agriculture value added per worker of county i in period t in US dollars as

$\beta 2 manufac_{it}$ = manufacturing denotes the manufacturing industry as a percentage of GDP

$\beta 3 GvtEpt_{it}$ = government expenditure

$\beta 4SV_{it}$ =services show the service industry

$\beta 5NR_{it}$= the dependent variable natural resources of country i in period t

μ_{it} =the error term

3.3 Justification for variables

3.3.1 Agriculture

Agriculture Contribute to Capital Formation. Underdeveloped and developing countries need a huge amount of capital for its economic development. In the initial stages of economic development, it is agriculture that constitutes a significant source of capital formation. In underdeveloped and developing nations, agriculture offers rural residents a significant number of employment opportunities. It is a crucial source of income. Marginal farmers and landless workers typically work in non-agricultural fields like handicrafts, furniture, textiles, leather, metal work, processing, and other service industries. These rural units only meet regional needs. In India, the agricultural sector employs roughly 70.6percent of the total labour force. It's time that the rural economy in a developing nation depends on agriculture and related professions to improve rural welfare. In particular, in rural areas, the rising agricultural surplus brought on by higher agricultural productivity and output tends to enhance social welfare. Rural populations' living standards improve, and they begin consuming a nourishing diet that includes eggs, milk, ghee, and fruits. They enjoy a comfortable lifestyle with all of today's conveniences.

3.3.2 Natural resources

If a country has a lot of natural resources and manages those resources well, it will be easier for that country to develop than a country with few or no natural resources. However, these resources' extraction and processing have a significant negative impact on ecosystems, the environment, and global warming. It may not be as advantageous in developing nations due to the absence of machinery and cutting-edge technology in that sector (the export of raw materials), which lowers the value added to the nation and reduces employment. thus a negligible impact on GDP growth.

3.3.3 Services

According to research, economies with high service industry dominance grow at a significantly faster rate than those with low service. As a general measure of a country's or region's progress toward the knowledge economy, it is well known that economies with a high service component also tend to be knowledge intensive. Nevertheless, despite the fact that their economies are dominated by service industries, SSA countries have low knowledge economy indices (KEI), as shown by the fact that only South African countries had a middle-range KEI of 5.19 in 2006, while the other 26 SSA countries had low KEIs. Education, financial incentives, innovation, institutional framework, and information and communication are all KEI indicators. services and growth of the economy.

3.3.4 Government expenditure

The Keynesian theory states that through an expansionary fiscal policy, an increase in government spending results in an increase in economic growth. A multiplier effect could be produced by the increased government spending. If government spending on the health sector, education, and other basic social services raises productivity levels and the standard of goods produced in the economy leads to the creation of jobs, then people will have more money to spend, which will cause aggregate demand to increase even more. This may encourage economic expansion. However, only in the short term can this be accomplished.

3.3.5 Manufacturing

The literature by Chenery (1955), Clark (1940), Kuznets (1966), and McCausland & Theodossou (2012) is well-documented for the manufacturing sector's dynamic role as a growth generator. Recent experience in Sub-Saharan Africa reveals that the manufacturing sector has only slightly risen or shrunk, despite the region's robust economic growth over the preceding two decades and despite all efforts to promote it. Sub-Saharan Africa has never seen an industrial or manufacturing boom, and the region is currently going through a deindustrialization phase. The statistics that are now available show that the sector's contribution to GDP is at considerable, chronically low, and stagnating levels. For example, data shows an overall significant drop from 16 percent in 1991 to about 10 percent in 2006, a rate consistently witnessed even in the subsequent years including 2018, but also a replication of the mid-1960s according to Yaw et al. (2016). Similar to this, the manufacturers' import portion of total

merchandise exports scarcely moved from 66 to 62 percent, while the manufacturers' export part of total merchandise exports declined from around 25 percent in 2006 to about 21 percent in 2018.

3.4 Estimation of techniques

The parameters of the panel regression model will be estimated using both fixed and random effects models for the research. The fixed effects model corrects for unobserved country-specific effects that are time-invariant and could skew the estimated coefficients. In order to estimate the coefficients more effectively, the random effects model makes the assumption that the country-specific effects are uncorrelated with the independent variables.

3.5 Hausman test

The Hausman test will be used to establish if FEM or REM is appropriate for this research. This test contrasts the predicted coefficients from the efficient but inconsistent fixed effects model with those from the potentially biased random effects model. The fixed effects model is preferred if the Hausman test's null hypothesis is rejected. The fixed effects model will be applied based on the findings of the Hausman test if the Chi-square p-value is less than 5percent, and the random effects model will be applied if the p-value is greater than 5percent.

3.6 Summary

The research design and methodology used to look into how agriculture affects economic growth in SSA countries have been thoroughly described in this chapter. The study's data sources, model definition, variable justification, and estimating methods are highlighted in this chapter. GDP is used as the dependent variable in a panel regression model, and the independent variables are agriculture, manufacturing, government spending, natural resources, and services. The appropriateness of the fixed effects or random effects model will be evaluated using the Hausman test. Overall, this chapter offers a strong foundation for the empirical analysis in the dissertation's later chapters.

CHAPTER IV

DATA PRESENTATION AND RESULTS INTERPRETATION

4.0 Introduction

This chapter presents the findings of the panel regression analysis using panel data from 20 Sub Saharan African countries from 2000 to 2020. The study examines the impact of agriculture on economic growth and the relationship between economic growth and other variables such as manufacturing, services, government spending, and natural resources.

4.1 Descriptive Statistics

Table 1: Descriptive statistics of independent variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Agriculture	420	16.966	9.813	1.739	38.114
Manufacturing	420	12.249	6.389	2.541	35.215
Services	420	45.714	7.701	22.212	77.02
GovernmentExpenditur	420	16.365	7.639	2.047	43.484
Natural Resources	420	10.863	9.879	.592	55.875

4.2Table 2: Descriptive statistics of dependent variable

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	420	4.194	4.25	-17.669	21.452

Tables 1 and 2 provides descriptive statistics for the independent and Dependent variables used in the analysis. The mean GDP for the 20 countries is 4.2, with a standard deviation of 4.3. The mean agriculture value added is 16.97, while manufacturing and services value added are 12.3 and 45.7, respectively. The mean government spending and natural resources as a percentage of GDP are 16.4 and 10.9, respectively.

4.2 Correlation Matrix

Table 3: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)
(1) Agriculture	1.000				
(2) Manufacturing	-0.157	1.000			
(3) Services	Tree-	0.140	1.000		
	0.298				
(4) GovernmentExpe~e	-0.474	0.032	0.407	1.000	
(5) Natural Resources	-0.121	-0.264	-0.584	-0.262	1.000

Table 3 presents the correlation matrix for the independent variables. The results indicate that there is no multicollinearity among the independent variables, as the correlation coefficients are all below 0.7. This suggests that the independent variables can be included in the regression model without any problems of multicollinearity.

4.3 Fixed Effects Model Vs Random Effects Model

The Random Effects Model (REM) assumes that the individual-specific effects in the model are mutually independent of the predictors. In contrast to the FEM, the REM assumes that changes between individuals are random and unrelated to the predictor variables in the model. On the other hand, the Fixed Effects Model (FEM) is a statistical approach that assumes that the detected quantities are non-random with respect to the predictor factors. Individuals have distinctive characteristics that are not the result of random fluctuations and do not change over time. The Hausman testing is employed to determine whether the Fixed effects or the Random effects is more appropriate for panel data survey.

Table 4: Fixed Effects and Random Effects

VARIABLES	(1) Fixed Effects	(2) Random Effects
Agriculture	0.0596**	0.0620**
	(0.0256)	(0.0257)
Manufacturing	-0.0773**	-0.0723**
	(0.0320)	(0.0322)
Services	-0.0861**	-0.0797**
	(0.0350)	(0.0350)
Government Expenditure	0.00636	0.00823
	(0.0308)	(0.0310)
Natural Resources	-0.0254	-0.0144
	(0.0285)	(0.0284)
Constant	8.239***	7.692***
	(2.254)	(2.273)
Observations	420	420
R-squared	0.080	
Number of Year	21	21

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4 Hausman Test

The Hausman test is conducted to determine whether to use fixed effects or random effects in the panel regression model. The results of the Hausman test in Appendix 3 show a p-value of less than 0.05, indicating that we should use the fixed effects model. Therefore, we use the fixed effects model in our analysis.

4.5 Interpretation of results

Agriculture

The fixed-effects model suggests that agriculture has a positive and significant impact on economic growth in Sub Saharan Africa ($\beta 1 = 0.0596$, $p < 0.05$). This finding is in line with previous studies that have shown that agriculture can play a significant role in promoting economic growth in developing countries Barro (2003) and Thirtle et al., (2001). For instance, agriculture provides food and raw materials for the manufacturing sector and generates income and employment opportunities for the rural population, which in turn stimulates demand for goods and services in the local economy.

Manufacturing and Services

The coefficients for manufacturing ($\beta 2 = -0.0773$, $p < 0.05$) and services ($\beta 3 = -0.0861$, $p < 0.05$) are negative and statistically significant, implying that these sectors have a negative impact on economic growth. This result suggests that Sub Saharan African countries should focus on increasing agricultural productivity rather than shifting towards industrialization and services, at least in the short run. However, it is important to note that this finding does not imply that manufacturing and services are not important for economic growth in the long run, as they may generate technological progress, improve human capital, and enhance export competitiveness (Rodrick, 2018).

Government spending

The coefficient for government spending ($\beta 4 = 0.00636$, $p > 0.1$) is positive but not statistically significant, indicating that government spending does not have a significant impact on economic growth. This result is consistent with the view that public spending may crowd out private investment and reduce economic efficiency (Barro, 1990). However, this does not imply that government spending is irrelevant for economic development, as it may play a crucial role in providing public goods and services, improving social welfare, and reducing income inequality (Stiglitz, 2019).

Natural resources

The coefficient for natural resources ($\beta 5 = -0.0254$, $p > 0.1$) is negative but not statistically significant, suggesting that natural resources do not have a significant impact on economic growth. This finding is in contrast to the conventional wisdom that natural resources, such as oil, minerals, and timber, can provide a source of income and foreign exchange for developing countries Sachs & Warner (2001). However, it is possible that natural resources may have a negative impact on economic growth if they lead to rent-seeking, corruption, environmental degradation, and political instability Acemoglu et al. (2002).

4.6 Discussion of Results

The results of the panel regression analysis show that agriculture has a positive impact on economic growth in Sub Saharan Africa, while manufacturing and services have a negative impact. These results are consistent with the literature on the role of agriculture in economic development.

Agriculture is an important sector in Sub Saharan Africa, as it provides employment for

the majority of the population and contributes significantly to the region's GDP. The negative impact of manufacturing and services on economic growth may be due to the fact that these sectors are still underdeveloped in the region, and there are not enough skilled workers to support their growth.

The results also show that government spending and natural resources do not have a significant impact on economic growth in Sub Saharan Africa. This may be due to various factors such as corruption, mismanagement of resources, and inadequate infrastructure. In addition, the lack of a strong institutional framework may be limiting the effectiveness of government spending in promoting economic growth.

4.7 Summary

This chapter presented the results of the panel regression analysis and shows that agriculture has a positive impact on economic growth, while manufacturing and services have a negative impact. The findings have important policy implications for Sub Saharan African countries, and suggest that policymakers should prioritize investments in agriculture to promote economic development. The results of the Hausman test suggested that we should use the fixed effects model and the correlation matrix show that the there is no multi-collinearity in the variables.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter will give a summary, conclusion and recommendations of the overall dissertation for all the research findings that has been done in this paper.

5.1 Summary

This research was conducted under the topic, an analysis of the impact of agriculture on economic growth in sub-Saharan Africa. 20 countries were selected for the study and the research was conducted from the period of 2000 to 2020. Five variables were used in this study. Agriculture, manufacturing, services, natural resources, and government spending are all included in the study. The findings indicate that while manufacturing, services, government spending, and natural resources are negatively significant to economic growth, agriculture is positively significant. Results indicate that an increase in agricultural value added and a decline in input costs and prices can both contribute to a country's economic growth. In order to increase GDP growth, productivity in agriculture has to be increased in sub-Saharan Africa, which is a region with enormous potential for the growth of the agricultural sector, governments of sub-Saharan countries should increase agriculture value added per worker. Agriculture is a unique economic sector because it depends on nature for its production. Fertile soils and access to water are basic requirements for increased production. Both of these pose difficulties throughout much of SSA. African soils are inherently low fertile since they are very old and have not been rejuvenated by volcanic material. Furthermore, poor soil management and lack of inputs at affordable prices have led to soil erosion and declining productivity. The way smallholder’s farmers use their lands often result in further deterioration of soil nutrient balances. In much of SSA, the overriding constraint to crop cultivation is probably lack of soil moisture. Only a few estimated percent of cultivated soils are assumed to be free from moisture stress. This situation is expected to become more tense and unpredictable due to the emerging effects from climate change. With only three to six percent of arable land equipped with irrigation in SSA.

It has been discussed that various actions have to be done in order to curb some major problems affecting the agricultural sector in sub-Saharan Africa so that productivity is enhanced.

Climatic variability - In sub-Saharan Africa, the climate variability, which includes droughts, floods, and other extreme weather events, can have a significant impact on agricultural productivity. To manage the risks associated with climate variability, farmers need access to climate information and adaptive technologies.

Policy environment - The productivity of agriculture also depends on a favourable political environment. Policies that encourage agricultural growth, such as those that provide subsidies for inputs, can help farmers increase productivity; as a result, these policies are extremely important to the area. On the other hand, productivity can be hampered by policies that discourage investment in agriculture.

Access to finance and inputs - Is one of the significant obstacles to agricultural productivity that the SSA study has discussed. Farmers frequently struggle to get credit to invest in their farms or buy inputs. Accordingly, it has been emphasized that access to inputs is necessary for farmers in order to increase the output of goods. To increase crop yields, the inputs include high-quality seeds, fertilizer, pesticides, and other ingredients. Sub-Saharan African smallholder farmers, however, frequently lack access to these inputs because of limited supply, poor infrastructure, and financial constraints.

Agricultural extension services - Have been found to be yet another essential element for the agricultural sector to succeed. Farmers can improve their farming practices, such as crop rotation, intercropping, and soil conversation, by using agricultural extension services to give them the knowledge and skills they need. The accessibility and calibre of these services, however, differ greatly across sub-Saharan Africa. And a lot of farmers only have limited access to them for a variety of reasons, such as a lack of sufficient resources to use in providing the services.

Research and development - Research and development in the agricultural sector Research and development are what drive productivity in agriculture, according to the study, so investment is crucial for increasing productivity. New technologies and practises can help farmers to increase yields, reduce costs and improve resilience to climatic change.

Infrastructure - When it comes to boosting agricultural productivity and facilitating access to markets, infrastructure like roads, irrigation systems, and storage facilities is absolutely essential. Inadequate infrastructure, on the other hand, makes it difficult for farmers to access inputs and transport their goods to markets in many areas of sub-Saharan Africa. The thesis defended the significance of other variables by pointing out that agriculture cannot sustainably produce enough for the entire economy.

Natural resources - Abundance of natural resources in a country means that development will be achieved easily to that country than those with no natural resources or with a few resources if they are being managed efficiently. However, the extraction and processing of these resources causes great impact on the environment ecosystems and global warming. it can also not be so beneficial in developing countries due to lack of machinery and (exportation of raw materials) and this reduces the value added to the country as well as employment. Hence a small contribution to GDP growth. In addition, it is possible that natural resources may have a negative impact on economic growth if they lead to rent-seeking, corruption, environmental degradation, and political instability. This is regarded as being the same situation as other thesis-related variables like manufacturing, services, and government spending. Manufacturing and services may have a detrimental effect on economic growth because they are still underdeveloped in the area and lack the skilled labour force needed to support their expansion. The findings also demonstrate that Sub-Saharan Africa's economic growth is not significantly influenced by government spending or natural resources. This might be caused by a number of things, including resource mismanagement, corruption, and poor infrastructure. Additionally, the effectiveness of government spending on fostering economic growth may be constrained by the absence of a solid institutional foundation. The provision of excess labour, the provision of food, the provision of intermediate inputs for agro processing industries, the opening of markets to industries, the accumulation of capital to invest in industry, and the increase in foreign exchange are all considered important drivers of economic growth. Agriculture has a significant positive impact on economic growth, according to the study. All of the regressions demonstrate the beneficial effects of agriculture on the economies of Sub-Saharan African nations. This study would guide government policies to take appropriate actions to manage the productivity of agriculture. In Sub-Saharan African nations, agriculture has a significant impact on economic growth, according to this study.

However, even though I can predict that a 1percent increase in agriculture will increase GDP by 0.0596%, the researcher will not be able to determine the specifics of why it is significant due to a lack of data and time, which may necessitate further research. Revolutionary changes are required in the SSA's agriculture sector because increased agricultural productivity will boost industrial sector productivity, increase employment, raise living standards, and provide funding for other economic sectors.

5.2 Conclusions

The study's findings imply that agriculture contributes to economic expansion. Given that it supplies food, employment opportunities, raw materials for the industrial sectors, and a sizable portion of national production, the agricultural sector is a useful tool for boosting economic growth in Sub-Saharan African nations. The findings in chapter four demonstrated the statically significant contribution of agriculture to economic growth. A country's economic growth can be accelerated by an uptick in the value added to agriculture per worker. Agriculture has a considerable favourable impact on economic growth, according to the study. All of the regressions demonstrate the beneficial effects of agriculture on the economies of Sub-Saharan African nations. The fixed-effects model suggests that agriculture has a positive and significant impact on economic growth in Sub Saharan Africa ($\beta 1 = 0.0596$, $p < 0.05$). This finding is in line with previous studies that have shown that agriculture can play a significant role in promoting economic growth in developing countries. For instance, agriculture provides food and raw materials for the manufacturing sector and generates income and employment opportunities for the rural population, which in turn stimulates demand for goods and services in the local economy. This study will help government policies determine the best course of action to manage agricultural productivity.

5.3 Recommendations

Given the aforementioned conclusions, it is advised that various measures be considered in order to maximize agricultural productivity. Some of the actions that need to be taken are listed below. First and foremost, farmers should receive agricultural extension services so that they will be given the information and abilities necessary to advance farming practices like crop rotation, intercropping, and soil conversation.

However, due to some variations in the availability of solid government institutions to support these extensions, the accessibility and quality of these services will differ significantly across sub-Saharan Africa. Agriculture productivity depends on a favourable political environment. In order to help farmers increase productivity, policies that support agricultural development must be introduced and followed, such as input subsidies. Contrarily, policies that discourage agricultural investment can lower productivity; as a result, they should be minimized or completely avoided. Since most of sub-Saharan Africa is still behind in research and development, it is advised that SSA research and development be improved. For farmers to increase yields, cut costs, and increase resilience to climate change, new technologies and practices are crucial for agricultural research and development. Increasing government spending on physical infrastructure, like roads, can have a positive impact, especially on post-harvest and production processes. In addition to these actions, policymakers must engage the private sector by fostering a favourable environment and encouraging private investments in infrastructure for storage, processing, and marketing. Promoting inclusive business models is important. By giving farmers knowledge and access to input and output markets, governments and their technical and financial partners must encourage the private sector to invest in models that offer them favourable prospects. The viability of these mechanisms, which place farmers at the centre of the system as both small- and large-scale producers and give the private sector the chance of a respectable profit, is demonstrated by value chain development projects. These beneficial methods must be expanded. Additionally, there is a critical need to boost the performance of other non-agricultural sectors so that countries won't have to rely solely on one. This is because the agricultural sector may be subject to risks and uncertainties that could lead to hunger and poverty, such as floods, cyclones, crop disease outbreaks, and climatic changes. Importing these unproduced goods from other nations in order to close trade gaps Taking advantage of imported inflation, foreign currency, and trade deficits. Research and development must be enhanced in nations with abundant mineral resources in order to prevent the export of raw materials that would otherwise exploit labour and capital. Finally, more efforts should be made to ensure that the other economic sectors that have the potential to support growth cooperate with agriculture to support the development of the SSA.

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