THE SERVICE SECTOR-LED GROWTH IN KENYA

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DECLARATION

This economic research paper is my original work and has not been presented for a degree award in any other university.

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30/11/2022

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DEDICATION

To my life partner, friend Terry Ndenah Mung'athia and my awesome younger sister Brendah Wanjiku Mwarange.

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ABSTRACT

In recent years the service sector has emerged as increasingly playing a huge role in both the developed and developing as evidenced by the rising share of this sector in foreign direct investment (FDI), employment, trade and GDP of these countries.This increase has been gradual through time and it corresponds to the decline in agriculture and manufacturing output. The service sector has been viewed as a potential sector for economic transformation and the modern characteristic of present day economies is the expansion of an energetic, more lively and competitive services sector expansion. The study was conducted to point out and empirically estimate the determinants of service sector growth in Kenya and empirically investigate the causal relationship between services and GDPPC in Kenya by analyzing time series data for the period 1980-2020 drawn from the world development indicators, the UNCTAD statistics as well as the Kenya National Bureau of Statistics, and the economic surveys using the ARDL Cointegration test and granger causality wald tests. The results indicated no presence of long run relationship while the short run dynamics results indicated positive short run relationship between service sector share and innovation, expenditure on education, GDPPC and FDI. In addition there was existence of negative short run relationship between trade openness and productivity gap between services and manufacturing however there was no presence of relationship between services and female labor participation in Kenya. The granger causality test results indicated a two-way directional causality between service sector and GDPPC.

LIST OF ABBREVIATION AND ACRONYMNS

2SLS	Two Stage Least Squares
ADB	Asian Development Bank
ARDL	Autoregressive-Distributed Lag
CBK	Central Bank of Kenya
COVID-19	Coronavirus Disease
CUSUM	Cumulative Sum Control Chart
CUSUMQ	Cumulative Sum of Squares
EAC	East African Community
ECM	Error Correction Model
ERS	Economic Recovery Strategy
FDI	Foreign Direct Investment
GATS	General Agreement on Trade Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GDPPC	Gross Domestic Product Per Capita
ICT	Information & Communications Technology
IV	Instrumental Variable
JKIA	Jomo Kenyatta International Airport
KNBS	Kenya National Bureau of Statistics
LAPPSET	Lamu Port South Sudan – Ethiopian Transport
NIPA	National Income and Product Accounts

OEC	Observatory of Economic Complexity
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
SACCO	Savings and Credit Co-operative
SURE	Seemingly Unrelated Regression
UK	United Kingdom
UNACTD	United Nations Conference on Trade and Development
U.S	United States
VAR	Vector Autoregressive
VECM	Vector Error Correction Model
WTO	World Trade Organization
WTTC	World Travel and Tourism Council

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CHAPTER ONE: INTRODUCTION

1.1 Background of the study.

In the recent years the service sector has emerged as a major player in the economies of many countries as evidenced by the rising share of this sector in foreign direct investment (FDI), employment, trade, as well as GDP of these countries. This increase in service output has been gradual through time and it corresponds to the reduction in manufacturing output in developed economies and reduction in agriculture output in developing economies resulting in moving of productive resources from the industrial sector to service sector in developed economies as well as moving of productive resources from agricultural sector to service sector in developing countries. (UNCTAD, 2017)

The service sector also promotes productivity and economic growth and development by providing crucial intermediate inputs such as business & professional services,commercial education and training, information technology (IT) &computer services, adding value as well as innovation related content to products, the outsource of various service activities from other sectors and coordination of various production processes. Employment rate in the services sector most especially the female workers has grown in the sector therefore supporting greater inclusiveness. The increase in the portion of FDI directed to services has been noticeable in the recent years with the sectoral composition of FDI shifting towards services evident from 2015 percentage sectoral distribution of announced greenfield FDI projects showing the share of services being 53%, manufacturing 42% and agriculture 5%. FDI in services has grown rapidly as compared to investment in both agriculture and manufacturing sectors until recently owing to the CORONAVIRUS pandemic where the FDI flows have reduced as a result of the lockdowns and the prospects of a recession warranting multinational corporations to reassess new ventures. According to UNCATD'S World Investment Report 2021, the agriculture sector recorded a 47% decline followed by manufacturing with a 41% decline and lastly services with a 25% decline of greenfield FDI projects between 2019 and 2020. In trade, growth in services export developing economies has been rapid as opposed to developed economies with global service export rising from 23% to 29% between 2005-2016 as well as the services export growing faster and building resilience than goods exports. In addition, the emergence of new modern services that include developments in telecommunication and ICT services which are increasingly tradable has led to the extension of international value chains. (UNCTAD, 2017)

Services have been viewed as a potential major sector for economic upturn or transformation and the hallmark characteristic of present-day economies is the expansion of an energetic, more lively and competitive services sector. In many economies, service sector is majorly dominated by the old established service industries which include, transport, real estate, personal services, wholesale and retail trade and public administration which have low labor productivity (output per worker) and with them taking the largest chunk of the sector output. On the other hand, modern services industries which include professional services, Information and Communication Technology and finance and insurance which have a higher labor productivity, are more tradable thus providing new export opportunities and fortify the links between services and inclusive growth. This is because the modern sevices generate more quality employment opportunities with more wages and they occupy less of the services output. Increasing the service sector dynamism which entails shifting from the traditional services towards the high-end modern services resulting in a vibrant service sector with broad economic benefits including job creation as well as synergy between service sector and other sectors improving the overall productivity, becomes the greatest challenge. (ADB, 2012)

1.1.1 The services sector in Kenya.

The emeregence of services as a major player in the economic growth of most economies in recent years is evidenced by rising services share in GDP for developed countries from 61 to 70% and comparatively in the developing countries from 42% to 55% during the period 1980-2015(UNCTAD, 2017). In Kenya the service sector is a crucial player due to its role in the direct and indirect effects of various service sub sectors. The direct effects are on jobs, exports as well as GDP and the indirect effects are as a results of the various linkages between the various service sub sectors.

In 2021, Kenya's economy grew by 7.5% as compared to a 0.3 % contraction in 2020 due to the COVID-19. All economic activities posted positive growth apart from the agriculture, forestry and fishing which had a 0.2% contraction owing to the unfavorable weather conditions that is the dry weather condition as well as the locust invasion leading to a reduction in crop production. The economic growth in 2021 was majorly service-sector driven growth as it was supported by key sectors including finance & insurance activities (12.5%), wholesale & retail trade (7.9%), transportation and storage (7.2%), real estate (6.7%) and manufacturing (6.9%).(*KNBS - Economic Survey ,2022*).

In 2021, the service sector contribution to GDP, given by value added percentage of GDP, was 54.4% , the agriculture sector contribution to GDP was 22.4% and manufacturing sector contribution being 7.2 %(World Development Indicators)

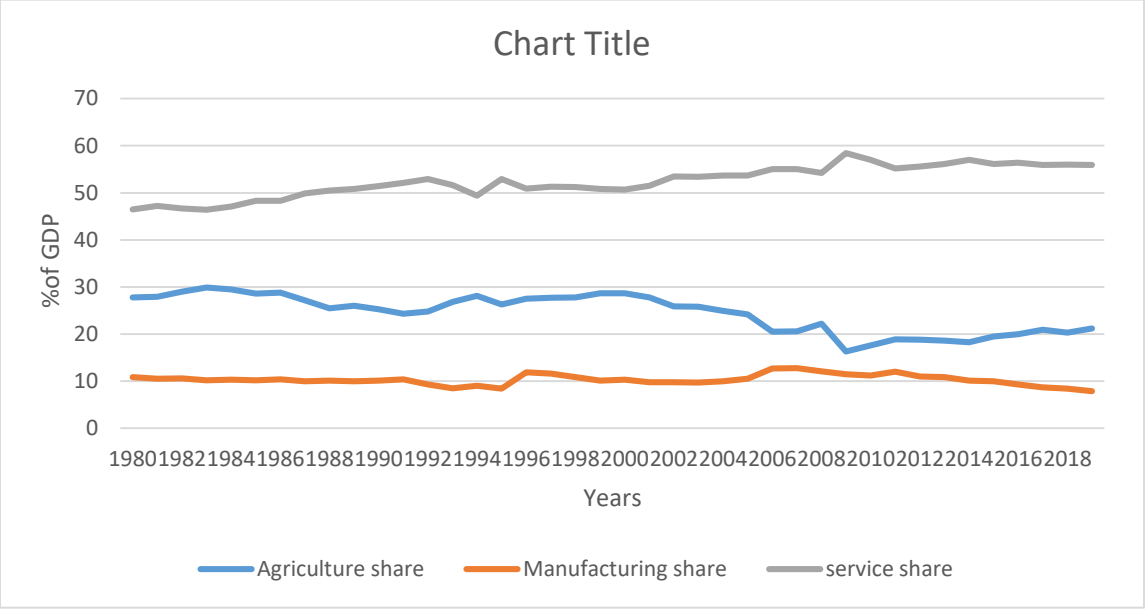
Table 1.1.1: Average Sector Shares of GDP in Kenya: 1979-2019

	1980-1989	**1990-1999**	**2000-2009**	**2010-2019**	**Average**
GDP growth rate	4.22	2.24	3.56	5.01	3.8
Agriculture share (% of GDP)	28.02	26.73	23.69	19.41	24.46
Manufacturing share (% of GDP)	10.32	10.2	10.92	9.95	10.35
Service share (% of GDP)	48.17	51.45	53.90	56.12	52.41

Source: World Development Indicators, KNBS Economic Surveys.

The table above shows that the service sector output share of GDP is highest averaging 52.41% per annum compared to agriculture and manufacturing with 24.46% and 10.35% respectively. The share of service sector is seen to be increasing with increase in GDP that is as the Kenyan economy grows i.e. (51% in the 1990's to 53% in the early 2000's to 56% in post 2010). From the table above an economic transformation is visible where there is a change from agriculture sector to manufacturing dominance from the 1980's to the 2000's with the share of agriculture reducing (28.02 to 26.73 to 23.69) as manufacturing share increases from (10.2 to 10.92) and from the 2000's to around 2010 a change from the manufacturing dominace to the service sector with share of manufacturing reducing (10.92 to 9.95) as share of services increasing from (53.90 to 56.12). This economic transformation can be as a result of the stages of development as described by early researchers Fisher (1935) and Clark (1940) who were of the view that the economy underwent shifts in the sector that is first from agriculture sector to manufacturing sector and then later from the manufacturing sector to services sector all this subject to increase in income since increase in income lead to diversification from goods to services in the composition of final demand for individuals.

Figure 1.1.1 Sectorial contribution to Kenya's GDP (1980-2019)



Source: World Development Indicators & KNBS Economic Surveys.

Figure 1.1.1 shows the three major sectors contribution to Kenya's GDP and reveals the vast contribution of services to Kenya's GDP. From the figure above it is also evident that the manufacturing and agriculture sector are a declining share of Kenya's GDP while in contrast the service share of GDP is increasing.

In Kenya, services sector is key in generating employment opportunities. In 2019 the share of employment of the major sectors as a percentage of the total job opportunities in Kenya is given by table 1.1.2

Table 1.1.2: Share of sector employment as a % of total jobs in Kenya year 2019

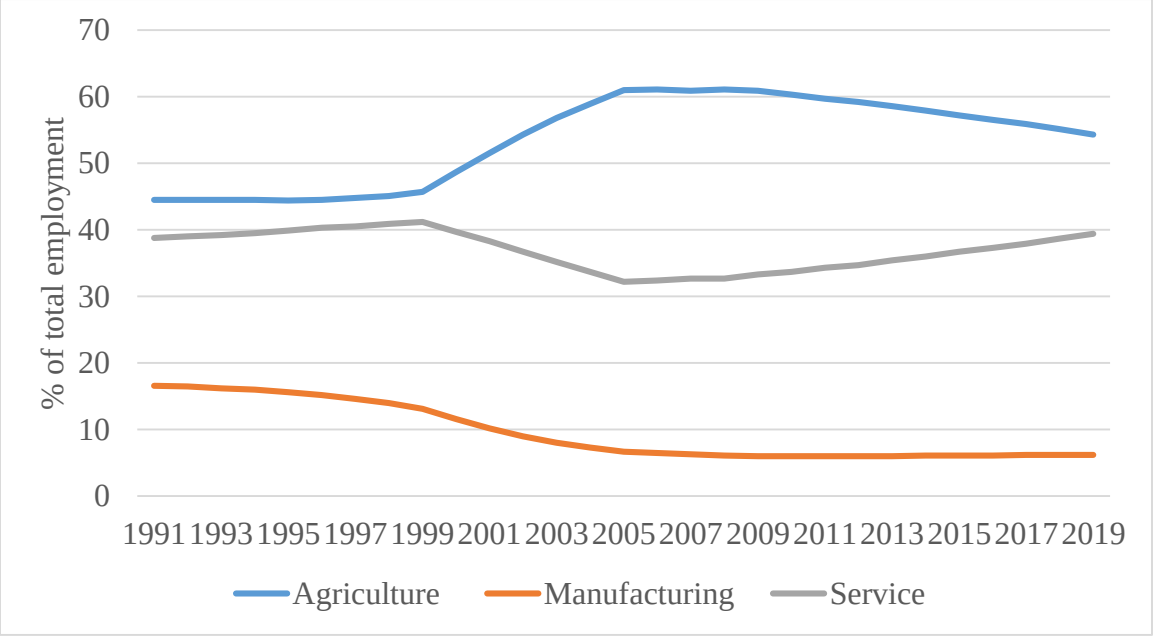
Sector	**Percentage**
Agriculture	54.3
Services	39.4
Manufacturing	6.3
TOTAL	**100**

Source : World Development Indicators

The table 1.1.2 shows that agriculture sector is still the largest employer with 54.3% followed by the service sector with 39.4 % and lastly the manufacturing sector with 6.3%.

In 2021, total jobs outside the agriculture sector were 18.3 million. The modern sector created 172300 jobs representing a 6% growth in total employment in the sector mainly due to resumption of international travel after COVID-19 restrictions ease as well as broad based recovery in manufacturing. The portion of private sector employment was 68.3% and it recorded a 6.8% growth in 2021 with the top industries providing wage employment being agriculture sector and wholesale & retail trade. Another industry that recorded a significant growth of 23.9% was Accomodation & food services followed by administrative & support services, education and Art & entertainment at 20.8%, 16.3% and 15.9% respectively. The public sector growth was 4.3% attributed to recruitment in the civil service for essential services. The informal sector recorded a 5.5% growth from 14.5 million employment opportunities in 2020 to 15.3 million in 2021 creating 753,800 jobs accounting for 81.4% of total employment opportunities created outside agricultural sector. (*KNBS - Economic Survey ,2022*)

Figure 1.1.2: Sectorial employment creation as a % of total employment



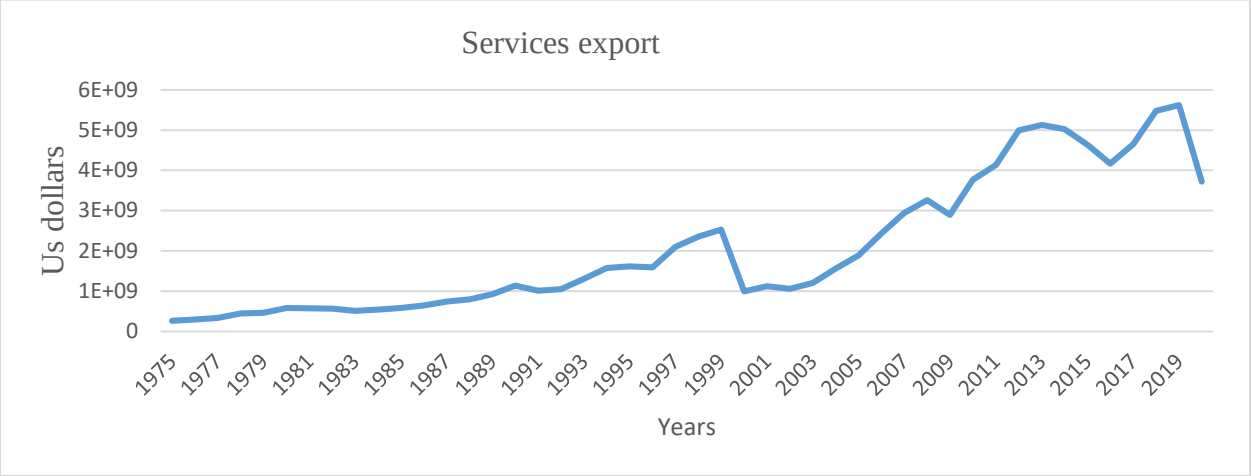
Source : World Development Indicators

The figure 1.1.2 reveals that from around the 2000's to date, the services sector share of employment is increasing while that of manufacturing and more particularly agriculture is declining entail a shift to the services sector from the previous traditional agriculture and manufacturing sectors in Kenya. Kenya experienced poor economic performance from the

1980's to around mid-2000's with this performance being majorly attributed to unsuitable agriculture, land & industrial policies which were further deepened by poor international trade terms and government flaws as well as private sector infringement by the government and import substitution policies rendering industrial sector non-competitive and decline in agricultural production all contributing to the shrinking of employment share in the two sectors.

Kenya being a WTO member since 1995 and a member of GATT since 1964 it became signatory to GATS a multilateral general agreement that contains general rules that apply to all trade in services and specific commitments that apply to sectors and sub sectors in which Kenya made commitment to five subsectors namely communications, financial & insurance services, tourism, individual travel services and transport services (Wambua *et al*,2020). During the period 1970-1997 services exports accounted for 43-51% of total current account foreign exchanges inflows and 14-37% of total current account foreign exchange outflows (Ikiara *et al*,1999). Kenya is among the huge producer and exporter of services in Sub-Saharan Africa as well as the main exporter in EAC. In 2012 Kenya's export services were valued at Ksh329.52 billion up by 154% from 2005 with transportation services ($2.1 billion) and travel ($935 billion) leading, accounting for about 75% of total exports followed by ICT services exports at $468million and financial services at $217million (Serletis, 2014). In 2019, Kenya exported $5.6 billion worth of services as shown in Figure 1.3 where the top services exported by Kenya were transport & Storage at $2.2 billion, government activities at $972 million, individual travels at $901 million, computer & information services were $629 million and financial activities were $478 million (OEC, 2020)

Figure 1.1.3: Services Export in Kenya from 1975-2020 measured in US Dollars



Source: World Development Indicators

Tourism sector is one of the largest service sub-sector in Kenya necessitating the government to view it as a priority sector in Vision 2030, it's goal to position Kenya among top 10 destination. According to the Kenya Vision 2030 flagship project progress reports, Kenya tourism sector has greatly excelled with its earnings increasing from Kshs.65 billion in 2007 to Kshs.157.4 billion in 2018 depicting a 139% rise with tourist entries increasing from 1.8 million in to 2.02 million during the same period and this increasing trend continued in 2019 with tourism earnings rising to Kshs.163.6 billion and 2.035 million tourist arrivals. The outbreak of the COVID-19 in the early 2020 led to containment and isolation measures which had a negative impact in the tourism industry where its earnings declined from Kshs.163.6 billion in 2019 to Kshs.91.7 billion in 2020 representing a 43.9% reduction and a 71.5% decline in international visitors from 2.035 million to 579,600 in 2019 and 2020 respectively. However, in 2021 the tourism sector reported a recovery due to the ease of travel restriction and rising rate of COVID-19 vaccination with international travels expanding by 50.3% to 817,300 in 2021 from 2020. (*KNBS - Economic Survey ,2020,2021&2022*)

According to the WTTC Kenya data travel and tourism was 7.7% of Kenya's GDP in 2019 which fell to 3.9% in 2020 due to the COVID-19 pandemic and recovered to 4.9% in 2021. The tourism sector has direct effects on the economy through sales in hotels and tourist attractions thus creating employment largely in the informal sector and business revenues.Tourism sector is a major foreign exchange earners. It has indirect effects such as backward linkages with supplier

industries for goods and services, positive linkages with the flowers and exports through the air transport as well as induced investment in transport and other infrastructure. (Khanna et al., 2016)

The service sector in Kenya is also comprised of the following subsectors; accommodation, hotel & food services, information and communication that includes other ICT activities, finance & insurance activities, professional and technical activities, administrative services, public administration & defence, real estate, arts entertainment & recreation, education, human health, transportation & storage and wholesale retail trade & repairs. (KNBS - Economic Survey, 2020.)

Table 1.1.3 indicates the subsectors contribution to GDP as a percentage. It reveals that transport and storage is the largest contributor to GDP followed closely by retail & wholesale trade, real estate as well as finance & insurance respectively while the lowest contributors are accommodation services followed by professional and support services.

Table 1.1.3: % contribution to GDP of services subsectors

Subsector	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Wholesale and retail trade	8.3	8.4	8.2	8.2	8.1	7.9
Transport and storage	10.2	10.2	11.3	11.7	10.7	11.4
Hotel and restaurant, food services	0.9	1.0	1.1	1.2	0.7	1.0
ICT	2.7	2.6	2.6	2.5	2.6	2.4
Finance and insurance	7.8	7.5	6.7	6.5	6.8	7.1
Real estate	9.3	9.3	9.4	9.2	9.3	8.9
Professional, support together with scientific, technical and administrative services	2.9	2.8	2.8	2.8	2.4	2.3
Public administration	5.4	5.2	5.3	5.3	5.5	5.2
Education	4.5	4.3	4.3	4.2	3.9	4.3
Health	2.1	2.1	2.0	1.9	2.0	1.9
Total %	54.1	53.4	53.7	53.5	52.0	52.4

Source: KNBS Economic Survey 2021

The service sector apart from the direct effect contributions on employment, GDP and exports the sector exhibits also indirect effects. This indirect effects are dependent and can be classified in terms of the various subsectors relationship among themselves and also between other sectors. The finance and insurance subsector has backward linkages to the information communication and technology sector and in addition it brings about the Dutch disease effect through exports and increased FDI. The information and communication subsector has forward linkages across all sectors as well as productivity effects through m-pesa in Kenya. The health and education sector are a key part in developing human capital formation. The real estate subsector is closely positively linked to construction industry while wholesale & retail trade impact is on the agriculture and manufacturing value chains. (Papadavid et al., 2016)

1.1.2 Evolution of the services sector (1980 to 2020)

After Kenya gained independence in 1963 the government undertook profound policy changes in the political and economic spheres in order to transform the country into a mixed capitalistic economy with more of private sector driven economy and minimal government activity particularly regulatory and supportive role in the economy. During the early periods agriculture was seen as the backbone of the economy and most government policy and performance changes were geared to agriculture reform and development. In the 1980's the Kenyan government began pursuing the structural adjustment policies through the Sessional Paper No.4 of 1980 in which government undertook structural reforms in the areas of industrial strategy and agricultural development.

From then on the economy's focus shifted from just agricultural sector to now both the agriculture and industrial sector pinpointing the new focus on industrial sector in supporting agriculture as the backbone of the economy. Major industrial policies were undertaken by the government through various approaches such as the Sessional Paper 1 of 1986 as well as the National Development Plan of 1989-1993 and so on. The structural changes in the 1980's and the 1990's had little success in stimulating Kenya's growth and development and therefore with the new regime change in the 2000's came with new economic policies changes in which the services sector industry underwent major policy changes under the ERS policy. The Kenya Vision 2030 recognizes the importance of the service sector as evidenced by its foundation/enablers which include infrastructure, ICT, invention & innovation, human capital

growth i.e. labor and employment among others (Kenya Vision 2030 Progress Report ,2008-2017).

Tourism sector is one of the biggest contributors to Kenya's GDP since independence. According to the Sessional Paper 8 of 1969, the Kenya National Tourism Policy was outlined establishing growth targets and strategies on the role of government and its intention to promote domestic tourist as well as encouraging participation by the private sector all conducted through the Kenya Tourist Development Corporation(Zeleza, 1991). A Tourism development plan was undertaken aimed at relaunching Kenya as a global tourism destination, providing incentives, diversifying and improving tourism products as well as creation of a tourism information. Vision 2030, through various policies such as marketing tourism through Magical Kenya, comprehensive tourism legislation, financing tourism by setting up tourism fund among other tourism sector plans to help in achieving the 10% growth goal of the economic pillar.(Republic_Of_Kenya_Ministry_Of_Tourism_Se_Paper,2010.)

The information and communication technology sector was predominantly neglected in the early periods. It was plagued by a number of challenges such as low usage and penetration due to inadequate awareness, costly tools & equipment, absence or limited power supply and limited telephone services particularly in the rural areas. The government undertook various strategies under the ERS strategy to improve the sector by establishing a council to integrate ICT into governance actvities, sufficient investment in ICT learning and tutoring, develop masterplan for e-commerce use and e-government. This laid foundation for the 1st national ICT policy of 2006 to ensure there is attainable, well structured, dependable and cost effective ICT service. Developments emerged such as emergence of mobile money transfer M-pesa and airtel money as well as migration to digital contrabands resulting in an update of the policy to the Kenya National Policy 2016 to incorporate recent development such as local innovation in both software and hardware as well as the Kenya's new economic and social blueprint, Vision 2030(Ndung'u et al., 2019).

The infrastructure sector was deemed key to economic growth of Kenya and from the onset the government after independence undertook various policies to develop the sector. The Sessional Paper No.10 1965 put infrastructure under public sector provision and provided private participation in certain areas. The main aim was to help bolster agricultural development. This

was followed by the period of decentralization of road delivery through rural access road programs and policies under the 3rd ,4th,5th ,6th National Development Plans and the Sessional Paper No.1. this was followed by the Roads 2000 strategy which ushered in maintenance and rehabilitation as well as developing new capacity. The rail transport was under the Kenya Railways established in 1977 which endured major difficulties until the government initiated the privatization of Kenya Railways. In 1991 the Kenya Airport Authority was established to come up with ease and smooth infrastructure for aviation services between Kenya and the international community. In 2002 the Kenya Civil Aviation Authority was established to regulate the aviation industry in Kenya. The government undertook reforms in the sector such as liberalization and privatization of the National Carrier but the measures weren't adequate leading to more reforms such as modernizing air traffic management, upgrading of tourist airports and privatization of their services such as Kisumu, Malindi among others.(ERS Strategy, 2003).

The financial sector is one of the most important sector in an economy due to its relation to credit services as well as being a consequential dimension of social and economic inclusion(Heyer & King, 2015). The financial sector in Kenya has undergone various policy changes since independence that have put Kenya first among emerging developing economies with regard to access to financial services. In the 1960's at independence, Kenya's financial sector was controlled by overseas owned banks that concentrated on financial areas and commerce mostly concerning the white settlers. The government set up 2 commercial banks and several nonbank financial institutions as a result in the 1960's and 1970's whose main focus was to provide finance to certain neglected markets that is agriculture and small medium businesses. In the 1970's the non-bank financial institution underwent rapid growth and in the 1980's this growth went further to domestic banks and other financial institutions. In the mid1980's there was a financial crisis with many financial institution failing prompting government intervention with various reforms aimed at liberalizing financial markets and strengthening the financial systems which included imposing direct controls over interest rates, emendation of banking laws and the deposit protection fund was established. In the 1990's the failing financial institutions were absorbed into government owned banks, banking laws emended and Central Bank of Kenya supervision role strengthened to deal with the banking crisis of 1993(Brownbridge, 1996). In the 2000 more regulations were issued on banks composition of capital as well as new regulatory capital ratios. Legislative provisons were made in 2008, on CBK's recommendation, to permit

establishment of credit registries and in 2011 the CBK introduced directives that allowed innovation in the sector leading to agent banking.(Heyer & King, 2015).

On infrastructure Vision, 2030 envision Kenya as a country solidly interjoined via road networks , airports, railways, ports and waterways & telecommunication this is already evident by the implementation and investment of various projects such as the standard gauge railway, the LAPPSET corridor project, the Nairobi Expressway among other highways as well as rehabilitation and modernization of the JKIA, Kisumu, Eldoret, Mombasa, Isiolo airports among other infrastructural projects. In the public sector service various reforms have been undertaken to bring about attitudinal change in transparency, accountability of the public service, result-based management and performance contracting.

In the tourism sector vision 2030 has set out to establish resort cities, creating high value niche products among other projects in an aim to make Kenya a top world tourist destination. In the financial sector to becoming a regional financial hub Kenya intends to instituting legal and institutional reforms in the banking sector, introducing credit referencing, streamlining the informal finance and SACCOs as well as micro-financial institution as well as raising institutional capacity through pension funds and other international sources of capital in an effort to deepening financial services. In trade, where retail & wholesale are the predominantly in the informal section , the country will be transformed into an efficient innovative sector through training and credit, encouraging retail trade investment and advancing outreach programs . To improve the business process outsourcing sector is key to deal with the unemployment problem in Kenya for youths and young professionals and with is to be achieved by attracting leading information technology, multinational companies and global business process outsourcing companies as well as strengthening some local players to becoming local champions(*Kenya_Vision_2030_-_2007*.)

1.2 Statement of the problem

Some of the recent reports on Africa among them; the 2014 African Transformation Report and UNCTAD's 2017 report among others have pointed out the issue that manufacturing sector as well as agriculture sector is a declining share of GDP among many developing economies while the services portion of GDP is increasing. The worry is that there is need for a major structural transformation in order to ensure a continuous growth for these economies. According to (Ghani

& O'Connell, 2014) services sector has experienced fastest growth rates in a number of low income economies which is evident by the immense part played by the services sector on these countries' GDP as well as employment opportunities. Services have been viewed as a potential directional sector for economic upturn or transformation and the hallmark characteristic of present-day economies is the expansion of an energetic, more lively and competitive services sector

In Kenya, from the Kenya Vision 2030 reports, the resilience of Kenya's economy over the 10-year period of the first and second medium term plan implementation (2008-2018) accredited to services. In 2019, Kenya's GDP grew by 5%, a service-sector oriented growth, where service sector grew by 6.7%, agriculture sector growing by 3.6% and lastly industry sector with 3.2%. The service sector contribution to GDP was 55.8% , the agriculture sector contribution to GDP was 21% and industry sector contribution being 16%(*KNBS - Economic Survey 2020*.).

Given this, the study wishes to comprehensively look at growth of the Kenya service sector and its benefaction towards Kenya's growth and development. The study therefore aims at empirically evaluating the determinants of services development to help policy makers nurture the expanding sector and influence dynamism in the sector, understand whether the service sector in Kenya is dominated by traditional or modern services as well as the impact of the service share on growth.

1.3 Research questions

1. What are the main drivers of service sector growth ?
2. Is there causation between the services and the overall GDPPC ?If so, what is the direction of causation?

1.4 Research objectives

1.4.1 General objective

To analyze the service sector growth in Kenya and assess its contribution towards overall GDP growth in Kenya for the period 1980-2020.

1.4.2 Specific objectives

The study specific are as follows;

1. To identify and empirically estimate the determinants of service sector development in Kenya for the period 1980-2021.
2. To empirically investigate the causal relationship between services and GDPPC.

1.5 Relevance of the study.

The study will enlighten the process of service sector development in Kenya and add to the subsisting body of facts the effect and the importance of services to growth and development of developing economies in Africa, Kenya being a member. Furthermore, the implications of this research paper will illuminate the contribution and significance of services to the structural transformation. In addition, the outcomes and conclusion will outline several policy implications on how to strengthen and reinforce the benefaction of services to growth and development as well as inform on the subsectors that largely contribute to Kenya's GDP.

1.6 Organization of the study.

Proceeding this introduction, Chapter 2 presents the literature review, which is divided into theoretical literature, empirical literature and concludes with literature overview. Chapter 3 presents the methodology used in the study, it discusses the theoretical framework and details the theoretical model, definition of the variables together with their measurement and a priori expectations are also provided. The data to be used and their sources as well as the pre-estimation test to be carried out are also presented in this chapter.

CHAPTER TWO: LITERATURE REVIEW.

2.1 Introduction

This chapter is organized in three sections, the first is the theoretical literature followed by the empirical literature section. This chapter also includes an overview of the literature recognizing some discontinuity in the literature that lead the way to the research problem.

2.2 Theoretical Literature.

Dating back to Adam Smith, the services sector was perceived to be unproductive and this prompted the abandonment of the services role in growth and development until as recently as 1950's when some developments in economic theory and applied economic research on service sector was witnessed. This began as a revolution in England which was occasioned by a transition from agricultural to an industrial economy and later spread to the West after which there was a shift from the industrial economy to the now service economies in addition to the realization of the importance of servics to growth and development after the world war II. This shift has not only advanced further in the US but also in all the developed countries and recently to high industrialized economies.

The continued growth of the service sector economy has brought about revolution in the structure of employment in the economy leading to a continuous change into the service sector employment resulting into an inquiry by various researchers to understand the factors accounting for this expansion of services employment.

The first explanation for the service sector expansion is the changes in the composition of demand to more services referred to as the 'hierarchy of needs' hypothesis as well as the 'three sector hypothesis' according to which services satisfy greater needs than goods so as people's income increase, they mainly demand more services and therefore as the economy grows employment transitions from agriculture sector to manufacturing sector and then evolve from manfucaturing sector to services this is because individual's demand will diversify from manufactured goods to services as a result of flooding in manufacturing and workers will then shift to the service sector .(Fisher,1935;Clark,1940). An analysis of household demand for goods and services of 48 US states using NIPA data from 1960-1961 consumer expenditure survey depicted greater elasticity of demand for services at (1.12) compared to that of goods between 0.93 and 1.07 and that other demand components such as government consumption and exports as well as household consumption explain the shift in final demand in the US. In

addition, services have greater employment growth than manufacturing by about say 0.6%. (Fuchs, 1968). A cross-country analysis on United Nations International Comparison Project data of US and other 33 countries showed that the relationship between services and income was positive that is it increases only when measured in domestic prices but there was no relationship when income levels were measured using regular prices.(Summer,1985)

The second explanation for the changes in employment to the service industry is due to the switches in the cross-industry allocation of labor which favors the differentiated service rising that is manufacturing firms continuously outsource their services to industries that specialize in provision of services and therefore as manufacturing sector increasingly outsource services operation, due to the reallocation of resources, the services employment share will rise. Input output analysis was used to analyze data of 5 OECD countries (France, Germany, Japan, New Zealand, UK, US) from 1969-1990. The study developed a measure for employment through the final product employment theory and a measure for productivity the concept of final product productivity .The results indicated a shift in final demand from industry to services caused by unbalanced productivity growth, where the productivity gains were mainly due to productivity improvements within the industries. (Russo & Schettkat,1998 & 2001)

A similar input and output analysis was conducted in the United Kingdom using British input-output data from 1979-1990 that showed that the service sector played a critical role in output growth and job creation particularly, due to increase in demand for services as intermediates. Outsourcing from manufacturing to services was moderate as compared to outsourcing from services to services which was more rampant. In addition, direct employment (within relevant industries) is greater in service sector compared to manufacturing to indirect employment (supply industry) (Greenhalgh and Gregory, 2001).

The other explanation for an increasing service sector employment share is as a result of inter-industry productivity differentials known as the cost-disease hypothesis in that labor productivity that is output per worker in the manufacturing sector grows more rapidly as compared to the services sector with labor productivity in services being lower compared to manufacturing therefore if output is maintained, the ever rising proportion of labor will be channeled to the service sector. This rapidly growing productivity results in manufactured goods being cheaper than services thus inspiring demand for them however it means that less labor is needed to

manufacture any given good as compared to services and the labor saving impact out ways the demand created effect of cheaper prices thus reducing the employment share in the sector. Data from the US from 1947-1976 was analyzed and the result showed that the price trend showed that employment was rising in the services due to low productivity growth in the stagnant services firms in that changes in demand from manufacturing to services was because of increasing nominal and employment figures because of productivity differential between the service sector and manufacturing sector. (Baumol,2001)

A study using panel datasets of 18 countries was undertaken for the years 1963-1994 to assess the various hypotheses explaining deindustrialization (decline in manufacturing employment). The results indicated that deindustrialization was mainly due to internal factors between manufacturing and service sector, rapid productivity growth in manufacturing sector than services sector as well as the associated fall in relative prices of manufacturing sector. This increased labor productivity (output per worker) in manufacturing sector results in a reduction of relative price of manufactured goods as economy develops encouraging substitution of manufactured goods for services items whose relative prices are increasing because of slower growth of labor productivity that is output per worker in service sector. (Rowthorn & Ramaswamy,1999)

In recent times, strong evidence has emerged suggesting that service sector growth path is not generally a linear path as previously thought. Eichengreen & Gupta, (2009) concluded that there are inherently two waves in the process of service sector growth in that one; in low level income countries the country transforms to middle income and is made up of primarily traditional services that include retail & wholesale trade, hotel & accommodation, transport & storage, public administration among others. The second wave at higher level income countries the country transforms to high income level and is made up of added modern services that include finance, information & technology, professional, technical, legal, business services however the 2nd wave was observed in more democratic economies that had higher trade openness.

Buera & Kaboski,(2012) on the other hand, in their analysis on the services sector rise in the US developed a theory and suggested that the services share growth does accelerate at high incomes but mostly the service sector growth is accredited to growth of high level skill intensive services

as well as the rise in market for high skilled labor due to high level of schooling as well as high return to the high-skill intensive services.

2.3 Empirical Literature.

This section discusses the multiple research studies that have been conducted to test various hypotheses that try to spell out the drivers of services growth in both developed and developing economies, the direction of causation between services and the economy's growth and the impact of various service subsectors on the economy.

The first group of studies is on the service sector development. A time series study to assess the determinants of service sector development in Pakistan from 1976-2010 was undertaken. VECM technique was applied and the results indicated a long run link between services share and GDP growth, population, consumption, investment and FDI. The normalized co-integration equation showed that investment, population, total debt and GDP growth negatively affect services while trade liberalization, government spending, labor participation rate and aggregate consumption have positive effect on services. The result that 1% increase in GDP growth rate led to a 0.002% decline in service sector share was contrary to economic theory in that GDP growth is expected to positively impact the service sector growth. (Alam & Mujahid,2014).

A similar study was undertaken in Rwanda to assess the determinants of services and their contribution to service sector and GDP growth rate during the years 1995-2020. The co-integration outcome confirmed a long run link between service and Rwanda's yearly GDP growth. In addition, the results showed that 1% increase in GDP growth rate increases the service share by 0.03%, 1% increase in FDI increases the service share by 0.03% and 1% increase in labor participation increases the service share by 0.88%. A causality test performed affirmed one-way causality from GDP growth to services. CUSUM test confirmed the parameter stability in the model. (Harelimana & Mukarwego,2021).

A comparison analysis on services development in China and India was conducted. The study aim was to empirically analyse the determinants of service sector growth. The study identified percapita income levels, urbanization, service exports share of total exports and female participation in the workforce as some of the determinants. Panel data from 31 regions in China for the period 1993-2003 and similarly data from 31 regions in India for the period 1993-2001 were relied upon and the estimation results showed that the percapita income levels and

urbanization had positive and significant impacts on service sector. The study experienced limitation in getting data on the share of service exports and female labor participation for China and India therefore the two variables were not estimated in the model. In addition to the two countries, the study also estimated a regression model for 93 countries for the period 2003 and the cross country estimation results showed that urbanization, services exports and income percapita had positive and statistically significant impact on service share but the value of services had a negative impact however it's coefficient was insignificant (Wu, 2007).

An empirical inquiry on the determinants of service sector development in India was conducted relying on time series data for the years 2000 to 2012. The study identified growth of percapita GNP, domestic investment, trade openness and FDI as some of the key drivers of service sector growth. An OLS regression estimation showed that GNPPC, gross capital formation proxy for domestic investment and trade openness had positive impact while FDI had a negative impact with the researcher stating that the reason for the negative effect is that most of the FDI inflows goes to manufacturing sector reducing the share of inflows that goes the service sector however all the variable coefficients were insignificant. VAR cointegration estimation was performed and the results indicated that increasein service sector share positively affected the growth of GNPPC and the effect was significant and also increase in GNPPC had a positive impact on services however not statistically significant. A granger causality test undertaken confirmed the VAR results in that there was a one way causality running from service sector share to GNPPC. (Singh, 2014)

The second set of studies concentrated on the impact of the various service subsectors on growth also, the role of the sector share and their interlinkages on economic growth. A study of 15 Schengen countries during the years 1970-2004 was undertaken to examine how sector share are related to growth and whether the sector adjustments and their growth paths are equilibrium phenomena. The co-integration results showed that service sector increased at the expense of agriculture and industry and a positive relationship exist between industry and agriculture sector. The granger non causality test result depicted a two way causality between growth rate of GDPPC and service sector as well as GDPPC and industry sector. In addition, higher service growth rate predicted negative GDPPC while GDPPC growth rate predicted only positive growth effects on service sector. (Linden and Mahmood, 2007). Ahmad et.al (2013) carried out a study

on data of 20 developed countries from 1971-2000 to analyze how sectoral share are related to economic growth. One-way causality from sectoral share to GDPPC in which agriculture and services share causes GDP per capita but industry share does not cause GDP per capita was observed. Modelling results of the barro and non-barro regression with a set of control variables (trade openness, inflation, fertility rate, public expenditure as % of GDP, life expectancy, schooling rate proxy for human capital) showed that service share had a negative influence on GDPPC while in contrast agriculture and industrial sector had positive impacts .

A similar study was undertaken during the period 1970-2010 to establish the linkages between the main four sectors in Nigeria that is manufacturing, oil and gas, agriculture and services and identify the greatest linkage effect. This study adopted the 2SLS and the SURE methods in order to remove biases brought about by other methods which do not fully capture the spillovers and externalities of the service sector. The results indicated that service sector output has a positive impact on agriculture and oil & gas output however presence of a negative link with the manufacturing sector. The industrial sector was negatively related to output of service sector confirming Baumol assertion that shift in demand plays minor role in share of service employment while the oil sector was unimportant in dictating service sector output due lack of capital. (Babatunde, 2014).

A research undertaken in Nigeria utilizing time series data from 2010-2016 to examine two of the main sectors, industrial and service sector interaction and their impact on economic growth. The study analysed two models one on the economy sectors (manufacturing, services and agriculture) and the second was on the subsectors of the three main sectors to show the productivity of the subsectors. The OLS regression indicated that the service sector and industrial sectors effect on GDP was positive with service sector having a greater impact with a 1-unit increase in aggregated service sector contribution leading to increase in GDP by 1.9 units as compared to increase in GDP by 1.4 units as a consequence of 1unit rise in the industry sector contribution. The disaggregated model results showed that out of the service subsectors of the accommodation and food, art and entertertainment services, administration, support and business services, finance, information and communication, real estate have positive effect on GDP while public administration, professional and scientific services, transport and utilities had a negative impact on GDP however all the industrial subsectors had growth enhancing effect although most

of the coefficients were statistically insignificant. The pairwise granger causality saw no causation in any direction. In addition, the study had 27 observations which are a bit low for a time series study. (Ishola & Olusoji, 2020).

A research study to explore the service sector and sub sector growth trends and its role in GDP and employment growth rate was conducted in Ethiopia using data from two growth periods 1999-2005 and 2005-2013 and this study employed Shapley decomposition technique in order to have a disaggregated analysis. Co-integration and granger causality results revealed that in the years 1999-2005, GDPPC growth rate was as a result of changes in work rates which emanated from agriculture while services had the largest benefaction to productivity and a negative impact employment. Nevertheless, between the years 2005-2013 both employment and productivity was contributed mainly by the services especially from the distribution. (Kabeta & Sidhu, 2016).

The third group of studies focused on the empirical investigation of the causation between the service sector and economic development as well as the influence of the service subsectors towards economic growth. In Mauritius a study was covering the period 1975-2009 investigated the link between service sector and GDPPC as well as the service sector impacts. Using the augmented production function growth model the ARDL and ECM approach was employed to investigate the long run as well as short run links as well a causality test performed all which pointed to a two way causation around GDPPC and services with the impact of service sector to per-capita GDP being positive. The tourism , wholesale trade, finance and transport and communication sectors depicted had positive significant impact on GDPPC in that 1% increase in the tourism sector lead to an increase in GDPPC by 0.10% while 1% increase in transport and communication lead to increase in GDPPC by 1.77% and 1% increase in whole sale trade lead to a 2.19% increase in GDP per capita. The impact on GDP was positive for education in which secondary school enrolment ratio was the proxy as well as communication transport and wholesale trade. Inflation had a negative influence on growth while education captured by secondary enrolment and good communication captured by telephone mainlines had a positive link to the GDPPC. CUSUM and CUSUMQ tests established stability of the established links in services growth and development and GDPPC in Mauritius. (Tandrayen-Ragoobur, 2010)

A similar study on service sector in Nigeria using time series data from 1981-2019 was conducted to investigate the link between service sector and GDP. A causality test undertaken

confirmed the existence of a two way causality from service sector to GDP with the VAR results showing no strong evidence of service sector in predicting GDP. The impulse response function, validated the VAR results and showed that in long as well as short run impact on GDP to shocks in the service sector was negative, while the opposite was true in that services impact on shocks to the GDP was positive and the ARDL cointegration depicted a long run positive link between service sector and GDP and the ECM depicted an annual correction of 88.30% disequilibrium in GDP. A more look at the services subsector revealed that the largest subsector contributor was professional, scientific and technical services with a 1% increase leading to a 94.55% increase in GDP while trade, real estate, finance and insurance, transport all had positive effect on GDP while the accommodation and food, art and entertertainment services, administration, support and business services had a negative effect all being statistically significant result. GDP, government expenditure and broad money supply yielded a significant impact on service sector output where an increase in GDP by 1% would result in a 0.18% increase in the service sector while an increase in broad money supply by 1% would result in a 0.19% decrease in services and 1% rise in government expenditure led to a 0.56% rise in services. (Effiong & Okon, 2021)

A study to assess the relationship between GDP and services was conducted in Saudi Arabia during the years 1969-2012. The results of a causality test undertaken indicated a two-way causation between services and GDP furthermore, the co-integration test employed depicts a long run link between the two. The OLS regression test results showed that service sector played a huge role in economic growth where an increase in service share by 1% results in increase in GDP growth by 0.93% in line with economic theory expectation. (Alhowaish, 2014).

Most studies in Kenya have been majorly on the various service subsector. A study done by Kibara et al. (2012) in Kenya for the period 1983-2010 to examine whether development in tourism had an impact on Kenya's GDP using the ARDL co-integration technique. The causality test undertaken showed one way causation flow from tourism to GDP growth. The study included trade as a variable to avoid the problem of two way causality model with trade results showed causal flow from trade to economic growth. Moreover, tourism was found to granger cause trade. Muli (2008) examined the causation between financial development and economic growth. The study utilized time series data for the period 1967-2006. The causality test results depicted a two way causation between financial depth (proxy for financial development) and

GDP growth rate. Financial depth was measured as cash held outside financial institution, demand deposits as well as banks assets ratio to GDP.The results showed a presence of long run positive link among financial depth and GDP growth rate. The other variables included namely the yearly population growth, yearly growth of export as well as the ratio of domestic investment to GDP all depicted positive effects to Kenya's yearly real GDP growth rate.

Another study in Kenya was conducted to examine factors affecting services export covering the period 1975-2015. The OLS regression results showed that value of merchandised goods, FDI, exchange rate, trade terms and secondary school enrolment had a positive influence on export of services. Value of services GDP as well as trade openness had a negative influence on services export contrary to economic theory. This, according to the researcher, was because of lack of better policies with regard to services export as well as trade restrictions in terms of tariff, non-tariff and quotas that hinder economic growth. However, apart from value of goods and the exchange rate (real) the results from the rest of the variables were not statistically significant (Kodi,2016). A similar research study was undertaken to look at the relationship between services export and GDPPC using time series dataset between the years 1980-2018. VECM model and causality test were applied to the standard growth function with the results showing an existing long run and short run link among services export and GDPPC but a one way causality from services exports to GDPPC. The result also revealed no short run link between GDP per capita and compensation of employees as well as exports of goods but existence of short run link between GDPPC and gross capital formation. (Matinkoi, 2020).

A study by Heshmati & Rashidghalam (2020) on labor productivity in Kenya manufacturing and services was conducted where cross-section data on service and manufacturing firms totaling to 670 firm observations was used. The study was undertaken to establish labor productivity and its determinants in Kenya and it analysed four model with four distinct variables where the 1st model explanatory variables comprised of the intensity for capital, electric, fuel and remuneration. The 2nd model added labor related variables onto the 1st model while the 3rd model added the firm related variable to the 2nd model and lastly the 4th model added infrastructure related variables to the 3rd model. The OLS with robust standard errors results indicated that higher remuneration increased productivity with the strongest effect with a positive elasticity of 0.49 followed by training and education of labor with an elasticity of 0.32-0.42. Female labor

participation and education for female as well as capital intensity seemed not to have any effect on productivity. Firm age as well as having a website and email had a positive relationship with labor productivity while power outage and waiting for connection had negative effect on labor productivity.

2.4 Overview of Literature.

The theory gives us three major versions for the rise and expansion of the service sector. First is the differences inter-industry productivity which lead to shift of employment from manufacturing to services due to the fact that labor productivity in services is slower in comparison to manufacturing. The second is due to the inter-industry divisions of labor favoring specialized services sectors which may lead to outsourcing to the service sector and lastly is the switch in the structure and composition of final demand as income rises. In recent times there have emerged another hypothesis in which reclassification of services into the traditional services and modern services where modern services are more informational and technologically oriented and thus more tradable can be a reason for the expansion of the service sector.

It is also evident from various empirical studies conducted that the service sector and economic growth are positively related with service sector with majority of studies pointing to a bidirectional causality between the two there are some studies that conclude that there is one way causation between services and GDP. Services also play an increasing crucial part in supporting economic transformation through the trade in services, employment creation particularly relevant for women due to high participation rate of women in services, value addition in further sectors with even productive resources moving from agriculture to services facilitating diversification via global value chains and integration. Kenya as well as it's prevalence in foreign direct investment growing faster in services sector as compared to other services sector leading to a growing infrastructure sector.

The studies on the various service subsectors impact on economic growth have posited a positive links between economic growth and the service sub sectors. In addition, the studies have brought into focus the key determinants of service subsector development which include trade liberalization and openness, government spending, labor participation, aggregate consumption, population, labor productivity. Apart from the factors discussed above as the drivers of service sector growth this study wishes to add innovation as a key determinant of service sector growth.

As services become more and more innovative, they create employment opportunities for skilled and better educated labor, enhance and refine the standard of services resulting in rise in income and increased demand for services. From the literature review, the economic analysis suggest that there exists long run links between some of the determinants of services informing the decision to apply cointegration test.

In Kenya, most empirical studies have majorly focused on the individual service subsectors and their impact on growth and the role of labor productivity on the service sector. According to my knowledge there seems to be no study done to comprehensively analyse drivers of the service sector as whole in Kenya and therefore this aims to empirically probe the causation between services and GDPPC given that there is no consensus on the direction of causation as well as identify and empirically estimate the main drivers determinants of service sector growth in Kenya.

CHAPTER THREE: METHODOLOGY

3.1 Introduction.

This chapter presents the theoretical framework, empirical model, definition and the measurement of variables together with their a priori expectations, data types and sources The pre-estimation and post-estimation tests to be carried out are also outlined.

3.2 Theoretical Framework.

As discussed above past empirical studies have laid emphasis on the contribution of numerous determinants of service sector development which include trade liberalization, government spending, labor participation, aggregate consumption, population, labor productivity and trade openness. In theory, income levels have a positive influence on service sector growth through the shifts in composition of final demand from goods to services since many consumer and personal services have greater income elasticity of demand therefore as economies grows and their percapita income levels rises a large share of income is used to buy services thus driving up the services share in GDP and employment. The GDP percapita is a good measure for income growth levels therefore we use the variable GDP percapita as a proxy for individual income levels.

Most services are traditionally perceived as being more labour intensive relative to being capital intensive therefore labor is an important input in the services sector. As a result developing a strong human capital resource base most especially education is paramount for the service sector this is because better educated workers are highly productive and they ultimately increase the productivity of the other workers in the service sector. The emerging modern services which include business, legal, technical and professional services, ICT and computer services, finance and insurance demand highly skilled and better educated workers. In addition, the high skilled and better educated workers complement technological innovative process as they are able to adapt and absorb the new innovation environment and modern technologies originating abroad as a result of FDI exchange and international trade. In this regard the study adopts government expenditure on education which represent government effort in building a well educated and skilled human capital resource base.

Trade openness on the other hand has increasingly positive implications on services one, it leads to opening and widening of not only internal markets but also international markets for services as a result of reduction on barriers allowing freedom for provision of services. The exposure to international market allows and stimulates competition encouraging quality improvement, efficiency and process innovation resulting in reduced prices, increased wages, increased productivity stimulating demand and creation of more jobs and increased value addition in the services.

Increased female labor participation has a positive impact on services as explained below. The jobs in services are more presumably be less physically challenging as compared to jobs in the other sectors of the economy and therefore they employ more women as compared to men. Some of the services like beauty salons and treatment , hotel and catering are more suited for female labor than male labor. The increased female labor participation results in increase in demand for services example childrens care, household services, elderly care services that can now be purchased in the market which were originally provided for by female members in the household. In addition due to their employment status there is little time available for them to cook meals resulting in demand for food from restaurants and take away food shops as well as food delivery services all this resulting in increased share of service sector in the economy. (European Foundation,2003)

FDI is considered to be a main determinant of service sector development. FDI provides a channel for transfer of advanced foreign technology as well as research and development, knowhow, knowledge and other valuable assets leading to growth and employment opportunities in services. This is essential for the new modern services that are rely much on innovation . FDI exposes services firms to international competition forcing them to advance and improve perfomances resulting in efficiency and competition driven productivity gains. Increase of FDI inflows into greenfield investment which are mainly finance services results in job creation in the service sector therefore increased FDI leads to an increase in service sector share.

Productivity differential between services sector and manufacturing sector is another determinant of service sector growth. From theory, there is a lower productivity in services as compared to productivity in the manufacturing and therefore the relative price of manufactured goods declines while that of services rise as economy grows thus encouraging substitution of manufactured

good for services leading to increase in the service sector whose relative cost is rising. Additionally given lower productivity in services in comparison to manufacturing maintaining the relative output level in the two sectors in the event of growing labor force an increased proportion is transferred to services activities resulting in the expansion of the service sector.

As services become more innovative, they create employment opportunities for skilled and better educated labor, enhance and refine the standard of services resulting in rise in income and increased demand for services. There are four components of innovation; service innovation which entails introduction of a new or improved service example a software that leads to increase sales which in turn results in increased employment in the sector. Second is organizational innovation that entails application of new or changes in the organization structure and management practices resulting in improved use of knowledge leading to high quality services and efficient labor leading to service sector growth. Third, marketing innovation which entails refined design and sale methods increasing the attractiveness of a service entry to new markets and lastly process innovation entailing improved or new processes in production enabling firms entry into new markets thus they gain market share, all these increasing the service sector output .This study therefore adds innovation as a key determinant where increase in the number of patents is expected to increase the service share.

To study the effects of the determinants of service sector development in Kenya the model is as follows:

SER =f (GDPPC,INN, TO, FDI, FLP, PG,GEE) ……. Equation 1

Where SER is the service sector share of GDP, GDPPC is the gross domestic product per capita yearly, FDI is the foreign direct investment, TO is trade openness, INN is innovations, FLP is the female labor participation rate, GEE is the government expenditure on education while the PG represents the Productivity gap between services and manufacturing sector.

3.3 Empirical model.

Disaggregating equation 1 into estimatable form gives rise to the following equation;

$$LnSER=\beta o+\beta 1LnGDPPC+\beta 2LnINN+\beta 3LnTO+\beta 4LnFDI+\beta 5LnFLP+\beta 6LnPG+\beta 7LnGEE+\mu \ldots\ldots \text{Equation 1}$$

Where βo to β7 are coefficients to be estimated while μ is the error term which represents the unobserved factors and errors in measurement of some of the explanatory variables.

This study will first conduct an OLS regression estimation in order to ascertain the impact of the explanatory variables on the service sector share of GDP. From theory, the economic analysis indicate that there are long run relationship. In addition, given that our data is time series, it is possible that some are non-stationary and since classical estimation of this variables might give spurious regression and misleading inferences therefore cointegration will be undertaken to overcome the problem while also investigating the long run relationship.

A granger causality test on equation 1 will also be undertaken to examine the causation link between the service share and GDPPC.

3.4 Variable definition and measurement

Table 3.1.1:Variable definition and measurement

Variable	Definition	Measurement	Expected sign
Service share	Comprises of the value added i.e net output (output less all intermediate output) in the service sector every year.	Percentage of GDP	Dependent Variable
GDPPC	Gross domestic product divided by the population every year. It represents percapita incomes levels.	US Dollars	Positive
Innovations	Patent applications filed by residents + patent applications file by non-residents with the Kenya Patent Office	Number of patents	Positive
Foreign Direct Investment	Is net inflows of investment in Kenya from internatioal investors to obtain a long term management interest (10 % or higher of voting capital) in a firm	US Dollars	Positive
Trade Openness	Imports plus exports divided by GDP and its used as a proxy for trade openness.	Percentage of GDP	Positive
Female Labor Participation	It is the yearly proportion of female population of age 15 and above actively employed in production of goods and services.	Percentage of Total Population	Positive
Productivity Gap	Ratio of productivity in services to productivity in manufacturing. Productivies are calculated by dividing the annual real output in the sector say services (manufacturing) by the total sector employment say services (manufacturing) every year	Percentage	Negative
Government expenditure on education	Government expenditures on education	Percentage of GDP	Positive

3.5 Data sources and data type.

This research will rely on secondary time series data for the years 1980-2020 drawn from the world development indicators, the UNCTAD statistics as well as the Kenya National Bureau of Statistics, and the economic surveys.

3.6 Pre estimation tests

3.6.1 Unit root test

Since we are using time series data stationarity is important. A time series whose behavior i.e mean and variances does not shift over time is said to be a stationary time series i.e. it's values do tend to change about the same level however the variability is constant over time. Unit root

test is used to test for the stationary or non-stationary and this is necessary to exempt time effect of time series variables used in the study in order to ensure that spurious results are not obtained which is a common case whenever non-stationary variables are regressed.

3.6.2 Co-integration test

Co-integration is undertaken in order to determine if there is presence of steady state equilibrium or long run relationship. This is achieved by ascertaining whether the regression residuals are stationary. Classical regression of one non-stationary series on other non-stationary series causes spurious regression as stated above this is as a result of violations of the OLS assumption of constant mean and zero variances rendering model estimates such as R^2, F & t statistics highly misleading. Given that our study uses time series and in many cases time series are stationary after differencing then co-integration is required since it merges short run dynamics with long run equilibrium allowing retrieval of information lost during differencing of variables.

3.6.3 Autocorrelation test

Observation in time series keep to natural course over time such that sequential observations are likely to display inter-correlation if there is short time gap between them and in this case the premise of no autocorrelation in the error term is violated resulting in the prediction based on regression estimates being inefficient. Therefore, auto correlation test will be undertaken to check whether the assumption was violated.

3.6.4 Heteroscedasticity test

The model assumption is that error term has a constant variance and in case of violation of this assumption, a heteroscedasticity problem arises. In this case the standard errors become unreliable result in biased results and confidence interval. A heteroscedasticity test will be carried out to test whether the violation of constant variance was violated.

3.6.5 Multicollinearity test.

The problem of multicollinearity arises when explanatory variables are correlated rendering the model unstable such that it varies a lot whenever there are small data changes. A Multicollinearity test will be undertaken to ensure there is no Multicollinearity among the variables

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

In this chapter we present the empirical results of the analysis of the service sector led growth in Kenya. The section include the descriptive analysis, the pre-estimation test results, the estimation results as well as the post estimation results and the discussion.

4.2 Descriptive statistics

Table 4.1.1 outlines the descriptive statistics for this study carried out prior to estimation in order to provide information on the properties of the data.

Table 4.1.1: Summary statistics

Variables	Observ.	Mean	Min	Max	Stand.Devia.	Variance	Skewness	Kurtosis
SER	41	52.44	46.4	58.4	3.27	10.69	-0.25	2.11
GDPPC	41	1273.74	1132.49	1602.79	130.34	16987.55	1.14	3.16
INN	41	122.49	10	376	89.38	7988.36	1.10	3.45
TO	41	26.42	13.61	36.4	5.10	26.02	-0.45	3.38
FDI	41	2.72e+08	394430.6	1.45e+09	4.18e+08	1.74e+17	1.71	4.67
FLP	41	59.44	17.6	72.1	21.57	465.17	-1.36	2.84
PG	41	0.62	0.43	0.95	0.17	0.03	0.73	2.25
GEE	41	5.70	4.6	7.3	0.75	0.57	0.34	1.96

Source : STATA Calculations

On average, the service sector share of GDP was 52.44% with the maximum being 58.4% and a minimum of 46.4%. The GDPPC had a mean of US $1273.74 with the highest recorded being US$1602.79 and a minimum of US$1132.49. The highest number of patent application was 376 and a minimum of 10 with the mean number of patents recorded being 122. Trade openness recorded a mean of 26.42% with a maximum of 36.4% and a minimum of 13.61%. FDI averaged $0.272 billion with a maximum of $1.45billion. The highest female labour participation rate was 72.1 with a minimum of 17.6 and averaged at about 59.44. On average the productivity gap between service and manufacturing was 0.62 with a maximum of 0.95. Kenya spent on average 5.7% of their GDP on education with a maximum of 7.3% and minimum of 4.6%.

The mean gives us the yearly expected values for our variables and the variance and standard deviations enables us to know by how much our variables vary from the mean. The service share,

trade openness and female labor participation are negatively skewed while GDPPC, number of patents, FDI , general expenditure on education and productivity gap are positively skewed. Given that all the skewness coefficient are between the given range -2 and +2, indicates that the variables are normally distributed. Only FDI falls within the kurtosis range of -3 and +3 as it reported a 4.67.

4.2 OLS Regression

The study first estimated an OLS regression to analyse the impact of the explanatory variables on service share of GDP. Table 4.1.2 outline the OLS regression outcomes.

Table 4.1.2 OLS outcomes

```
. reg lsersh lflp lto linn lgee lgdppc lfdi lpg
```

Source	SS	df	MS	Number of obs	=	41
				F(7, 33)	=	30.61
Model	.137729099	7	.019675586	Prob > F	=	0.0000
Residual	.021211657	33	.000642777	R-squared	=	0.8665
				Adj R-squared	=	0.8382
Total	.158940756	40	.003973519	Root MSE	=	.02535

lsersh	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lflp	.0857608	.0097101	8.83	0.000	.0660056	.1055161
lto	.0078008	.0333397	0.23	0.816	-.0600294	.075631
linn	.0134674	.0109817	1.23	0.229	-.0088749	.0358098
lgee	.0573981	.0393926	1.46	0.155	-.0227468	.1375431
lgdppc	.1118202	.0902702	1.24	0.224	-.071836	.2954763
lfdi	-.0009181	.0041327	-0.22	0.826	-.0093261	.0074899
lpg	-.0720807	.0316571	-2.28	0.029	-.1364874	-.0076739
_cons	2.612009	.7149196	3.65	0.001	1.157494	4.066524

From the table 4.1.2 above R^2 of 86.55% suggests that the data fits the model well and is significant at 5% signifance level with probability of F-statistic less than 0.05. Female labor participation, trade openness, innovation, expenditure on education and GDPPC have positive impact on service share as expected while productivity gap has a negative impact as expected but FDI has a negative impact on service share contrary to theory expectation. However, the variable coefficients are insignificant at 5% level of significance apart from female labor participation and productivity gap thus one can only majorly infer on the signs

4.3 Unit Root Test

The study preferred the ADF test for stationarity as it takes into consideration the autocorrelation problem and also because its easily applicable therefore its preffered for our study. The

conjecture proposes that the series is non-stationary and the decision criterion spells out if a test statistic in absolute is less than critical value in absolute we accept the conjecture that the series is non-stationary. Table 4.1.3 below outlines the results for the ADF test;

Table 4.1.3 ADF test outcomes

Variable	**Levels**			**First difference**		
	t-statistic	**5%critical value**	**Decision**	**t-statistic**	**5%critical value**	**Decision**
LnSER	1.813	3.544	Non-stationary	6.194	3.548	Stationary
LnFLP	1.636	3.544	Non-stationary	4.530	3.548	Stationary
LnTO	1.171	3.544	Non-stationary	5.049	3.548	Stationary
LnINN	1.871	3.544	Non-stationary	4.570	3.548	Stationary
LnGEE	2.551	3.544	Non-stationary	5.133	3.548	Stationary
LnGDPPC	1.728	3.544	Non-stationary	3.849	3.548	Stationary
LnFDI	4.644	3.544	Stationary			
LnPG	0.563	1.688	Non-stationary	2.813	1.690	Stationary

Source: STATA calculations

From the table 4.1.3 above the variables LnSER, LnFLP, LnTO, LnINN, LnGEE, LnGDPPC and LnPG are all order I(1) while LnFDI is order I(0) that is stationary at level. Given that the variables are integrated of order I(0) and I(1), the ARDL cointegration test is preffered for cointegration testing.

4.4 Lag Selection

Lag selection is crucial before cointegration since using too many lags may cause loss of degrees of freedom as well as multicollinearity and serial correlation in the disturbance. The suitable way of deciding the optimal lag is using the selection criteria with the lowest values from the various selection critea which include FPE, AIC, HQIC, LR and SBIC as outlined below

Table 4.1.4 Lag selection

Selection-order criteria
Sample: 1984 - 2020 Number of obs = 37

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	92.5882				1.4e-12	-4.57234	-4.44954	-4.22403
1	318.182	451.19	64	0.000	2.5e-16	-13.3071	-12.202	-10.1724
2	434.433	232.5	64	0.000	2.5e-17	-16.1315	-14.044	-10.2103
3	573.429	277.99	64	0.000	2.4e-18	-20.1854	-17.1155	-11.4777
4	3427.72	5708.6*	64	0.000	4.1e-81*	-171.012*	-166.96*	-159.518*

From the table 4.1.4 our optimal lag is 4 choosen by all the selection criteria however the SBIC had the lowest value.

4.5 Cointegration test

The study conducted the ARDL bound cointegration test where the conjecture states that there is no cointegration while the alternative hypothesis states that the null hypothesis is not rejected. The test is conducted on level form as opposed to first difference form. The decision criteria proposes rejection of the conjecture when the F-statistic is greater than the I(1) bound critical value and we cannot reject the conjecture if the F-statistic is lower than the I(0) bound critical value. Table 4.1.5 shows the Co-integration results

Table 4.1.5 ARDL Bounds co-integration test result

H0: no levels relationship F = 2.064
t = 0.246

Critical Values (0.1-0.01), **F-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_7	2.03	3.13	2.32	3.50	2.60	3.84	2.96	4.26

accept if F < critical value for I(0) regressors
reject if F > critical value for I(1) regressors

Critical Values (0.1-0.01), **t-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_7	-2.57	-4.23	-2.86	-4.57	-3.13	-4.85	-3.43	-5.19

accept if t > critical value for I(0) regressors
reject if t < critical value for I(1) regressors

From table 4.1.5 our F-statistic 2.064 is lower than I(0) critical value 2.32 at 5% level therefore we cannot reject the conjecture indicating there is no cointegration. The implication is that we can only estimate the short run dynamics which is the ARDL model.

4.6 ARDL Short Run Dynamics

Given that there is no cointegration that is there is no long run relationship we only estimate the short run ARDL model. Table 4.1.6 below depicts the short run outcomes

Table 4.1.6 ARDL short run outcomes

Variables	Coefficients	Standard errors	P-value
LnFLP	-0.061	0.037	0.132
LnTO	-1.331	0.048	0.017
LnINN	0.036	0.019	0.079
LnGEE	0.203	0.871	0.040
LnGDPPC	1.504	0.521	0.015
LnFDI	0.016	0.004	0.003
LnPG	-0.415	0.135	0.010
Constant	0.658	1.361	0.638

From the table all the variables were significant at 5% apart from LnFLP, LnINN and the constant however LnINN was significant at 10% . LnFLP, LnTO and LnPG had negative impact on LnSER while LnINN, LnGEE, LnGDPPC and LnFDI had positive impacts in the short run. 1% rise in female labour participation leads to a 0.061% decrease in service sector share in the short run ceteris paribus however this was insignificant. A 1% increase in the productivity gap leads to a 0.42% in the service sector share in the short run ceteris paribus. 1% rise in the GDPPC leads to a 1.5% rise in the service sector share ceteris paribus in the short run.

Table 4.1.7 ARDL short run dynamics

```
. ardl lsersh lflp lto linn lgee lgdppc lfdi lpg, lags (2 0 3 3 3 3 2 3) aic

ARDL(2,0,3,3,3,3,2,3) regression

Sample:     1983 -     2020                 Number of obs     =         38
                                            F(  26,     11)   =      24.98
                                            Prob > F          =     0.0000
                                            R-squared         =     0.9833
                                            Adj R-squared     =     0.9440
Log likelihood =  133.56713                 Root MSE          =     0.0134
```

From table 4.1.7 the R^2 value of 98.33% shows that the model fits the data well and the probability of F-statistic 0.000< 0.05 implies statistical significance of the model at 5%.

4.7 Granger Causality

Wald tests was performed to determine the direction of causality. The conjecture proposes that there is no granger causality and the decision criteria proposes if p-value is less than 0.05 we reject the null hypothesis. Table 4.1.8 shows the wald test granger causality results. From the table there exists a two-way directional causality between service sector share and female labour participation as well as between service sector and GDPPC. In addition there is one directional causality from innovation to service share, from FDI to service sector share as well as the productivity gap between services and manufacturing granger causes service sector share.

Table 4.1.8 Results for granger causality test

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
lsersh	lflp	6.3783	1	0.012
lsersh	lto	.84688	1	0.357
lsersh	linn	7.1641	1	0.007
lsersh	lgee	.0156	1	0.901
lsersh	lgdppc	7.3764	1	0.007
lsersh	lfdi	4.4087	1	0.036
lsersh	lpg	6.4345	1	0.011
lsersh	ALL	39.342	7	0.000
lflp	lsersh	4.7993	1	0.028
lflp	lto	2.5261	1	0.112
lflp	linn	.01449	1	0.904
lflp	lgee	.99172	1	0.319
lflp	lgdppc	.51202	1	0.474
lflp	lfdi	.01708	1	0.896
lflp	lpg	2.8916	1	0.089
lflp	ALL	13.916	7	0.053
lto	lsersh	1.6977	1	0.193
lto	lflp	.02821	1	0.867
lto	linn	8.2666	1	0.004
lto	lgee	7.543	1	0.006
lto	lgdppc	3.9767	1	0.046
lto	lfdi	1.4766	1	0.224
lto	lpg	.46868	1	0.494
lto	ALL	67.947	7	0.000
linn	lsersh	.13826	1	0.710
linn	lflp	4.464	1	0.035
linn	lto	.47186	1	0.492
linn	lgee	1.7086	1	0.191
linn	lgdppc	.1575	1	0.691
linn	lfdi	.14755	1	0.701
linn	lpg	21.36	1	0.000
linn	ALL	46.546	7	0.000
lgee	lsersh	1.2986	1	0.254
lgee	lflp	.88545	1	0.347
lgee	lto	9.6962	1	0.002
lgee	linn	2.0659	1	0.151
lgee	lgdppc	20.061	1	0.000
lgee	lfdi	1.3106	1	0.252
lgee	lpg	5.9283	1	0.015
lgee	ALL	58.414	7	0.000
lgdppc	lsersh	17.028	1	0.000
lgdppc	lflp	3.6387	1	0.056
lgdppc	lto	.07072	1	0.790
lgdppc	linn	4.9394	1	0.026
lgdppc	lgee	5.3122	1	0.021
lgdppc	lfdi	.18933	1	0.663
lgdppc	lpg	6.723	1	0.010
lgdppc	ALL	146.01	7	0.000
lfdi	lsersh	.87279	1	0.350
lfdi	lflp	.79691	1	0.372
lfdi	lto	.00295	1	0.957
lfdi	linn	2.6672	1	0.102
lfdi	lgee	3.8251	1	0.050
lfdi	lgdppc	.05446	1	0.815
lfdi	lpg	.16067	1	0.689
lfdi	ALL	33.886	7	0.000
lpg	lsersh	.40371	1	0.525
lpg	lflp	3.3526	1	0.067
lpg	lto	.5895	1	0.443
lpg	linn	.07696	1	0.781
lpg	lgee	16.122	1	0.000
lpg	lgdppc	29.192	1	0.000
lpg	lfdi	1.9901	1	0.158
lpg	ALL	76.099	7	0.000

4.8 Discussion of Results

The OLS regression outcomes indicate that all the variables depicted the expected signs apart from FDI which showed a negative impact on service sctor share contrary to theory expectation however most variable coefficient were insignificant at 5% level except the log female labor participation and log of productivity gap between services and manufacturing. The ADF unit root test outcomes indicated that all the variables were integrated of order 1 apart from the log of FDI which was integrated of order I(0). Given that the variables are integrated of order I(0) and I(1), the ARDL bound cointegration test was preffered for cointegration testing.

The ARDL cointegration proved there was no long run relationship and therefore the study estimated only the ARDL short run dynamics. The results of the ARDL short run dynamics pointed to a 5% significant negative impact by the productivity gap on service sector share where a 1% rise in the gap leads to 0.42% decrease in service sector share ceteris paribus in the short run. A 1% rise in trade openness leads to a 1.3% decrease in service share ceteris paribus in the short run at 5%. At 10% significance 1% rise in innovation leads to 0.03% rise in service share while 1% rise in FDI leads to an increase in service share by 0.01% at 5% level of significance. GDPPC had the largest contribution to service share where a 1% rise in GDPPC results in 1.5% increase in service share ceteris paribus.

The granger causality test indicated a two-way causation between services share and female labour participation as well as between service sector and GDPPC. One directional causality from innovation to service share, from FDI to service sector share as well as the productivity gap between services and manufacturing granger causes service sector share was also present.

The study's objective was to determine the determinants of service sector and this study finds that expenditure on education, GDP percapita income, innovations and FDI are main drivers of services growth in Kenya. The productivity gaps between services and manufacturing had a negative impact on service sector share and therefore steps need to be taken to bridge the gaps between the sectors. Given that trade openness has a negative influence on services steps and regulations are needed to ensure that Kenya's service sector reaps the benefits from trade and integration between countries.

4.9 Post-estimation tests

Post-estimation techniques are performed in order to investigate statistical soundness of the model results.

Heteroscedasticity

The study employed the white test to check for heteroskedaticity. The conjecture states that there is constant variance and the decision criteria proposes reject of the conjecture if p-value is less than 0.05. Table 4.1.9 show the outcome of the white test.

Table 4.1.9 White test results

```
. estat imtest, white

White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(37)     =     38.00
         Prob > chi2  =    0.4236

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	38.00	37	0.4236
Skewness	24.97	26	0.5208
Kurtosis	0.62	1	0.4326
Total	63.58	64	0.4912

From table 4.1.9 the p-value 0.4326 > 0.05 thus we cannot reject the conjecture of constant variance at 5%.

Autocorrelation test

Observation in time series keep to natural course over time such that sequential observations are likely to display inter-correlation if there is short time gap between them and in this case the premise of no autocorrelation in the error term is violated resulting in the prediction based on regression estimates being inefficient. Therefore, a serial correlation test was be undertaken to check whether the assumption was violated. The null hypothesis proposes no serial correlation

and the decision criteria is to rejection of the conjecture if the p-value is less than the 0.05. Table 4.2.1 outlines the autocorrelation outcomes

Table 4.2.1 Results for autocorrelation

```
. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(*p*)	chi2	df	Prob > chi2
1	0.507	1	0.4764

H0: no serial correlation

Given that 0.4764 > 0.05 we cannot reject the conjecture of no autocorrelation.

Multicollinearity test

The problem of Multicollinearity occurs where explanatory variables are correlated with each other. The VIF test was used to check for the problem of Multicollinearity and the decision criteria is a value above 5 or 10 implies there is high collinearity among the variables. Table 4.2.2 outlines the VIf test results.

Table 4.2.2 VIF test outcomes

```
. vif
```

Variable	VIF	1/VIF
lgdppc	4.82	0.207407
linn	4.60	0.217363
lpg	4.06	0.246148
lfdi	3.47	0.287978
lto	3.16	0.316545
lflp	1.75	0.570894
lgee	1.65	0.606004
Mean VIF	3.36	

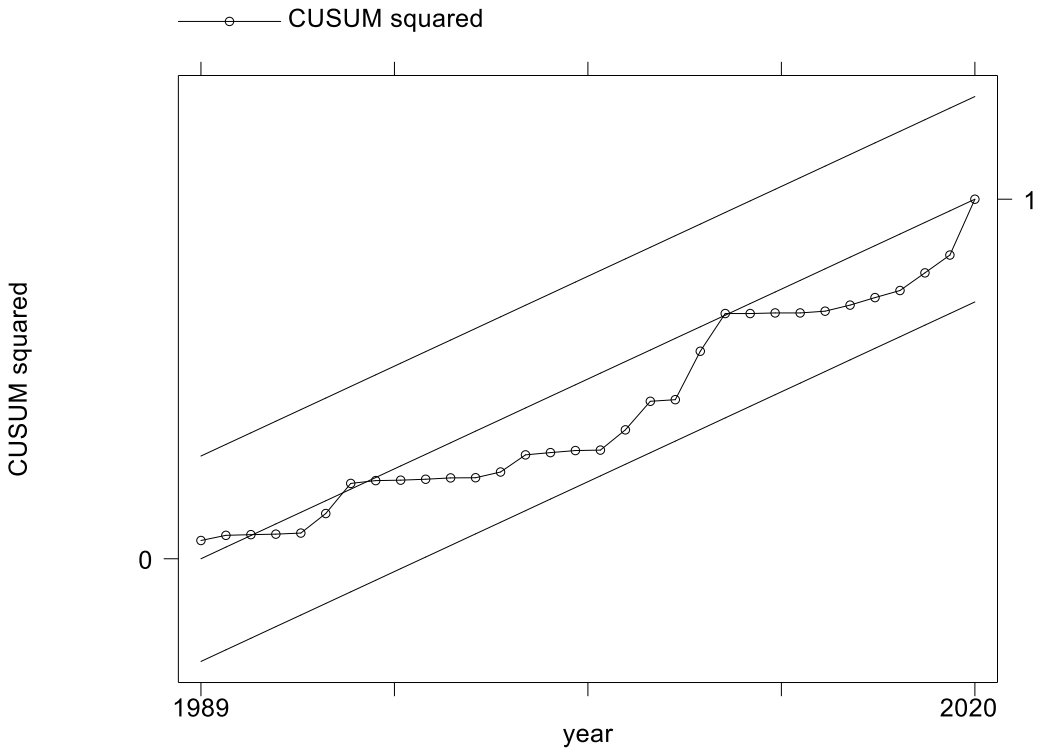
The VIF result are all below 5 indicating there is no presence of multicollinearity among the variables.

Stability test

The study performed the CUSUM and CUSUMQ test to test for stability of the model. The conjecture proposes that the coefficients in the model are stable and the decision criteria is to reject the nullhypothesis if the plot of the CUSUM does not lie or crosses the two parallel lines

representing the 5% level of significance critical bounds. Table 4.2.3 represents the stability test outcomes

Table 4.2.3 Stability test outcomes



From the table 4.2.3 our model lies between the critical bounds and therefore we cannot reject the conjecture therefore our model is structurally stable.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND POLICY IMPLICATIONS.

5.1 Introduction

In this chapter we outline the summary of empirical findings, conclusions and the policy implications arising from the study.

5.2 Summary of findings

In this study the OLS regression outcomes indicated that all the variables coefficients depicted the expected sign apart from FDI which showed a negative impact on services contrary to expectation however most of the coefficients were statistically insignificant therefore drawing inferences from them would be inaccurate. On conducting the stationarity test all variables were non-stationary at level apart from log of FDI which was stationary at level but the non-stationary variables became stationary after first differencing.

The ARDL bounds cointegration test proved there was no long run relationship and therefore short run dynamics were estimated. The ARDL short run results indicated positive short run relationship between service sector share and innovation, expenditure on education, GDPPC and FDI. In addition there was existence of negative short run relationship between trade openness and productivity gap between services and manufacturing however there was no presence of relationship between service sector and female labor participation in Kenya.

The granger causality test results indicated a two-way directional causation between services and female labour participation as well as between service sector and GDPPC. Uni-directional causality from innovation to service share, from FDI to service sector share as well as the productivity gap between services and manufacturing granger causes service sector share was also evident. Diagnostic checks performed to test the consistency and stability of the results such as heteroscedasticy, autocorrelation, multicollinearity tests indicated no such problem with the results with the CUSUM &CUSUMQ confirming the stability of the results.

In addition, an analysis of the influence of service subsectors on Kenyan GDP revealed that transport and storage is the largest contributor to GDP followed closely by retail & wholesale trade, real estate as well as finance & insurance respectively while the lowest contributors are accommodation services followed by ICT and professional and support services as well.

5.3 Conclusion

The study objective was to determine the main drivers of service sector growth and this study employed the OLS regression and the ARDL Cointegration tests in achieving this ojectives. From the results of the study we can conclude that innovations, GDP percapita income, expenditure on education and FDI are main drivers of services growth in Kenya. The productivity gaps between services and manufacturing as well as trade openness have a negative impact on service sector share. This results are consistent with other previous studies that include Wu (2007), Singh (2014) and Harelima & Mukarwego (2021) among others where GDPPC income levels and investment played an important role in service sector growth.

The second objective was to assess whether there is causality between service sector and GDPPC in Kenya and if so the direction of the causality and this study employed the wald test granger causality and from the results we can conclude there exists a two-way causation between service and GDPPC. It is evident that there is a strong association between the two and it implies that as the GDPPC grows it encourages and stimulates demand for services sector as with rise in income individuals tend to be services oriented and in essence with this expansion of the service sector further leads to rise in the GDPPC income levels. In addition, in the analysis of service subsectors we can conclude that the service sector in kenya is dominated by the traditional services that is transport and storage,retail and wholesale trade, real estate and very few modern services that is finance and insurance that play a key role Kenya's service sector therefore there is room for improvement where Kenya can influence its dominance in the modern services such as ICT and professional and support services.

5.4 Policy Implications

The study's main aim was to analyze the services growth in Kenya and assess its contribution towards overall GDP growth in Kenya and identify the main drivers of services growth in Kenya as well as determining whether there is causation between the service sector output and the overall GDP growth and if so the direction of causation. From the study we can conclude that services is a key sector in the Kenyan economy contributing about half of the share of Kenya's GDP.

The results indicate that the main driver of service sector development in Kenya is GDPPC income levels therefore the Kenyan government need to adopt policies that further advances the

GDPPC levels in order to aid in promoting service sector activities. Another key driver of Kenya's service sector growth is innovation. Service innovation creates employment opportunities for skilled and better educated labor, enhance and refine the standard of services resulting in rise in income and increased demand for services therefore the Kenyan government should build on service innovation activities and develop capacity and institution development policies such as providing incentives to firms and individuals promoting innovation, grants for firms and employees who want to train abroad as well as awarding schemes for firms and individuals with great innovations. Expenditure on education is also a major driver of services development given that there is a link between the emerging modern services which include business, legal, technical & professional services, Information&Communication Technology and computer services, finance & insurance and highly skilled and better educated workers as well as the high skilled, better educated labor complement technological innovative process as they are able to adapt and absorb the new innovation environment therefore the government should highly invest in educating its workforce to create a skilled workforce as well as laborforce training strategies also on innovation and workers development. FDI in services is also a key driver in Kenya's service sector growth as it provides a channel for transfer of newly advanced foreign technology as well as research and development, knowhow, knowledge and other valuable assets leading to growth and job creation in the service sector exposes services firms to international competition forcing them to advance and improve perfomances resulting in efficiency and competition driven productivity gains therefore the Kenyan government should ensure a friendly environment that attracts investors into the country as well as giving incentives to investors in order to increase the FDI inflows. A key step the Kenyan government has taken recently is to create a state department on investment under the ministry for Trade, industry and investment in realization of the important role investment plays.

The outcome of the study show no relationship between female labour participation it is therefore critical to have gender mainstreaming strategies such as enforcing and make sure the two thirds gender rule is adhered to in public sector job and encourage the same in the private sector in order to secure full female labor participation in the Kenya services sector. Given that the productivity gap between services and manufacturing has a negative impact on services, there is need to embrace and shift to the new modern services such as ICT, finance and insurance, Professional, legal, technical and business services and Computer services since they have a

higher productivity, are more tradable and increase more employment opportunities as compared to the traditional services. The study finds that trade openness has a negative influence on services this implies that trade openness in Kenya has not led to aggressive export of services as expected. This is due to certain reasons; out of the 12 service subsectors in GATS agreement Kenya has made commitment to only five subsectors. Out of the five sectors Kenya's top export services are transport and travel (tourism) services which are less productivite and tradeable as opposed to telecommunication and ICT services, professional and business services. In addition there are constraints such as high tariffs at the port, border insecurities and terrorism threats, weak integration in the region, political intrusion and discriminatory policies and rules in other subsectors. In order to enhance aggressive export in services intervention need to be undertaken to deal with the constraints such as increasing commitments of the remaining service sector, enhance and encourage export of services where Kenya has a comparative advantage and enhance integration among neighbouring member countries.

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