BRAIN DRAIN AND ITS CONTRIBUTION TO GLOBALIZATION AND ECONOMIC DEVELOPMENT IN KENYA

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DECLARATION

This Research project is my original work and has not been presented for examination in any university.

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This Research Project has been submitted for examination with my approval as the University supervisor.

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I thank The Most High God for His never ending favour on my life throughout this course, for financial provision and excellent health. To Him only be glory forever. Without Him, this achievement would not have been possible. I know you will make this degree count for so much more in my life.

To my supervisor Dr. Yabs, I thank you most sincerely, for your great guidance in making this project a success. Only God can adequately reward you.

To my parents, I thank you for your continuous support and encouragement. I am grateful that you took me to school. To my siblings, thank you for cheering me on, you are my little heros.

To my fellow mates who we labored together with, I pray that you will be blessed beyond your imagination. May this degree add immeasurable to your lives.
DEDICATION

I dedicate this Research Paper to my Lord and King, you who has given me life to do great things in this life, you are my number one hero. I salute You!

To my parents, you are numbered among the great.
Brain Drain is generally not a new phenomenon in developing countries. It has been known to rob developing nations of their professionals to the developed world. This research paper aimed at examining the issue of human capital flight or brain drain, and its contribution to globalization and economic development in Kenya. The study examined the African medical brain drain case and Kenya to be specific. The paper further assessed the magnitude, intensity and determinants of the brain drain showing that this form of human capital flight is becoming a dominant pattern of international migration and a major aspect of globalization and economic development. The study sort to determine what kind of effects that brain drain has on the developing economies in the African continent, with special focus to Kenya whether positive or negative. The study aimed at assessing the losses that Kenya incurs from brain drain in the medical sector. The study considered the cost incurred in training a medical sector from Primary School all the way to Medical school and compared that to the return on investment for the economy. The findings showed that Kenya has been on the losing end for many years as it has been unable to retain its medical professionals with rich countries gaining due to the favourable employment terms in these nations. This being the findings of just the medical brain drain, it would go without saying that any form of brain drain is not good for any developing economy like Kenya. The disadvantages by far outweighs the gains that may result. This study harmonizes with other studies done in Kenya, that brain drain is a phenomenon that should not be encouraged by developing economies in Africa. If Kenya is to meet the rising human resource need, it must strive to discourage any form of brain drain and focus on retaining its skilled young professional at all costs. The retaining of these professionals will ensure that the economy grows, and that the country does not have to import labour to meet the human resource need. It will further help in reducing the unemployment levels in the country. Employing its own professionals would further reduce the operating costs for the country as employing local labour is always cheaper than imported labour. Based on present evidence Kenya has experienced significant brain drain and waste. According to a report by World Health Organization (WHO) more than 4 million additional health professional are urgently needed in 57 countries, 36 of which are sub-Saharan Africa (World Health Organization, 2006). This report states that not enough health workers have been trained or recruited where they are most needed. Moreover, an increasing number are joining a brain drain of qualified professionals who are migrating to better paid jobs in rich countries. There are several reasons why this paper focuses on the Kenyan case. First, the Kenyan population abroad is one of the top ten among African countries and is therefore a significant population to consider. Second, there is anecdotal evidence that most Kenyan migrants experience brain drain in developed countries. This claim is disturbing and creates extra interest in looking at Kenya specifically. Kenya is also a good county to focus on because of its government in its Diaspora and the express interest of the network of Kenyans abroad in development efforts in Kenya. Furthermore, Kenya is the regional hub for trade and finance in East Africa.
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<tr>
<td>FDI</td>
<td>Foreign Direct Investments</td>
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<tr>
<td>U.S.</td>
<td>United States</td>
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<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<td>U.K</td>
<td>United Kingdom</td>
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<td>G8</td>
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<td>DR</td>
<td>Democratic Republic</td>
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<tr>
<td>E.U.</td>
<td>European Union</td>
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<td>MBD</td>
<td>Medical Brain Drain</td>
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</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>RTT</td>
<td>Reverse Transfer of Technology</td>
<td></td>
</tr>
<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
<td></td>
</tr>
<tr>
<td>KSH</td>
<td>Kenya Shilling</td>
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<tr>
<td>US$</td>
<td>United States Dollar</td>
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<td>WHO</td>
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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Brain drain is said to occur when a country becomes short of skills as people with such expertise emigrate. Alternatively, it can be described as the loss by countries of essential and needed professionals via emigration to other countries. Skilled workers included in this class are scientists, doctors, engineers, academics, nurses, managers, and other professionals who have received a tertiary education. Brain drain as a concept emerged in the 1960s triggered by the massive migration of British scholars to the United States.

The early emigration of Kenyans as with most Africans was a product of colonialism. Before 1960, most Kenyan immigrants went to the United Kingdom (UK), but with time, the outflow of skilled manpower tended more to the United States. This change was triggered by the tightening of immigration policy in Britain and the need for skilled human capital in the United States. Between 1960 and 1975, higher-educated Africans migrated at the rate of about 1,800 a year. At this time, Kenya was among the top five sending countries from SSA to the United States. Other main sources included Ghana and Nigeria.

As with other human migration, the social environment is considered to be a key reason for this population shift. In source countries, lack of opportunities, political instability or oppression, economic depression, health risks and more contribute to brain drain,
whereas host countries usually offer rich opportunities, political stability and freedom, a
developed economy and better living conditions that attract talent. At the individual level,
family influences (relatives living overseas, for example), as well as personal preferences,
career ambitions and other motivating factors can be considered, (Wikipedia)

1.1.1 Globalization

In the process of economic globalization, international movement of production factors is
an essential component that stimulates further integration of the world economy. On the
one hand, financial liberalization and the practice of international arbitrage contribute to
large cross-border flows of capital. While the amount of Foreign Direct Investment (FDI)
at the world level has increased from 13,346 million in 1970 to 1,833,324 million in 2007
(measured in US$ at current prices), the rise in FDI per capita is far more remarkable in
the developed economies alias “North”, than in the developing economies alias “South.”
This North-South disparity reflects largely the wide gaps in terms of total factor
productivity, and not insignificantly, the higher risks involved in investing in many
developing countries.

Similarly, international wage gaps are the most important pull factor that lures economic
migrants from the developing to the developed economies (Clemens and Pritchett, 2008;
Grogger and Hanson, 2008). The immigration rate in high-income countries has tripled
since 1960 and doubled since 1985.
Moreover, (Docquier, 2009) document that, in OECD countries, two thirds of the increase in immigration stocks during the 1990s are accounted for by the South-to-North movement. When skill heterogeneity is taken into account, it is found that the number of highly educated immigrants has increased by 70 percent, whereas the corresponding figure for immigrants with lower educational attainments is a dwarfed 30 percent. Although this difference does not necessarily imply an increasing trend of brain drain, stylized facts show that there does exist strong positive selection of emigrants, especially in the lower income countries.

In many developing countries, brain drain rates are well above 40 percent, particularly for sub-Saharan African countries, Central American countries, and small states. This positive selection may originate from either self-selection into emigration or from the destination country’s immigration policy. As shown by Grogger and Hanson (2008), the larger international wage differences for skilled than for less-skilled workers are consistent with positive self-selection.

1.1.2 Economic Development

According to (Dhananjayan Sriskandarajal, 2005) more than a decade ago, U.S. presidential candidate Ross Perot talked about the "giant sucking sound" made as American jobs went south of the border. These days, there is a far more significant sucking sound, one that concerns the whole world and one that could impede collective efforts to make poverty history. That new sucking sound is being made by highly skilled people leaving developing countries and heading to the developed world.
The scale of this "brain drain" is staggering. As demographer B. Lindsay Lowell and geographers Allan Findlay and Emma Stewart point out in their research, nearly one in 10 tertiary-educated adults (those with some university or post-secondary schooling) born in the developing world between a third and half of the developing world's science and technology personnel, now live in the developed world. With demand for skilled workers in the developed world unlikely to diminish soon, that sucking sound is likely to get louder.

The implications for poor sending countries are stark. According to the African Capacity Building Foundation, African countries lose 20,000 skilled personnel to the developed world every year. All the developed world's efforts to increase aid to these countries may not matter if the local personnel required to implement development programs are absent. Every year there are 20,000 fewer people in Africa to deliver key public services, drive economic growth, and articulate calls for greater democracy and development.

That something needs to be done about brain drain is not in question. G8 leaders have discussed the issue, the UK's Commission on Africa calls for better responses, and unions, development agencies, and other civil-society groups are demanding action. The key question is what should be done. The intuitive response and one that is most frequently aired is to try to plug the drain. Stemming the flows seems to make sense: the departure of these key workers hurts the sending countries, so reducing the scale of emigration should ease the pain.
However, seeking to limit mobility may not be the most efficient or humane way to tackle the problem. Indeed, the very notion of "brain drain" may be outdated and simplistic, wrongly implying that the impacts of the movement of highly skilled people are always and everywhere a bad thing. Instead, what is needed are better methodologies to assess the net impacts of migration including but not limited to the impacts of brain drain as well as more nuanced policies that target particular problems where and when they arise. One-size-fits-all measures aimed at limiting mobility from particular regions or countries could end up inhibiting development, not to mention curbing the rights of would-be migrants.

Moreover, there is a need to devise measures that recognize that greater mobility, not less mobility, is likely to be the most sustainable and efficient response over the long term. However, this approach presents an immense challenge: how to tap into the immense economic and other benefits migration can deliver for individuals and receiving countries, while simultaneously ensuring that sending countries also benefit. (Dhananjayan Sriskandarajal, 2005)

1.1.3 Migration of Labour

Cross-border migration of people from one country to another has become an increasingly important feature of our globalizing world and it raises many important economic, social and political issues.

More than 200 million people live in countries in which they were not born. Estimates compiled in 2009 suggested 580,000 to 820,000 Chinese migrants were living in Africa.
In 2012 the figure is likely around 1 million. The global stock of international migrants grew by 38 per cent from 1990 to 2010. However, international migrants still constitute a very small fraction of the world population; just 3.1 per cent (213.9 million) in 2010. Migration is overwhelmingly from less developed to more developed countries and regions.

### 1.1.4 Concept of International Business

International business comprises all commercial transactions (private and governmental, sales, investments, logistics, and transportation) that take place between two or more regions, countries and nations beyond their political boundaries. International business is therefore well defined by the following basic concepts:

**Exporting and Importing** - Exporting is concerned with the selling of domestic goods in another country. Importing is concerned with purchasing goods made in another country.

**Balance of Trade** - The Balance of trade represents the difference between the visible export and import.

**Balance of Payment** - A Balance of payment represents the difference between visible plus invisible export and visible plus invisible import. Balance of payment can either be favourable or unfavourable. Favourable is where more money is flowing in the country than flowing out of the country. Unfavourable is where more money is flowing out of the country than flowing in.

**Exchange rate** - It is the rate at which one country can exchange its currency with other country’s currency. Exchange rate is of four types:
Devaluation - Reducing the value of nation’s currency in relation to currencies of other nations.

Revaluation- Increasing the value of a country’s currency in relation to that of the other countries.

Fixed Exchange Rate - It is an unvarying exchange rate, which is set by the government.

Floating Exchange Rate - An exchange rate that fluctuates with market conditions.

1.1.5 Kenyans in Diaspora

From a few thousands scattered across the globe but mainly in North America and the United Kingdom, the number of Kenyans in the diaspora has exponentially grown in the last two decades. But the importance of this community is not only in the numbers but they have come to wield so much economic power that their remittances have hit the Sh160 billion mark annually, according to a World Bank report: Future of Africa Remittances Program released in October 2010, earning them the distinction of being ranked the country’s fourth highest foreign exchange earner after tea, horticulture and tourism

Kenyans living abroad mainly send money home to help their families and for investment in various sectors, including real estate. Analysts believe that because people in the diaspora have more ties to the land and more access to information, they will be better able to invest in and contribute sustainably to development efforts.
1.2. Research Problem

Kenya has experienced a human capital flight in the recent decades leaving their home countries with little man power to drive their developing economies. Talent plays an important role in helping a country develop. The economy of a country that has a large number of world-class scientists and technicians can be more innovative than those of others that do not. Different areas and nations have distinct policies to retain skilled workers due to the different national or regional situation. For instance, in African countries, the health systems have been severely affected by brain drain, so various measures have been suggested and tried to limit the migration of health workers to rich countries.

Other countries (Switzerland, Austria, France) have similar initiatives. The issue of brain drain has been a common topic of discussion not only in the world over but in the African continent also. Kenya has also not been left behind in these matters as it is a reality in this day and age. In the post-colonial era, we have had many Kenyans seeking scholarships to study in the developed world as there were no enough institutions of higher learning for their various dreams to be realized then.

There has also been the issue of lack of state of the art facilities in the training institutions, raising the need for students to seek opportunities outside the country. There has also been the issue of finances, as some of the bright students have not been able to afford higher education at home due to the high cost involved. In some sub-Saharan African countries like Somalia and Southern Sudan, the issue of political instability has
forced most of the young population to seek opportunities for higher education in the developed world and subsequently file for asylum in the countries that accommodate them.

1.3 Research Objective

i) To establish the causes, effects (both positive and negative) of brain drain and how it contributes to globalization and the economic development agenda in Kenya.

ii) To determine the losses in investment that Kenya experiences from brain Drain

1.4. Value of the Study

This study attempts to offer solutions to the human capital flight that Kenya has experienced in the last few decades. In the wake of the high economic growth rate, Kenya will need to step up its role in training and retaining its young population to avert the crisis that brain drain can creates like shortage of relevant human capital. It would be catastrophic for Africa to import skills to meet its economic expansion while it can have the advantage of training its own people at a lower cost and get the benefit of employing them to run their home economies. This would in addition assist in creating employment for its citizens and curb migration.

The study also attempts to explore the benefits of brain drain and the positive impact it can have on the source economies. In examining these positive effects, the main channels
to be covered are remittances, human capital formations, diaspora effects on trade, FDI flows and technology adoptions among others. Since brain drain is not all negative, this study seeks to find ways on how the African economies can leverage on the benefits that arise as a result of brain drain. This however can only be positive if the advantages outweigh the disadvantages. This study therefore tries to establish where the balance is and seek to capitalize on the benefits.

A March 2008 paper by economists William Easterly and Yaw Nyarko says remittances to Africa are likely undercounted, but on average they are equivalent to 81% of the foreign aid received by an individual country. And secondly, the report suggests that a significant number of expatriates eventually return home to work, invigorated by exposure to global markets and ideas, and often charged with a mission to improve the lives of their compatriots. In summary therefore, the study seeks to investigate the question of whether brain drain is good for Africa or not.
CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

Though there are a number of studies discussing brain drain and its impacts theoretically, there are many fewer studies that actually try to estimate the impact of skilled migration on the home or receiving country. Within this limited literature, there are even fewer studies that look at specific African countries. Nonetheless, significant emigration of skilled capital from Africa over the last three decades has sparked researchers’ interest in the labor market experiences of these immigrants. Presently, the increased media attention on Africa’s lack of growth and the potential role of brain drain has also led to economic research on the phenomenon.

2.2. Theoretical Foundation

In the 1970s literature and early work dealing with brain drain issues using an endogenous growth framework both emphasized the negative effects for source countries. This pessimistic view was based on two major assumptions: either the before-migration stock of human capital was treated as exogenous to international migration (as in Wong and Yip (1999), who consider only domestic incentives) or when it reacts to the prospect of migration, the additional human capital ends up abroad (as in Haque and Kim (1995)). Under such circumstances, and notwithstanding possible feedback mechanisms, a brain drain can only be detrimental to the source economy.
In an attempt to investigate the contributions of brain drain and the contributions it generates to globalization and economic development, the research examines the theories of comparative advantage by David Ricardo and Absolute advantage by Adam Smith. The research examines these two theories in relation to labour to try and establish whether to encourage brain drain or not. In other words, the analysis of these two theories attempts to establish whether to encourage or discourage brain drain.

2.2.1. The Theory of Comparative Advantage

A country is said to have comparative advantage in the production of a good/service, if it can produce that particular good at a lower opportunity cost than another country. According to Ricardo, two countries with advantages in different areas are better off trading. In the context of brain drain therefore, richer countries offer more quality employment opportunities for skilled labor while, skilled labourers remaining in developing countries often face underemployment or unemployment. Migration across borders i.e. swapping workers for revenue balances these two forces. Some studies claim the world would add $39 trillion to global growth over 25 years if labour became truly mobile. (Mark Ethen, 2011)

2.2.2 The Theory of Absolute Advantage

When a country has a monopoly in producing specific products or when the country produces a product more cheaply than all other nations of the world it is said to have absolute advantage. Absolute products are mainly given by the nature. For example- South Africa produces diamond, Saudi Arabia and some Middle Eastern Countries
produce oil, gold etc. According to Adam Smith, a country has absolute advantage over others when it has the ability and capacity to produce more number of goods or services using the same amount of resources.

While it is easy to identify the ways in which brain drain can hurt economic development, the reasons that it may not be so bad, or may in fact be positive, are not so obvious. Yet, acknowledging and accounting for the positive spin-offs from highly skilled emigration is an important first step in getting to the bottom of the dilemmas brain drain poses. For a start, it is worth noting that some of the simplistic assumptions made about brain drain may not actually hold. For example, some of those who migrate return, often with greater skills.

Some of those who move from a developing country have received education elsewhere, subsidized by the host country or private means. By staying away after they finish studying, these students may not fulfil the potential contribution they could make to their countries of origin. However, the cost of their departure, at least in terms of the public purse in the sending country, may not have been large. In some cases, those who leave have been unemployed or underemployed at home, so their departure may not actually result in a huge loss to the sending country. For instance, the Philippine government continues to support its temporary contract-worker program so that unemployed, skilled workers can find work abroad.
In other cases, the departure of skilled workers is compensated for by the arrival of skilled workers from another country. As described in a special chapter in the OECD's Trends in International Migration the classic case of this domino effect is of South African doctors moving to developed countries while being replaced by Cuban doctors. At the theoretical level, economist Oded Stark and others have argued that brain drain may lead to positive results. Even in the poorest of countries (Cuba may well be a good example), the prospect of being able to emigrate may increase incentives to acquire education and skills and induce additional investment in education. When this domestic "brain gain" is greater than the "brain drain," the net impact on welfare and growth may well be positive.

In other words, even in the presence of a brain drain, the average education level of those who remain may be higher than it would have been without migration. While economist Maurice Schiff and others have shown that Stark's thesis is by no means proven beyond doubt, it is important to note that brain drain need not have negative impacts on a sending country's stock of education and skills.

In addition, it is important to understand that brain drain can only tell part of the story about migration's overall impact on an economy or society. When all the other impacts of migration such as remittances, inward investment, technology transfer, increased trade flows, and charitable activities of diaspora communities are taken into account, the net impact may actually be positive. As discussed below, there is a pressing need to develop a more comprehensive balance sheet that can take into account all of these factors.
2.3. Relationship Between Brain Drain and Globalization

In an economic context "Globalization" is the reduction or removal of barriers and borders in order to facilitate flows of capital, goods, services and also labour. Globalization is also the integration of economies and societies around the world. We therefore focus on the labour flows and more specific on the migration and flows of skilled labour. Globalization is not something new, but the technological and political evolutions after World War II have hastened this process.

While brain drain is not something new, its effects are much greater in a globalized world where skilled workers can freely travel the world. Many countries have restricted migration policies; but high-skilled well trained workers are often more than welcome and often even encouraged to go to the western world. There are many reasons for this skilled migration and the reasons to migrate may differ from region to region. Skilled workers living in Eastern Europe migrate to the USA or the EU because there are more career opportunities, salaries are higher and social security is better.

African migrants sometimes flee violence, poverty, political instability or corruption. While there are also highly skilled European academics working in the USA, the Far East or vice versa, the focus of this study is on the skilled migration from under-developed or developing countries to the developed world. Globalization offers both opportunities for amelioration of the pace of brain drain and the sources of additional pressures for emigration of skilled manpower from poor developing countries. The intensification of globalization has lowered the impediments to mobility of all forms of capital, accelerated
the standardization of knowledge requirements, made production by multinationals more foot loose, and enhanced the scope for private sector growth.

On the up side the phenomenal growth and easier mobility of private capital opens up opportunities for engaging professionals in their home countries and at higher returns based on increased productivity. This is by no means trivial, particularly, for countries in Africa, where most professionals have been engaged in the public sector at typically very low wages. Global knowledge sharing arrangements, through partnerships and networking, is also expanding the scope and capacity available to poor countries for production and more effective application of knowledge.

A particular development in the global production system is that of production sharing arrangements across countries by multi-nationals. They currently account for over 30 percent of global production (Lindbaek, 1997). Although such arrangements are still predominantly among industrial countries, increasingly developing countries are partaking in them, initially based on their low wage comparative advantage, raising opportunities for enhanced use of local skilled workforce.

The comparative advantage of low wage in developing countries, however, can be nullified by low productivity partly due to the scarcity of complementary professional skills. Although the wages per hour may be low, the wages per unit of output could be high due to low productivity. Surveys of investors show that labor is not cheap where productivity is low. Productivity in turn is influenced, not only by the quantity and
quality of capital stock, but also quality and quantity of know how (knowledge) (Lindbaek, 1997).

The emergence of a knowledge economy opens up new windows of opportunities for late comers to achieve faster productivity-based growth. This is partly because new technologies allow “leap frogging” for those countries that do not carry the inertia from the previous industrial structure (Perez, 1985). It has been shown that as major technological revolutions take place, developing countries that have positioned themselves to benefit from the “underlying technology” of the next long wave can catch up with rich countries, while those who lock themselves up in dinosaur technologies fall behind (Brundenius, 1996).

The challenge to developing countries, however, relates to the fact that information and microelectronics, the core of the knowledge economy, aids human mental effort. To meet this challenge poor countries have to position themselves well in terms of human competencies and capability of firms to work with this technological revolution. Opportunities for “leap frogging” and threats from marginalization are strong motivators for seeking and retaining knowledge.

2.4. Relationship Between Brain Drain and Economic Development

From a developmental perspective, the main concerns arise from the negative consequences of the net outflow of skilled and professional manpower from poor countries on growth and income levels. This is in addition to the unaffordable loss of the
considerable investment undertaken in generating these scarce skills. The traditional position on this issue treats brain drain as a negative externality imposed on the population remaining behind (Bhagwati and Hamada, 1974) in terms of both slower economic progress and living standards in poor countries. Loss of jobs for semi and unskilled labor force, and reduction in production and incomes result from inadequate supply of skilled and professional labor, which is a necessary complement to semi-skilled and unskilled labor in production (Piketty, 1997; Miyagiwa, 1991).

It is also argued that the poor source countries lose their potentially most enterprising and ambitious young population, stifling the development of the more dynamic private sector. More recent research on growth have strengthened the traditional position by showing that brain drain from a skill scarce poor country, leads to a permanent loss in growth and income levels (Haque and Khan, 1997; and Haque and Aziz, 1998). Brain drain reduces the growth rate of the effective human capital that remains behind in the economy and hence generates a permanent reduction of per capita income growth in the home country (Haque and Kim, 1995).

In a cross-country empirical study to determine the effect of foreign direct investment (FDI) on growth, (Borensztein, Gregorio and Lee (1997) tested the effect of the flow of FDI from industrial to 69 developing countries. The results, found that FDI had a larger impact on growth than domestic investment, on account of its higher productivity. This impact obtains only when there is sufficient capability in the host country to absorb complex technologies that comes with FDI. The robust complementary effect between
FDI and human capital obtains when the host country has a minimum threshold stock of human capital.

The skills lost through brain drain are not easily replaced given both the limited capacity of higher education and training capacity in developing countries and the paucity of the means for acquiring the same elsewhere. In a dynamic sense, brain drain can reinforce the limited ability to generate needed skills in poorer countries as it reduces their capacity to train a new generation of professionals.

The use of technical assistance through aid to fill capacity deficiencies in poor countries has often been targeted to alleviate short-term capacity shortfalls. In this form it often discouraged efforts to build and retain local capacity in government in the long term. Enclave project or program management systems, usually deployed through technical assistance to address capacity weaknesses in the public sector, have tended to engender psychological dependence on expatriate capabilities. This dependence has very often militated against capacity development for sustained self-management in these countries.

2.5 Empirical Studies and Knowledge Gaps

The first wave of economics papers on the brain drain dates back to the late 1960s and mainly consists of welfare analyses in standard trade-theoretic frameworks (e.g., Grubel and Scott, 1966, Johnson, 1967, Berry and Soligo, 1969). These early contributions generally concluded that the impact of the brain drain on source countries was essentially neutral and emphasized the benefits of free migration to the world economy. This was explained by the fact that high-skill emigrants often leave some of their assets in their
country of origin, which complements remaining high and low-skill labor (Berry and Soligo, 1969), as well as sending home remittances.

This and other positive feedbacks compensate sending countries for any real loss the brain drain may cause. From a broader perspective, these studies (especially Grubel and Scott, 1966) emphasize high-skill emigrants’ contribution to knowledge, an international public good, and disregard "outdated" claims on the alleged losses for developing countries.

The second wave comes less than a decade later. Under the leadership of Jagdish Bhagwati, a series of alternative models were developed in the 1970s to explore the welfare consequences of the brain drain in various institutional settings. Domestic labor markets rigidities, informational imperfections, as well as fiscal and other types of externalities (Bhagwati and Hamada, 1974, McCulloch and Yellen, 1977) were introduced to emphasize the negative consequences of the brain drain for those left behind. High-skill emigration was viewed as contributing to increased inequality at the international level, with rich countries becoming richer at the expenses of poor countries.

Finally, there has been a third wave of interest since the late 1990s. Based on the fact that the brain drain has both detrimental and beneficial effects for origin countries, its objective was to characterize the conditions under which the net effect on development and welfare is positive or negative. The contribution of the theoretical literature has been to show that under certain circumstances, the brain drain may ultimately prove beneficial
(but of course is not necessarily so) to the source country, and to do this while accounting for the various fiscal and technological externalities that were at the heart of the pessimistic models of the 1970s.

At the same time, thanks to the availability of new migration data, the various feedback effects emphasized in the early literature have given rise to an increasingly important empirical literature, further contributing to the emergence of a more balanced view of the brain drain. The main contribution of the recent literature, therefore, is that it is evidence-based, something which was not possible until recently due to the lack of decent comparative data on international migration by educational attainment.

Locally, researchers have looked at Kenya directly with regard to emigration experiences and outcomes. First, Nwachukwu (1997) examined the phenomenon of brain drain from Kenya, Ghana, and Nigeria to the United States, using a social opportunity cost model and a policy intervention model. Her results provided evidence that Kenya experienced a reduction in its national income due to the migration of its professionals. Ironically, she noted that in contrast to recent findings in Mexico, remittances did not make any meaningful reduction in the social opportunity cost of brain drain.

Another interesting finding by the author was that income earnings, which were expected to affect brain drain, turned out to be relatively ineffective in 118 Journal of Global Initiatives checking the outflow of professionals from Kenya. An important conclusion based on her policy analysis is that both monetary and fiscal policies are not effective
government policy instruments with which to check the outflow of professionals from Kenya as well as the other countries examined.

Therefore, other measures directed at altering attitudes and the choice selection process of individuals from this region should be critically looked at and pursued. Logan (1987) conducted an empirical investigation into the reverse transfer of technology (RTT) from Kenya and 16 other SSA countries to the United States between 1974 and 1985. RTT is another way of denoting the process of brain drain. He concluded based on his analysis that Kenya and Nigeria were the major contributors to RTT from Africa. He attributed this mainly to their large population sizes.

Okoth (2003) examined the role of the Kenyan diaspora for development. He highlighted trends in the diaspora over different decades and the hope for change and involvement of the diaspora in nation building in the then new government of Kibaki. The fourth paper that looked specifically at migration from Kenya was Macharia (2003). This paper considered migration in Kenya and its impact on the labor market. The author highlighted causes and consequences of migration in Kenya. He argued that such causes and consequences have had an impact on labor markets at both the place of destination (mostly urban areas) and to some extent rural agricultural settlements, especially during the colonial days in Kenya. This paper, unlike the other three, provides descriptive and theoretical, rather than empirical, arguments with regard to migration from Kenya.

Kirigia, Gbary, Muthur, Nyoni, and Seddoh (2006) was the first paper attempting to estimate the costs and benefits of the brain drain of health care professionals from Kenya.
The objectives of this study were to estimate the financial cost of the emigration of Kenyan doctors to the UK and the United States and also to compute the financial cost of the emigration of nurses to seven Organization for Economic Cooperation and Development (OECD) countries. The results from this paper are highlighted in the section on the social cost of brain drain.

This therefore is not the first research on the topic of brain drain but owing to the fact that Kenya has been ranked among the fastest growing economies in the world, it becomes necessary to continually evaluate the extent of human capital flight so as to keep tabs of how the country is faring in the various key sectors that affect the economy. Health care is a very critical sector in any economy as economic development would be compromised if the health of its citizens is not properly taken care of. This study therefore seeks to examine the current status quo in this particular sector.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction
This chapter describes the research methodology that was employed to conduct the research. The specific areas covered in this chapter include, the research design, the data collection method and the data analysis technique to be employed to generate the findings.

3.2. Research Design
The research design adopted was a case study of the African medical Brain Drain. A case study is an in depth investigation of individuals, institution or phenomenon. The primary purpose of a case study is to determine factors and relationships among the factors that have resulted in the behavior under study.

Qualitative case study methodology provides tools for researchers to study complex phenomena within their contexts. When the approach is applied correctly, it becomes a valuable method for health science research to develop theory, evaluate programs, and develop interventions. Using a variety of data sources. It allows the researcher to explore individuals or organizations, simple through complex interventions, relationships, communities, or programs (Yin, 2003) and supports the deconstruction and the subsequent reconstruction of various phenomena. This approach is valuable for health science research to develop theory, evaluate programs, and develop interventions because of its flexibility and rigor.
3.3. Data Collection

The study relied on secondary data. This data was obtained from the web and was useful in accessing information that organizations have published in their various websites both local and international. The secondary data was also collected by use of desk research techniques from archived sources, published reports and articles. The study focused on the investment in monetary terms that Kenya invests in training its doctors and the return on the same investment.

3.4. Data Analysis

The data collected was analyzed by way of empirical analysis. According to Sigmund (2013), data analysis is the application of reasoning to understand the data that has been gathered. Empirical research is research using empirical evidence. It is a way of gaining knowledge by means of direct and indirect observation or experience. Empiricism values such research more than other kinds. Empirical evidence (the record of one’s direct observations or experiences) can be analyzed quantitatively or qualitatively. Through quantifying the evidence or making sense of it in qualitative form, a researcher can answer empirical questions, which should be clearly defined and answerable with the evidence collected (usually called data).
CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Introduction

This chapter analyses the data collected and reports the results and a further discussion of the findings. It focuses on estimating the cost Kenya incurs to train a medical doctor and the loss of the return on the investment.

The costs of primary, secondary, medical and nursing schools were estimated in 2005. The cost information used in this study was obtained from one non-profit primary and secondary school and one public university in Kenya. The cost estimates represent unsubsidized cost. The loss incurred by Kenya through emigration was obtained by compounding the cost of educating a medical doctor and a nurse over the period between the average age of emigration (30 years) and the age of retirement (62 years) in recipient countries.

The public primary and secondary schools are heavily subsidized. For example, in 2003, Kenya decided to implement a free primary education policy in the entire country. Thus, use of fees charged in public schools would grossly underestimate the value of investment made by governments and society in general.

The religious mission schools levy fees just enough to cover fixed and variable costs, earning neither a profit nor making a loss. At the other extreme are the private-for-profit schools that aim at making super-normal profits. The latter schools distort the resource
allocation process because they reflect the overpricing of education production process. Therefore, among the three categories of schools, the fees charged by religious schools in Kenya were thought to be a closer reflection of the cost of primary and secondary education.

The primary school period is for eight years; and the secondary school is for four years. Their cost consists of tuition, lunch, transport, textbooks, stationery and uniforms. The tuition, lunch and transport fees levied by the mission schools aimed at covering the cost, not making a profit.

The nursing programme is made up of four years of training and one year of internship. The medical doctor programme consists of five years of training and one year of internship. The cost estimates were made up of unsubsidized tuition fees, accommodation and living expenses. The statistics on the number of Kenyan nurses working in OECD countries were obtained from the World Health Report 2006. The number of Kenyan doctors immigrating to various developed countries was obtained from Stilwell. The average total cost of producing a doctor (nurse) was obtained by summing up the average cost of medical school (and nursing school) and the average costs of primary and secondary schools. That gave an approximation of the total cost of training a medical doctor and a nurse as shown in Table 4.1
### 4.2 Cost of educating a student in Primary School

#### Table 4.1 Primary school cost per student

<table>
<thead>
<tr>
<th>Year</th>
<th>Tuition cost per year (Ksh)</th>
<th>Lunch cost per year (Ksh)</th>
<th>Transport cost per year (Ksh)</th>
<th>Cost of textbook+ stationary + uniforms (Ksh)</th>
<th>Sub-total costs (Ksh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>54 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>95 800</td>
</tr>
<tr>
<td>2</td>
<td>54 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>95 800</td>
</tr>
<tr>
<td>3</td>
<td>54 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>95 800</td>
</tr>
<tr>
<td>4</td>
<td>54 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>95 800</td>
</tr>
<tr>
<td>5</td>
<td>57 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>98 800</td>
</tr>
<tr>
<td>6</td>
<td>57 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>98 800</td>
</tr>
<tr>
<td>7</td>
<td>57 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>98 800</td>
</tr>
<tr>
<td>8</td>
<td>57 300</td>
<td>19 500</td>
<td>15 000</td>
<td>7 000</td>
<td>98 800</td>
</tr>
<tr>
<td></td>
<td>Total cost (Ksh)</td>
<td></td>
<td></td>
<td></td>
<td>778 400</td>
</tr>
<tr>
<td></td>
<td>446 400</td>
<td>156 000</td>
<td>120 000</td>
<td>56 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total cost (US$)</td>
<td></td>
<td></td>
<td></td>
<td>10 963</td>
</tr>
<tr>
<td></td>
<td>6 287</td>
<td>2 197</td>
<td>1 690</td>
<td>789</td>
<td></td>
</tr>
</tbody>
</table>

Notes: US$1 = 71 Kenya Shillings (Ksh). The statistics in this table represent unsubsidized cost.

<table>
<thead>
<tr>
<th>Year</th>
<th>Mission secondary school cost per student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>74 300</td>
</tr>
<tr>
<td>1</td>
<td>71 300</td>
</tr>
<tr>
<td>2</td>
<td>71 300</td>
</tr>
<tr>
<td>3</td>
<td>76 500</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>293 400</td>
</tr>
<tr>
<td>Total</td>
<td>4 132</td>
</tr>
</tbody>
</table>

Notes: US$1 = 71 Kenya Shillings (Ksh). The statistics in this table represent unsubsidized cost.

Table 4.3 Summary of educational cost and lost returns from investment

<table>
<thead>
<tr>
<th>Institution</th>
<th>Doctor</th>
<th>Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary school cost (US$)</td>
<td>10 963</td>
<td>10 963</td>
</tr>
<tr>
<td>Secondary school cost (US$)</td>
<td>6 865</td>
<td>6 865</td>
</tr>
<tr>
<td>Tertiary institution cost (US$)</td>
<td>48 169</td>
<td>25 352</td>
</tr>
<tr>
<td><strong>Total Cost (US$)</strong></td>
<td><strong>65 997</strong></td>
<td><strong>43 180</strong></td>
</tr>
<tr>
<td>Total cost compounded at an interest rate of 6.65% over 32 years (US$)</td>
<td>517,931</td>
<td>338,868</td>
</tr>
<tr>
<td>Total cost compounded at an interest rate of 5% over 32 years (US$)</td>
<td>314,472</td>
<td>205,750</td>
</tr>
<tr>
<td>Total cost compounded at an interest rate of 15.64% over 32 years (US$)</td>
<td>6,902,125</td>
<td>4,515,869</td>
</tr>
</tbody>
</table>

Notes: US$1 = 71 Kenya Shillings (Ksh). The statistics in this table represent unsubsidized cost.

4.3 Other losses from brain drain in Kenya

When health professionals emigrate, Kenya loses far more than the cost incurred by society to educate them. This is because there are several other losses that are not captured in the education-costing methodology. Some of those losses are:

**Loss of health services**

Health professionals (especially doctors and nurses) contribute to health promotion, disease prevention, diagnosis, treatment and rehabilitation. The ratios of doctors and nurses to the population in Kenya are very low, and, as a result, medical practitioners and nurses are usually overloaded with work. Thus, the emigration of doctors and nurses (and other health professionals) exacerbates the human resource shortage within the national and district health systems and reduces their capability to perform their functions (of stewardship, health financing, resource/input creation and health service production and provision) and achieve their goals of health improvement, responsiveness to client's legitimate expectations and fairness in financial contributions.

**Loss of supervisors**

Practising doctors and senior nurses normally play major roles in supervising staff in peripheral facilities (e.g. health centres, dispensaries and health posts) that serve the majority of populations. Thus, when such doctors and nurses emigrate, the supervisory capability is lost (or diminished), contributing to further weakening of the capacities of such health facilities to provide quality services to patients. This compels the staff left
behind to assume greater responsibilities than they had been trained for, invariably leading to a decline in the quality of health services.

**Loss of mentors for health sciences trainees**

Practising doctors (and senior nurses) train and counsel (advise) new employees and students doing their internship. The emigration of either cadre has negative inter-generational effect on the process of health-related human capital creation in the country.

**Loss in functionality of referral systems**

The hierarchical national referral system consists of tertiary hospitals (apex), provincial hospitals, district hospitals, health centres, dispensaries, health posts and community services. It permits movement of patients from the base of the national health system to the apex and vice versa. Although the movement of patients should, in principle, be initiated by health professionals, in practice, patients move themselves up and down this system. Patients bypass the cheapest health units (health centres, dispensaries and health posts) mainly due to lack of doctors and diagnostic services. Those two factors create adverse incentives for patients to bypass the cost-effective health units and to seek care in more expensive hospitals. Thus, emigration of doctors contributes to inefficiency and weakening of the referral system.

**Loss of role models**

Children often view doctors and nurses practising in communities as examples to be imitated and emulated. Thus, external migration not only robs such children of positive
role models, it also negatively affects their dreams and aspirations and hence the number of children aspiring to become health professionals.

**Loss of public health researchers**

Many of the specialized doctors who emigrate are often among the very few active/published researchers that the country has. Emigration of such people stifles innovation and invention in persistent local public health problems, e.g. HIV/AIDS, tuberculosis and malaria.

**Loss of custodian of human rights, especially in rural areas**

A recent study on the status of national health research bioethics committees in the WHO African Region found that many countries did not have functional ethical review systems that protected the dignity, integrity and safety of citizens who participated in research. Authors argued that health professionals who were posted in rural areas, by virtue of being the most educated, often bore the burden of assuring that the human rights of their actual and potential clients were respected and protected in the course of their clinical work and research carried out by others.

**Loss of savings (investment capital)**

In Kenya, health professionals are among the relatively better-paid persons, and thus they contribute to accumulation of national savings. Those savings are eventually loaned to entrepreneurs for investment. Thus, emigration may lead to loss of such savings, except where persons who emigrate remit their savings back to the country for investment.
Loss of entrepreneurs

The health practitioners, by virtue of their education and earnings, quite often set up health-related (e.g. private clinics, hospitals, pharmacies) and non-health-related businesses (e.g. retail and wholesale shops). Thus, emigration reduces the growth of entrepreneurship in affected countries and the prospects for economic growth.

Loss of employment opportunities

Doctors and nurses usually provide job opportunities for housekeepers, gardeners and security guards at their places of residence. Thus, emigration of practising health professionals usually results in loss of employment opportunities and income for those poor workers and their families.

Loss of tax revenue to government

Given the fact that health professionals are among the relatively well-paid persons in Kenya, they are also major contributors to the country's income-tax collection. Since the incomes of emigrants are not liable to tax administration systems of Kenya, emigration leads to a net loss in tax revenues.

Disruption of families

In some instances, due to immigration restrictions, the emigrating health professionals are not allowed to take along their families. Due to spatial distance and loneliness, some of those emigrants may choose to get new marriage partners in their countries of work. This
may bring psychological and economic suffering to family members left behind in Kenya.

'Internal' brain drain

The brain drain, broadly construed, not merely reduces the supply of vital health professionals in Kenya, even more seriously, it diverts the attention of those who remain from important local problems and goals. These include provision of primary health care services (including health promotion and primary and secondary prevention of diseases) and promotion of problem-oriented training and research on important domestic public health issues. Such needs are often neglected as training and research get dominated by rich-country ideas as to what represents true professional excellence. Those highly educated and skilled Kenyan health professionals who do not physically migrate to developed countries 'migrate intellectually' in terms of the orientation of their activities.

Loss of an important element of the middle class

Arguably, physicians comprise an important segment in the social and economic make-up of the middle class. They are generally respected as being above corruption, they advocate for quality public schools, they provide a market for consumer goods, and they contribute to political, social and economic stability. Furthermore, they create demand for democratic institutions.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This chapter aims at giving a summary of the study, its conclusion and recommendations.

5.2 Summary
The cost of tertiary education of a single doctor in Kenya is approximately US$ 48,169. The total cost of secondary education per student is US$ 6,865 and that for primary education US$ 10,963. Thus, the total education cost per medical doctor is US$ 65,997 (i.e. US$ 48169+US$ 6,865+US$ 10,963). That figure does not represent the loss incurred by society as a result of emigration of a single medical doctor. The real loss is the cumulative dollar value of the investment made by the Kenyan society in producing a doctor who decides to emigrate for a certain period of years.

Let us assume that the average age of emigrating doctors is 30 years, the average statutory pensionable age for Europe and Americas is 62 years; an emigrant doctor would work for 32 years before retirement; and the current average interest rate on fixed deposits in Kenya is 6.65%. If the amount of US$ 65,997 (i.e. cost of educating one medical doctor) were put into a commercial bank for a period of 32 years at a fixed deposit interest rate of 6.65% per annum, the investment will grow to US$ 517,931. This is obtained by applying the standard compounding formula: 

\[ (\text{initial investment}) \times (1+r)^t \]

\[ = [\text{US$ 65,997} \times (1+0.0665)^{32}] \]. Therefore, on average, for every doctor that emigrates, a
country loses about US$ 517,931. The economic loss incurred by Kenya as a result of the brain drain of 167 medical doctors is US$ 86,494,477, i.e. 167 doctors × US$ 517,931 per doctor.

5.3. Conclusion
Developed countries continue to deprive Kenya of millions of dollars worth of invaluable investments made in the production of health workers. If the current trend of poaching of the scarce human resources for health (and other forms of human resources) from Kenya is not curtailed, the chances of achieving the Millennium Development Goals would remain dismal.

Economic arguments notwithstanding, ultimately the price of emigration of human resources for health from Kenya to developed nations is paid in unnecessary debility, morbidity, human suffering and premature death among Kenyan people. This unacceptable situation should be urgently reversed through joint action by both developing and developed countries.

5.4. Recommendation
I would recommend that the government takes the issue of brain drain seriously given its grave consequences and begin to curtail its courses. Kenya being one of the fastest growing economies will continue to require young and energetic professionals to work in the various sectors of the economy. The government must therefore see to it that it does its best to prevent human flight to other countries.
5.5. Areas of further Research

The following aspects are in need of further research:

(a) Monitor the trends of the effects of loss of health services as a result of external migration of key cadres of human resources for health, such as specialist doctors and nurses, pharmacists and lecturers of medical and nursing schools.

(b) Establish a database of cost of primary, secondary and tertiary education of various categories of human resources for health, and cost of alternative strategies for stemming the tide of brain drain.

(c) Establish a programme for systematic monitoring of international migration of different cadres of human resources for health and tracking of remittances of income.

(e) Identify the determinants of health staff motivation, including their health-related quality of life and retention through regression analysis.
REFERENCES


