ALIGNING POLICY GOALS AND OUTCOMES IN DEVELOPING HUMAN CAPITAL: A CASE STUDY OF THE RIVERS STATE OF NIGERIA OVERSEAS SCHOLARSHIPS PROGRAMME

BY

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DEDICATION

I dedicate this work to the memories of my late mother, Mrs Matilda Dubia Poi, who always "knew" I could do it and my late sister, Mrs Cecilia Daada Giami (nee Poi), who wanted to study for a PhD too but death didn’t let her join me. We did it Sis!
ABSTRACT

Developing countries often use government-funded overseas scholarships to build some of their human capital abroad in order to fill skills gaps at home. Most of these developed skills however do not return home thereby ostensibly defeating the purpose of the programmes. There is also a dearth of quantifiable outcome targets to objectively assess the achievements of these schemes. The Rivers State government of Nigeria set up one such government-funded overseas scholarships programme in 2008. This study is an empirical assessment of the relative success of the Rivers State overseas scholarships programme. The study examines the extent to which the outcomes were aligned with its policy goals. Five research objectives and seven hypotheses were postulated for the study. The population was the 1,298 students who had travelled abroad to study and should have graduated and returned by 2015. It adopted a quantitative research approach using descriptive statistics and binary outcome regression techniques on secondary data. The study found that 89% (1,152) of the 1,298 had successfully graduated and 37% (485) had graduated and returned home. Age, successful graduation, immigration policy and level of award were statistically significant predictors of their likelihood to return home. The study concludes that the programme was relatively successful in developing the human capital of the individual students of Rivers State but not too successful in developing human capital for the State because majority of the students did not return home to add to the manpower pool. It recommends the continuation of the programme but that policy goals should be quantified as key success factors and the successfully graduated students should be incentivised to return home through creation of job opportunities at home and signing return home agreements with study destination countries. These measures should engender the chances of developing human capital for Rivers State.
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Many developing countries build some of their human capital overseas using government-funded scholarships to achieve their policy goals of human capital development in specific areas of skills and expertise where they lack internal capacity and know-how to do so at home. Another benefit of sending students to study abroad is that these students are exposed to other international cultures, values and practices which they imbibe and can bring back home from abroad. According to the Organization for Economic Cooperation and Development (OECD) and the International Bank for Reconstruction and Development (IBRD) reports, countries and organisations use studying abroad to fill skills gaps in their domestic manpower needs (OECD and IBRD/World Bank, 2010; British Council and German Academic Exchange Services -DAAD, 2014; Perna et al., 2014, Perna et al., 2015).

In general, human capital development (HCD) refers to the acquisition of skills and knowledge through education and training (Schultz, 1961). Human capital formation is a subset of human capital development and it involves acquiring and increasing the number of persons with the critical and requisite skills and education needed for a nation's economic development (Harbison, 1962; Harbison and Myers, 1964). Human capital can be developed at an individual (micro) level or at a national (macro) level. Its relevance lies in its potential benefit for macroeconomic productivity. It can also impact on income distribution. An individual or a nation’s investment in education could lead to higher productivity and earnings as well as significant social rates of return with benefits for the wider society. There is also a spill over gain of investing in education to other sectors of the economy (Wilson and Briscoe, 2003; Okojie, 1995; Aluko and Aluko, 2012).
Human capital grew out of the economics discipline and it came to prominence in the late 1950s and early 1960s through studies by Schultz (1960) and others (Becker, 1962; Mincer, 1981). Schultz (1960) formally labelled the consequences of investment in education as human capital. Central to human capital theory is that investment in individuals improves their capacity and so determines their earning power and positively impacts on their productivity (Schultz, 1961; Becker, 1962; Mincer, 1975; Perna et al., 2015; Psacharopolous and Patrinos, 2004; Joshua, 2015). Prior to the 1960s, classical economic theorists had long recognised the economic production process to be a function of only land, labour and capital (Smith, 1776, cited in Chigbo, 2014). In this classical economic production model, human labour used capital assets on land resources to create wealth for the nation.

In a landmark study of productivity and growth of the USA economy, Schultz (1960) calculated the value of the inputs and outputs in the economy and found that the three traditional factors of production alone could not account for all the wealth created and observed in the USA economy. He ascribed the unexplained increase in the national income to human capital and concluded that education is an investment in man and has a value different from the other factors of production. The consequences of this investment in education can be treated as a form of capital. This clearly distinguished the human capital factor (brain power) from the raw labour resource factor (brawn or physical power) under the Adam Smith’s classical economic production model. The studies by Schultz (1960), Becker (1994) and Mincer (1975), in particular, have since established a strong link between human capital development and education. Indeed, most of the later studies in human capital development now acknowledge that education is a critical component in human capital development. Many countries therefore invest in and formulate education policies and strategies to develop their human capital for economic growth in order to achieve competitive advantage (Malaysia Master Plan, 2010). Policies and strategies are now
formulated for human capital development including measures aimed at increasing the stock of a nation's human capital through higher numbers of pupils enrolled in school; average years of schooling, quality standards and processes and establishing educational subsidies such as scholarships to achieve their various goals. The question is not therefore whether to develop human capital but the efficacy of developing human capital.

Formal education is, however, only one approach to developing human capital. Other approaches include nurturing innate human abilities, healthcare and healthy living, societal relationships and vocational training. Human capital development therefore goes beyond just education. The United Nations, through its United Nations Development Programme (Human Development Report - HDR, 2015), recognises health as a component of human capital. Both health and education are important in the development of human capital because an educated population requires good health to be an effective workforce just as a healthy workforce requires education to be effective and efficient in productivity.

With regard to using overseas scholarships (also called study abroad scholarships) to develop human capital, Perna et al., (2014) posited that the practice of obtaining education abroad, particularly higher education, has been common in developing countries for decades. In the colonial era, for example, the colonial masters used study abroad to educate potential future leaders of their territories. In those days, the students would usually be sent abroad to study in the colonising authorities home countries. The expectation was that they would imbibe the colonial masters' values, cultures and philosophies and return home to help administer their homelands with those values. It would appear therefore that the objective of studying abroad was much more than just acquiring mere skills and capacity for development but mostly as a means to continue the enslavement of the colonies and to retain social control (Goodwin, 1993; Varghese, 2008; Cummins, 1993). Also, during the cold war period, countries sent their students on overseas scholarships to cold war enemy countries in order to
learn more about them and to counteract some of their influences and ideologies (Perna et al., 2014; Varghese, 2008).

Nigeria was a colony of the British Empire until 1960. It can safely be assumed therefore that her experience of the “benefits” from the empire-led human capital development programmes would have been similar to other colonies. However, she would have assumed responsibility for her own human capital development after she gained independence in 1960. Expectedly, the development would still have been influenced by the colonial masters at the early stages after independence. Like many other developing countries, to date, Nigeria still seeks to fill her skills gaps through education abroad in disciplines where she lacks internal capacity and expertise to do so at home. Nigeria is a federation of 36 states and a federal capital territory. In addition to the efforts by the federal government level, each state government can also sponsor students to study abroad in order to fill its own internal skills deficiency. The background to the formation of states in Nigeria is that a civil war broke out in Nigeria in 1967 and as part of a strategic prosecution of the war to weaken the secession threat the country was divided into 12 administrative states (Davies et al., 1995). Rivers State was one of the original 12 states. Further restructuring of the states for the purposes of national and regional developments later led to the current 36 States and a Federal Capital Territory; the national capital. Within a national education and development framework, each state can develop its own education policies, strategies and curricula. They can therefore set, implement and monitor their own budgets and targets for this and, indeed, other purposes.

Statistically, a national census conducted in 2006 put Nigeria’s population at over 140 million with Rivers State at 5.2 million - 3.7% (National Population Commission - NPC, 2012). The USA Central Intelligence Agency (CIA World Factbook, 2013) estimated Nigeria’s population in 2013 to be over 174.5 million and the estimate for 2016 is 193.3 million (National Bureau of Statistics - NBS, 2016). The literacy level in 2010 was 56.9%
nationally and 72.8% for Rivers State (NBS, 2010; United Nations Educational, Scientific and Cultural Organization - UNESCO, 2012). This literacy rate statistic shows that both Rivers State and the country need educational enhancement and development. However, due to the challenges of funding and quality standards in the education sector and the lack of infrastructure and internal capacity in Nigeria, some of the human capital developments need to take place abroad or through importing the expertise into the country.

At the national level, efforts to develop human capital over the years have included large government expenditures on education. Even so, the expenditure level in 2012 was 8.34% of the nation’s budget - Central Bank of Nigeria (CBN, 2010); this was 17.66% short of the 26% recommended for Nigeria by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2012). Such low education funding levels impact adversely on teaching methods, industrial disputes and administrative challenges, adequacy of information and communication technology (ICT) infrastructure and sufficiency of funding. With regard to public funding of the education sector in Nigeria, Oluwatobi and Ogunrinola (2011) and Obi and Obi (2014) found that the levels of research and development, the nature and adequacy of infrastructure, adequacy of teaching aids and quality of teachers have all been negatively impacted by the insufficient funding of education and have therefore added to the impediments to Nigeria’s capacity to build a critical mass of human capital. They also found that this low level of funding of the education sector has also impacted adversely on the ability to cultivate the kinds of people that can serve as agents for the country’s economic development and growth. As if to vindicate these findings, in 2014, the United Nations Human Development Index (HDI), which measures a country’s level of development, ranked Nigeria 156 of 187 countries in the world (HDR, 2015).

Not surprisingly therefore, individuals as well as organisations and various arms of national and state governments within Nigeria seek to mitigate the impact of some of these challenges by going overseas to study in order to develop their human capital. While these
internal challenges and deficiencies may not be the publicly stated reasons that are given for going abroad to study, the policy goals and objectives of the scholarship schemes imply them because the countries to which the students are sent are considered to have better quality and standards of educational infrastructure and content than Nigeria.

It is against this backdrop that the Rivers State Government of Nigeria established and funded a Rivers State Overseas Scholarships Programme (RSOSP) in 2008 to educate its citizens in tertiary institutions abroad in order to fill perceived gaps in some critical areas of need in Rivers State. This scholarship programme was specifically tenable abroad only. The Rivers State Sustainable Development Agency (RSSDA) Policy and Procedures Manual (2013, p.136) states that –The overarching goal of the scholarship programme therefore is to build a qualitative highly-skilled human capital base that will give Rivers State youths the national and global edge and head-start in specialized areas of employment for the overall development of the State. It is also aimed at providing opportunities to channel the high potentials of Rivers youths to productive endeavours and to contain or reduce youth restiveness‖.

The critical areas of need were identified as:

1. Medicine and medically related fields
2. Engineering (all areas)
3. Natural Sciences (Geology etc.)
4. Information and Communications Technology (ICT)
5. Social Sciences (Law and Economics)
6. Urban and Regional Planning – a later addition

The original plan was to send students to only the economically and educationally developed countries. It began therefore with sending students to the UK in 2008 and added Canada in
2009. However, due mainly to cost considerations the study destination countries were later expanded to include some developing countries. By 2015, for example, the study destination countries had increased to twelve (12) adding a country like India which, judging by her Human Development Index - HDI (HDR, 2015), is rated as a developing country. India however has a very high level of technical and academic expertise in ICT, Engineering and Medicine and was therefore added to the study destination countries along with other countries like the USA, Hungary, Czech Republic, Singapore, Ukraine, China, Ireland and St. Vincent and Grenadines.

The input target was 300 overseas scholarships awards each year at both undergraduate (UG) and postgraduate (PG) levels. Between July 2008 and October 2015 (the period covered in this study), over 2,000 overseas scholarships had been awarded. Most of the recipients had travelled abroad and undertaken their studies while some were yet to travel. Of those that had travelled, the vast majority had graduated and some had returned home with some graduating but not returned home. The others had either failed out or were still at various stages of their studies.

The programme had well established processes and procedures for awarding the scholarships. The process was open and transparent and had gained credibility over the years. There were two routes for selecting the recipients. The first route was to constitute 70% of the 300 annual awards and required passing an aptitude test as well as an oral interview conducted by an external independent panel of academics and experts. This was called the “Merit” selection criterion. This labelling is somewhat misleading however because both selection criteria had minimum academic requirements. The second route was to constitute 30% of the total awards and was known as the “Protocol or Concession” selection criterion. This route was through government nomination even though they still had to also meet the minimum academic entry qualifications but did not require further aptitude tests and interviews. The minimum academic requirement for all candidates was at least five credits at
Secondary School Certificate (West African School Certificate (WASC) or the General Certificate of Education (GCE) Ordinary Level equivalent).

For the purposes of this study, the policy goals shall mean the planned targets or stated purpose of the government-funded overseas scholarships programme and the outcomes shall mean the results or achievements of the programme. Relative success shall therefore represent the extent to which the schemes achieved (outcomes) their planned targets (policy goals).

1.2 Statement of the Problem

Despite the long history of government-funded overseas scholarships there is very little verifiable and quantitative data as well as information on the achievement of their policy goals. A review of extant literature indicates that there are very few studies of the relative success (or indeed failures) of government-funded overseas scholarships programmes in achieving their policy goals. The British Council and the German Academic Exchange Services-DAAD (2014) conducted an empirical review of the rationale for the governments of eleven countries (Brazil, China, Egypt, India, Indonesia, Kazakhstan, Mexico, Pakistan, Russia, Saudi Arabia and Vietnam) sponsoring students abroad. The study found that, except for the numbers of awards (inputs), the destination countries of study and their fields of study, gaps existed in all other areas in terms of documented proofs of the quantifiable outcomes (results or achievements or outputs) of these programmes. In the most part, the programme operators reported “feel good factors” as their achievements. In general, there was an absence of sufficient data and information to quantitatively and objectively assess the achievements (outcomes) of these government-funded overseas scholarship programmes.

Other studies by Perna et al., (2014, 2015), Celik (2009) and Chen (2013) also found these gaps in the reporting of the achievements of other government-funded overseas
scholarships programmes. The absence of data and information raises some very pertinent questions about the performances and achievements of policy goals of these programmes particularly for developing countries trying to build their capacity for economic growth and development. Governments and policymakers need to know whether to start new schemes, continue current ones, remedy any defects or terminate some of these overseas scholarships programmes that are not doing well based on objective and quantifiable outcomes of whether the programmes are on track in meeting their policy goals or not.

1.3 Research Motivation

The research motivation for this study is therefore to contribute to filling some of these gaps by empirically analysing and assessing the relative success of the Rivers State Overseas Scholarship (RSOSP) scheme in achieving its policy goal of using a government-funded education incentive, such as overseas scholarships, to develop its stock of human capital. The policy goals and objectives as set by the decision-makers are accepted as given without examining the process of how they were set. The emphasis is on whether or not they have been achieved.

1.4 Aim and Objectives

The research aim is to analyse and assess the relative success of developing countries using government-funded overseas scholarships programmes to build human capital. The case study for this is the Rivers State Overseas Scholarships programme. The following five (5) research objectives are formulated in order to achieve this aim.

Objective 1

to review the extant literature on human capital development and in particular the use of scholarships, as a tool for its development. The review will cover human capital theories, how they have evolved, the importance of human
capital in relation to economic productivity and its link with education. It also includes an empirical review of the achievements of some established government-funded overseas scholarships programmes.

**Objective 2**

to analyse the rate of successful graduation of recipients of the Rivers State Government-funded overseas scholarships;

**Objective 3**

to identify the factors that determine the success or not of the Rivers State Government-funded overseas scholarship programme;

**Objective 4**

to ascertain the rate of return home from study abroad on the Rivers State Government-funded overseas scholarships programme; and

**Objective 5**

to account for the factors that influence the likelihood of returning home from study abroad on the Rivers State Government-funded overseas scholarships programme.

1.5 **Research Questions**

The main research question is how successful are overseas scholarships in developing human capital for developing countries? The sub questions helping to answer the overarching question are:

a) What is the applicability of human capital theories and what empirical findings exist in extant literature on using overseas scholarships to develop human capital particularly for developing countries?
b) What is the rate of successful graduation of recipients of the Rivers State Government-funded overseas scholarships?

c) What are the factors that determine the success or not of the Rivers State Government-funded overseas scholarship programme and why?

d) What is the rate of return to the home country after graduation on the Rivers State Government-funded overseas scholarships programme?

e) What factors influence the recipients of the Rivers State Government-funded overseas scholarships to return home and to what extent do these factors account for the likelihood of returning home?

1.6 Research Hypotheses

The following seven (7) null hypotheses have been formulated in order to guide the study:

H₀₁: The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with gender (GD – male or female) of the awardees.

H₀₂: The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with age (AG – younger or older) of the awardees.

H₀₃: The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with selection criteria (SC – merit or protocol) of the awardees.

H₀₄: The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with successful graduation (SG – graduated or not graduated) of the awardees.
**H₀₅:** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the immigration policy of the study destination country (IPDC — strict or liberal) of the awardees (IPDC is proxied by immigrants’ tolerance level index of the country – ITLI).

**H₀₆:** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of development of the study destination country (LDDC — developed or developing) of the awardees (LDDC is proxied by Human Development Index of the country – HDI).

**H₀₇:** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of the awards (LA – undergraduate or postgraduate) of the awardees.

### 1.7 Significance of the Study

This study has significance for any audience interested in the efficacy of developing countries using government-funded overseas scholarships for the formation and development of their human capital. In particular:

a) Governments and Policy makers, especially in developing countries who set up overseas scholarships programmes with a view to filling skills shortages at home for their economic growth and societal development. They would be responsible for the setting of policy goals possibly using key policy goal indicator approaches suggested in this study.

b) Practitioners who implement the government policies and key aspects and considerations to ensure that they achieve the policy goals as set by the policy makers. They would be delivering the outcome targets and ensuring that they
are aligned with the policy goals and the internal monitoring and evaluation of progress of the programme.

c) Academics, Researchers, Advisers, Auditors and Consultants who would be asking pertinent questions and making comparisons as well as using the data and information for monitoring and evaluating studies and benchmarks for other similar programmes.

1.8 Scope of the study

The geographical location of the study is the Rivers State of Nigeria and in particular the specific government-funded Rivers State Overseas only Scholarships Programme (RSOSP) set up in 2008 and administered by the Rivers State Sustainable Development Agency (RSSDA). With respect to subject contents, it is recognised that human capital emerged from the economics discipline but it is now widely practised in many other fields such as organisational management, personnel management and sociology (Tan, 2014). This study is however constrained to the research objectives stated under section 1.4 above and thus deals only with the formation and accumulation of the stock of human capital. In particular, the following areas are outside the confines of this study:

a. The health component of human capital – The United Nations, through its Human Development Programme (HDR, 2015), identifies education and health as components of human capital. Appleton and Teal (1998), also describe health and education as components of human capital that are contributors to human welfare thereby recognising them as two closely related human capital components that work together to make the individual more productive. Furthermore, according to Lawanson (2009), neither of the health or education components can be considered to be more important than the other. Anyanwu et al., (1997) posited that health is just as important as education because it connotes the ability to lead a socially and
economically productive life. A healthy and educated populace will be highly productive and have the tendency to apply a degree of sophistication in the production process. All of the above notwithstanding, this study only covers the education component of human capital.

b. Cost and Benefit Analysis – There are several ways in which to measure the investment in human capital. Kwon (2009) listed three conventional methods namely: output-based approach using schooling (education); cost-based approach using the costs of investment; and income-based approach using returns on the investments from marketing the labour. This study is not concerned with the second and last methods of measurement but only with the formal education approach.

c. Policy impact assessment – Traditionally, evaluation studies have been concerned with the final impacts of programmes. In this case, for example, an impact evaluation or assessment study would assess the final impact of the successfully graduated and returned home of beneficiaries and whether they have been engaged on return home. This study does not extend to the endpoint of the use of the degrees obtained but concerns itself only with the successful graduation and return home of the recipients from their study abroad.

d. Human Resource Management (HRM) – While both human capital development and human resource management are about people, this study is concerned with a macro level accumulation of stock of human capital as distinct from more direct and narrower management and training of staff and personnel issues which are related to organisational development such as recruitment, staff training and promotion and payroll issues usually covered in human resource management within an organisation.

e. Human migration mobility (Brain Drain) – Ghosh and Ghosh (1982) identify brain drain as the migration of high quality manpower usually from developing to developed countries. The general mobility of labour is a much broader aspect of human capital mobility than what is covered in this study. In general, brain drain
includes human capital that may have been developed within a country before migrating abroad. This study is constrained to only the human capital that has been developed from study abroad but did not return home afterwards. Furthermore, Ghosh and Ghosh (1982) also discussed the importance and socio-economic impact of remittances and repatriations of funds home from the skilled workforce that migrated from home. These potential benefits from remittances home from abroad are not within the scope of this study and therefore not covered.

1.9 Organisation of the study

The thesis is organised into eight chapters. Chapter 1 is the introduction chapter and covers the background to the study, the study motivation (or statement of the problem), aim and objectives, research questions, research hypotheses, significance of the study, delimitation and organization of the study. Chapter 2 is a review of extant literature of the two principal components of this study – human capital and government-funded overseas scholarships. The focus of the review of human capital is on the theories and framework including definitions, importance, economic productivity and growth model as well as the relationship and link with formal education. It also contains a review of the empirical evidence of the policy goals and outcomes in practice of some developing countries that have used government-funded overseas scholarships to develop their human capital. The emphasis of the review of the policy goals and outcomes of these schemes is to identify their planned outcomes and whether or not they have been achieved. Chapter 3 reproduces the policies, procedures, processes, administration and management of the Rivers State Overseas Scholarship Programme (RSOSP) to give a general understanding of the scheme and put it in context for this study.

Chapter 4 details the conceptual framework of the study variables and the functional relationships between the dependent and independent variables and their justification. The research hypotheses of the study are also formulated in this chapter using a binary outcome approach of more or less likelihood of the occurrence of an event. Chapter 5 is the research
methodology chapter and presents the research design, the explanatory and quantitative approach to the study as well as the sources of the data, their reliability and the mode of data collection. In addition, the model showing all the variables of interest are specified and the method of data analysis are also explained.

Chapter 6 presents the data analysis and findings of the study using descriptive statistics of percentages and frequencies and also binary logit regression analytical technique for testing the hypotheses of the study. Chapter 7 is the penultimate chapter of the thesis and it discusses the study findings in relation to the research aim and objectives, research questions and tests of the hypotheses especially the extent to which the outcomes of this government-funded overseas scholarships programme are aligned with its policy goals. The study ends with Chapter 8 which presents the summary of the report, the implications of the major findings of the study and conclusion. It also contains the recommendations, the limitations of the study, the suggestions for further research and, very importantly, the contribution of this study to knowledge.
CHAPTER TWO

LITERATURE REVIEW

This chapter reviews the human capital theories and framework as well as the empirical literature on the use of government-funded overseas scholarships to develop human capital. The first section of the review examines the extant literature on human capital concepts, definitions and importance. It also covers human capital theories and the related framework recognising that human capital development is not an end in itself but a means to achieving an end which can be at an individual (micro) or national (macro) level. A review of the role of formal education in human capital development and how countries have developed strategies and implemented education policies to attain human capital development are also covered in this section.

The second section is the review of the empirical evidence of government-funded overseas scholarships established by some developing countries in order to develop some of their needed human capital. The emphasis of this empirical review is on the identification of the policy goals and purposes of these government-funded programmes and whether the outcomes that they achieved matched their policy goals (the purposes for which they were established) as intended by the policymakers. The aim is to identify their policy goals and whether they were achieved (outcomes) and try to relate them to this study. The chapter ends with a summary of the findings of the literature review identifying the gaps in the extant literature in the areas relating to this study.

2.1 Theoretical Literature

2.1.1 Concept and Definitions of Human Capital

The concept of human capital dates back to at least the eighteenth century when Adam Smith (1776) incorporated the notion of labour specialisation as a factor of production
along with land and capital. Adam Smith referred to apprenticeship, education, skills and experience of labour in the production process (Goldin, 2016; Shobande et al., 2014). Several other scholars, for example, Alfred Marshall in 1898 and Karl Marx in 1883 also referred to labour and human beings in their writings on the economic productivity models although attaching different degrees of importance to it in the production process (Shobande et al., 2014). Goldin (2016) also referred to scholarly articles by Fisher in 1897 in which he mentioned living capital as opposed to dead capital in reference to the contributions of human labour distinct from capital and land resources in the production process. All these studies point to earlier studies on what was to later become formally labelled as “human capital”. Thus, human being as a labour factor in the production process has long been recognised in neoclassical economics. However, this was in its raw form and the model did not place much value on the skills attributes of labour (brain) but concentrated on its raw physical strength (brawn) in economic productivity. This has since been identified as a major defect in the conventional economic productivity models.

In the late 1950’s and early 1960’s, researchers found that the neoclassical economic model of production no longer accounted for the total monetary value of the productivity of the USA economy (Schultz, 1960, 1961; Becker, 1962). There was a difference in expectations after taking into account all the conventional land, labour and capital factors of production. This realisation led to the birth of human capital which then gained prominence as a “residual component” that was unaccounted for and therefore missing from the neoclassical economic production model. Schultz (1961) went further to identify five categories of developing this human capital:

a) Provision of health facilities which affect the life expectancy, strength, vigour and vitality of the people;

b) The provision of on-the-job training which enhances the skill of labour force;

c) Improving education at the primary, secondary and higher levels;
d) Enhancing the study and extension programmes for the adults; and

e) Provision of adequate migration facilities to individuals adjusting to better job opportunities.

Interestingly, developing human capital through adequate migration facilities as suggested above by Schultz would suggest that an already developed human capital could be attracted inwards from external sources rather than developing one’s own human capital. As such, highly educated and skilled individuals from other parts of the world could be attracted with the right packages and favourable immigration policies to move to another country and form part of their stock of human capital pool. This could potentially be a cost-effective way to “accumulate” the stock of required highly-skilled workforce for a nation in the areas where they are deficient in the number of persons needed or in the areas of skills or expertise. However, while this human capital acquisition through labour migration method (brain drain) is a related field, it is not the focus of this study.

The literature reviewed did not reveal any one single definition of human capital. Instead, there is a plethora of descriptions rather than actual definitions. Perepelkin et al., (2016) alluded to the lack of unity by researchers in interpreting and seemingly formulating their own definition of human capital. They stated that “human capital expresses economic relations between his owner and a consumer of provided labor services” (p. 7654). Jhingan (2005) posited that some researchers, especially economists, look at it from just an education viewpoint whereas others add health to the education component. This multiplicity of definitions is perhaps a recognition that although human capital originated from economic studies it has since expanded into other disciplines such as human resources, sociology, education, health, etc. Each discipline tries to find a description or definition that suits its own needs and terminology. This wide spectrum of human capital beyond just economics is aptly captured by Tan (2014, p.411) who wrote that “Human capital theory (HCT) is not a mere theory in economics. It is a comprehensive approach to analyze a wide spectrum of
human affairs in light of a particular mindset and propose policies accordingly. Education, in
this approach, is placed at the center and considered the source of economic development”.
Indeed, there is also no one single human capital theory (HCT). There is also a plethora of
theories with each theory postulating what the researcher is trying to prove in an attempt to
mirror the discipline of interest to the researcher. However, most of the human capital
theories deal with the relationship between investment in human capital and the returns from
it. Typically, this would be an investment in formal education but it could also be in training
and development. This investment could be at the individual level or at national economic
growth or development level. For example, Burnett et al., (1995) claimed that investing in
human capital development increases Gross National Product (GNP) and reduces poverty.
Also, Shobande et al., (2014), linked investment in human capital to economic development
in Nigeria. Thus, many of the definitions or descriptions of human capital, and the related
theoretical frameworks, are quantitative modelling that relates investment in education to
returns to individuals or nations through productivity, income distribution, wages and salary
differentials. Only few studies and analyses such as the United Nations Development
Programme, Human Development Report (HDR, 2015) relate it with the benefits in health
and other larger societal components of human capital, such as social or cultural capital.

Kucharcikova (2011) put forward two approaches to understanding human capital.
These are the business economics approach and the managerial approach. The business
economics approach considers human capital as a factor used up in the production process
whereas the managerial approach views human capital as a business resource or an asset that
forms part of the market value of a company. Thus the macroeconomic approach sees human
capital as another factor of production for economic growth and development in which to
invest.
As the name implies, the business economics approach has its origin in economics while the managerial approach reflects more of its use in management and human resources within an organisation. Goldin (2016, p.56) defined human capital as “a stock of skills in the labour force” and she cited the Oxford English Dictionary (2012) which defines Human Capital as “the skills the labour force possesses and is regarded as a resource or asset”. This definition encompasses the notion that there are investments in people (e.g., education, training, health) and that these investments increase an individual’s productivity. From a broader viewpoint and a managerial approach, The Organisation for Economic Co-operation and Development (OECD, 2001, p.18) defines human capital as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being”. The online Random House Dictionary (2016) and The Collins English Dictionary (2014) make references to human capital as collective skills, knowledge, or other intangible assets of individuals that can be used to create economic value for the individuals; their employers or their community and abilities and skills of any individual, especially those acquired through investment in education and training that enhance potential income earning. The inference therefore is that education is an investment in human capital that pays off in terms of higher productivity”.

A few of the scholarly descriptions of human capital include “knowledge that is embodied in people” (Coff 2002, p.108). Becker (1994) described human capital as a form of investment by individuals in education; Denison (1962) described it as a form of education that contributes to economic growth. Mincer (1975) referred to it as education and schooling that will prepare the workforce; Hudson (1993) described human capital as the genes, education, experience and attitudes towards life and work; and Luthans et al., (2004) saw it as the personal experience, level of education, professional skills, knowledge and creative ideas”. Schultz (1960), a pioneer economist of the human capital theory, described it as the residual factor that accounts for the nation’s productivity when land, labour and capital could
not fully account for all the productivity of a nation. Specifically, Schultz (1960, p.571) stated that I propose to treat education as an investment in man and to treat its consequences as a form of capital. Since education becomes a part of the person receiving it, I shall refer to it as human capital. Some and perhaps a substantial part of the unexplained increases in national income in the United States are attributable to the formation of this kind of capital”.

Irrespective of the definition or description of human capital by the various researchers and scholars, the central theme is that human capital development is about developing the human being as opposed to other factors of production which are organised and managed by labour (human resources). These definitions and descriptions mark out human capital as separate and very distinct from the land or capital assets in the traditional economic production process and, indeed, that the labour factor in the production process is not homogenous, i.e. not all labour are equal or the same in the production process.

2.1.2 Human Capital Theories

With so many different definitions and descriptions of human capital, not surprisingly there are also many different theories of human capital as well as the models that have been formulated to test and prove these theories. However, at the core of the human capital theories is that there are returns on investments in human capital for individuals at a micro and for the society at large at a macro level - for example, at the political, social and civil institution levels (World Economic Forum, 2016). Thus, human capital theories can be viewed from a micro level such as an individual mainly in terms of returns or earnings or income on investment in education (Carneiro and Heckman, 2003; Cunha et al., 2006) or at a national (macro) level mostly in terms of economic growth, development and national competitiveness (Carneiro and Heckman, 2003; McMahon, 2009; Pasque, 2010; Durlauf et al., 2004). Thus, the underlying principle in human capital theory is that, just like other resources in production of goods and services, the human learning capabilities are of
comparable value (Lucas, 1988, 1990) and the results are profitable for the individual, organisation and society at large (Schultz, 1961). Human Capital Theory (HCT) thus postulates that there is a gain from investing in education and training (Aliaga, 2001), and the proposition is that people should be considered as a form of capital that should be developed (Aliaga, 2001; Becker, 1993; Benhabib and Spiegel 1994; Engelbrecht, 2003; Hendricks, 2002).

Another perspective to the theoretical framework of human capital is that human capital is developed as an outcome from a formal education system and it creates good employment opportunities (Becker, 1993, 1994; Padhi, 2014). In other words, human capital theory suggests that education or training raises the productivity of workers by imparting useful knowledge and skills; hence raising workers’ future income by increasing their lifetime earnings (Becker, 1994). It postulates further that expenditure on training and education is costly, and should be considered an investment since it is undertaken with a view to increasing personal incomes. Similarly, Wilson and Briscoe (2003) found that the impact of education from increased investment in education leads to higher productivity and earnings for the individual and such investment results is significant social rates of return. Matovac et al., (2010) further found that human capital should be considered an important factor of economic growth and development and as such countries should improve their labour market competitiveness and increase investments in education, science and technology in order to attain highly-skilled human capital. This partly explains why economic modelling now incorporates human capital as a factor of production in growth accounting models. One such model is an augmented version of the Solow (1956) Model which is now discussed below for demonstration and explanation purposes only.

### 2.1.3 The Human Capital Augmented Solow Growth Accounting Model

This literature review of the growth accounting model is for illustration purposes only to demonstrate how the human capital factor fits into the economic growth model. It is not being used for proving or solving an actual economic growth scenario. The original Solow
(1956) and Swan (1956) accounting growth model is a model of capital accumulation in a pure production economy and was built on two assumptions namely: (i) Decisions relating to savings and investment are devoid of individual optimization or exogenous; and (ii) Accumulation of factors and advancement in technology are also devoid of individual optimization or exogenous. The Solow’s model concerns itself with the output (Y) produced when three inputs {i.e. capital (K), labour (L), and “knowledge” or the “effectiveness of labour” or technology (A)} are mixed at any time in an economy. Therefore, a production function which has physical capital, labour and knowledge or technology was specified as shown below:

\[ Y_t = f(K_t, A_t, L_t) \]  

Where

Y = Production Output
K = Physical capital
A = Knowledge or Technology
L = Labour

NB: Time, though not a direct variable in the model, influences production output through physical capital (K), labour (L), and knowledge or technology (A). Thus, production output changes with time only if the inputs of K, L and A change. The multiplicative relationship between A and L (i.e. A(t)L(t)) implies that knowledge or technology is “labour-augmenting” and effective labour is a product of knowledge or technology and labour, AL (Mankiw et al., 1992).

The original Solow Model did not explicitly incorporate human capital which is the focus of this study. An augmented version of equation 2.1 by Mankiw et al., (1992) was developed which now includes human capital and hence fits better into this study. The role of human capital in the process of production is recognised and accounted for in this augmented Solow’s growth model. The augmented Solow’s growth or production model re-writes equation 2.1 as follows:
Where $H_t$ in equation 2.2 represents human capital and other variables remain the same as earlier defined. For the purpose of this thesis, the term human capital, $H_t$ is restricted to education through government-funded overseas scholarship $E_{OS_t}$; $H_t$ will therefore be replaced with $E_{OS_t}$ and so the modified augmented Solow’s model for this study will be specified as follows:

$$Y_t = f(K_t, E_{OS_t}, A_t, L_t)$$

Where $E_{OS_t}$ represents education through government-funded overseas scholarship.

In period $t$ the amounts of physical capital, $K_t$ and employees educated through overseas scholarship $E_{OS_t}$, are determined by past accumulation. The aggregate production function derived from equation 2.3 is assumed to be:

$$Y_t = K_t^\alpha E_{OS_t}^\beta (A_t L_t)^{1-\alpha -\beta}$$

Assuming $0 < \alpha < 1; 0 < \beta < 1; \text{and } \alpha + \beta < 1$.

Production function 2.4 is therefore based on the assumption that there exist constant returns to the three inputs $K_t$, $E_{OS_t}$ and $L_t$; and this assumption is in accordance with the replication argument” (Sorensen and Whitta-Jacobsen, 2011, p.163; Carneiro and Heckman, 2003). The possibility of doubling production is dependent on the doubling of factor inputs (i.e. hiring $2L_t$ workers instead of $L_t$, each worker being supplied with the same amount of physical capital, $k_t=K_t/L_t$, implying doubling of physical capital to $2K_t$ and also been endowed with the same amount, $h_t$, of human capital due to education through government-funded overseas scholarship, so human capital doubles to $2H_t$) at a given level of knowledge or technology $A_t$. It follows therefore that the two reproducible capital (physical and human) inputs are accumulated in the same way and depreciates at the same rate. Thus, hiring one
(marginal) unit of labour now means hiring one more unit endowed with the average amount, $E_{OS_t}$, of human capital per worker. Hence a firm cannot increase the input of "raw" labour, $L_t$, without increasing proportionally the input of human capital, $E_{OS_t} = e_{os_t} L_t$. It therefore becomes necessary to consider $e_{os_t}$, (not $E_{OS_t}$) when computing marginal product of labour (Sorensen and Whitta-Jacobsen, 2011; Mankiw et al., 1992).

Eigbiremolen and Anaduaka (2014) used the human capital augmented Solow model to empirically investigate the impact of human capital development on the Nigerian economy and found the variables, which included the stock of human capital developed through education, were statistically significant in the determination of the level of the economy’s output. They concluded that as a consequence of their findings, the Nigerian government should as a matter of urgency give high priority to its human capital development through adequate education funding. These findings further justify the inclusion of human capital in the growth accounting production model.

2.1.4 Importance of human capital

Some of the descriptions and definitions of human capital have clearly highlighted its importance at both the individual and national levels. Goldin (2016) posited that the unexplained residual in the Solow (1957) growth accounting model accounted for 87.5% of the total growth in per capita of the USA economy. This was the same unexplained residual factor that Schultz (1960) later labelled as "human capital". Such a large percentage change as a result of one factor is so important to make human capital statistically significant in accounting for economic growth. Its importance is now found in economics and non-economic disciplines. In the field of Human Resources, Awopegba (2002) concluded from his studies that human capital is the most valuable asset in an organisation and needs to be mobilised. Harbison and Myers (1964) expressed human capital as the active factor of production the absence of which the other passive factors of capital and natural resources
cannot perform. They posited further that human capital is the most valuable resource of a
country. Marshal (1930) opined that the most valuable of all capital is that which stimulates
national development through investment in human beings (cited in Jaiyeoba, 2015).
Furthermore, according to Stein (2005), nations and individuals become rich by investing in
human capital. The OECD (1998, p.91) stated categorically that for growth and prosperity
to be sustainable, social cohesion is required; here too, the role of human capital is vital.
These tenets are now increasingly accepted”.

Perhaps the overall importance of human capital is best captured very succinctly by
Omolara and Agbiokoro (2014). In faulting the Solow (1957) accounting growth model
which attributed rate of economic growth to technological accumulation, Omolara and
Agbiokoro (2014) argued that the theory ignored the fact that the technology itself is driven
by human capital. They argued further that on its own, technology has no capacity to
translate to economic growth without human capital intervention. Thus, only human capital
can engineer, develop and improve technology leading to economic growth and
development. This implies that all the other factors of production require human capital in
order to produce the desired outputs. It is therefore a very important (if not arguably the most
important) component in the production process. Indeed, some scholars, such as Lucas
(1988); Durlauf et al., (2004); and Psacharopoulos (1994) regard human capital as the major
driver of a nation’s economic growth and performance. As an indication of its importance at
the national level, the 10th Malaysian Plan, 2011-2015 (2010, p.192), remarked that human
capital lies at the core of innovation and a productive high income economy. It is the most
important investment a country makes”. Human capital development is therefore very
important at both individual (micro) and national (macro) levels. Indeed, the World
Economic Forum (2016) noted further that virtually no other resource can be more important
to a nation than its human capital endowment.
2.1.5 Education and Human Capital

The Greek philosopher, Diogenes Laertius (413BC - 323BC), famously stated that the education of its youths is at the foundation of every state (cited in Anderson and Keys, 2007). This quote could be adapted to also state that the education of all the population is very important to a nation. As Van-Den-Berg (2001) found in his studies, countries at the forefront of technology also have the most educated population. This suggests that education is very important in the development of any nation.

The literature review of the definitions and descriptions of human capital also showed that nearly all the studies referred to human capital as being acquired (developed) through education or training. For example, Garavan et al., (2001) and Youndt et al., (2004) very closely link human capital to education, knowledge and skills. According to Tan (2014, p.412), “HCT (human capital theory) suggests that education increases the productivity and earnings of individuals; therefore, education is an investment. In fact, this investment is not only crucial for individuals but it is also the key to the economic growth of a country”. In 1930, the economist, Alfred Marshall, alluded that the investment in human beings (human capital acquired/developed through education) was the most valuable of all the investments. More specifically, all the three pioneer protagonists of human capital, Theodore Schultz, Gary Becker and Jacob Mincer, referred to education playing a key role in human capital. Schultz (1972) described human capital as the acquisition of knowledge. His study demonstrated that education is the link between the labour input of production and the increase in productivity in the USA economy. As such, it is this acquisition of knowledge and skills that moved this human labour input to become human capital in the production process. Schultz (1960) categorically called it human capital when the education became a part of the person acquiring it and he went further to list the improvement in education as one of the five ways through which human capital could be developed (Schultz, 1961).
A more direct link was provided by Becker (1994) in his description of human capital as the economic value of education. In essence, human capital is an economic or financial benefit derived from education. Thus, human capital is a return on investment in education. In Human Capital Theory (HCT), a person’s formal education determines their earning power (Rossilah, 2004). Thus, in his view, people invest in education because potentially it could bestow private and social benefits. He identified private benefits to include higher earnings and argues that education and earning power are correlated. The social benefits of education are listed as higher income tax collection and increased health awareness, etc. The skills, knowledge and abilities that education provides can be transferred into the work place in terms of productivity. Most of the scholars therefore acknowledge the link between human capital and education and training (Adedeji and Campbell, 2013; Neamtu, 2012; Jones and Ramchand, 2013).

There are also more recent studies and commentaries on the role of education in developing human capital; especially government-funded overseas scholarships. In a speech delivered at a World Bank Network Forum (2011) Arne Duncan, the USA Secretary of Education, reported that education today is inseparable from the development of human capital. Some studies of government-funded overseas scholarships programmes by Perna et al., (2015) on the Kazakhstan's Bolashak overseas scholarships and the OECD and the International Bank for Reconstruction and Development – IBRD/World Bank (2010) also highlighted the importance of education in developing human capital. The OECD and IBRD/World Bank (2010) described the Becas Chile (BCP) overseas scholarships programme as a big and bold step to catalyse a significant leap forward for the quantity and quality of human capital in Chile through investment in technical, professional and graduate education. Also, the British Council and DAAD (2014) assessed eleven (11) government-funded overseas scholarship programmes and highlighted the importance of developing human capital through proper education. All these three studies posited that education
through government-funded overseas scholarships was a means of developing human capital and commended the various governments for implementing them. This approach to accumulating stock of human capital through government funding of overseas scholarships forms the focus of this study because the emphasis is on higher education as a tool for developing human capital.

There have been many other studies, such as Orozco and Valdivia (2017), of the role of education in human capital development and by extension its importance for a nation’s economic development and growth. Their study reiterated the significant role that education plays in developing the human capital that Honduras needs in a competitive modern society by stating that “Education remains a critical tool to build human capital and endow a country’s workforce with the necessary skills to compete in a global economy” (Orozco and Valdivia, 2017; p.14). While most of the studies found positive correlations in the relationship, some cross-country studies, for example, by Caselli et al., (1996) and Pritchett (1996) disputed earlier studies (which were not cross-country studies) that education necessarily leads to economic growth (Mankiw et al., 1992). The difference in the findings is very important because if education does not lead to developing human capital that leads to economic growth and development, then it would seriously undermine the huge investments that countries make in providing education for its citizens for the purposes of economic development and growth.

A further review of much of the literature showed that these disputed cases were very few and appeared to relate to cross-country studies. There are suggestions that the peculiarities of their surroundings and environment dictated their findings. For example, Isola and Alani (2012) and Nworgu and Nworgu (2013), proffered a plausible explanation that the quality of education of different countries and not the education in itself may be responsible for the seemingly different findings in the cross-country studies from other similar same country or country-specific studies. They referenced the studies by Hanushek
and Kin (1995), Hansson et al., (2004) and Hudson (1993) highlighting the significance of labour force quality affecting different countries’ per capita growth rates. In his study, Denison (1964) concluded that there is a positive effect between growth and education and there is a relationship between productivity and the cognitive skills possessed by the labour force.

2.1.6 Rationale for Overseas Study and Government Investment in Human Capital

Overseas scholarships (sometimes called international or study abroad scholarships) have been in existence for centuries. Their uses and justification varied according to the aims and objectives of their sponsors. This was the assertion at a Commonwealth Scholarships Commission (CSC) Seminar that scholarships funding sources determined the objectives and expected outcomes from their programmes (The Netherlands organisation for International Cooperation in Higher Education - Nuffic, 2012). At the macro (national) level and from the point of view of a sponsoring country, the literature review showed that the practice of nations sending students abroad for studies dates back to the days when colonial masters used it as a tool to train the administrative elites for the efficient administration and social control of their colonies (Goodwin, 1993). The review of literature also revealed that during the cold war era, it became a tool for ideological warfare with countries counteracting the influence of the power blocks in third world countries (OECD, 2004). The recent trend is that study abroad is being used more for development purposes with mostly developing countries sending students to the developed countries (Varghese, 2008; Perna et al., 2014; Goodwin, 1993; Cummins, 1993).

More recently, many developing countries have sought to use overseas scholarships to address shortages of skilled workers in the sponsoring nation (UNESCO, 2016; Perna et al., 2014), advancing national growth and productivity (Kim, 1998) and international understanding of languages and cultures (Edelstein and Douglas, 2012). When the overseas
scholarship programmes are at government to government or agencies levels, it can also form
the basis of bilateral relationships and a form of developmental assistance from host to the
sponsoring countries (Varghese, 2008) and/or developing and sustaining social and cultural
links (Goodwin, 1993). Of more relevance and with implications for this study is the
summary by Perna, et.al., (2014, p.64) that “with international scholarship program, a
government ‘intervenes’ in the higher education market in ways that increase the number of
students who are studying or earning degrees from postsecondary educational institution in a
foreign country”. This is precisely what the government sponsoring the Rivers State
Overseas Scholarship Programme (RSOSP) was seeking to achieve and by so doing develop
human capital for the State.

Thus, the rationale and justification for overseas scholarships is primarily to fill the
skills gaps in the sponsoring country by developing the human capital at study destinations
abroad that possess the capacity and capability, and the suitable educational institutions to do
so. At the individual (micro) level, there are also justifications for government sponsorship
in the form of education subsidy (scholarship). This is irrespective of whether it is study at
home or abroad. Carneiro and Heckman (2003) found that the net cost of education
comprised the tuition fees and opportunity costs foregone to the student. Some students may
not be able to afford these costs by themselves and so rely on government subsidies to
acquire an education. (Carneiro and Heckman, 2003). Also, the National Association of
State Budgets Officers (NASBO, 2010) observed that the share of the population enrolled in
colleges and receiving a college degree increases during economic slowdowns but Carneiro
and Heckman (2003) had found earlier that its impact is limited on college attendance and
completion and Pritchett (1996) positing that financial subsidy in education (i.e.
scholarships) at such times have no significant impact on developing human capital for
growing or developing the economy (Pritchett, 1996).
Omolara and Agbiokoro (2014) concluded from a study of government funding of education that the private sector benefits maximally from an educated population but they may not invest adequately to develop the necessary human capital required. Thus, it would be up to governments to fund education in society in order to develop its human capital. Also, Nuffic (2012) reporting on the deliberations of a Commonwealth Scholarships Commission's (CSC) Seminar in 2012 pointed out that scholarships to individuals should have collective beneficial outcomes for organisations, the community and the wider society.

For Boissiere (2004), one major argument for public investment in education is poverty reduction. Using a transmission mechanism of 'investment in education-to-growth-to-poverty reduction', Boissiere posited that "economic growth" becomes only as powerful in "reducing poverty" when complemented by "good policies for human capital development, which promoted more equal income distribution" (p.11). Also, whilst not found in any of the studies and articles reviewed, an argument could be made in favour of sponsorship of an individual in a situation where there is national priority but very few interests from the public. In such an instance, scholarships (an education subsidy) could be used to persuade an otherwise uninterested or sceptic individual to study in that field. Another persuasive argument for scholarships is from the research by Olaniyan and Okemakinde (2008) positing that education has positive externalities and therefore educating a part of the community benefits the entire community.

2.1.7 Review of Policy Goals and Outcome Expectations of Studying Abroad

This literature review of the policy goals and outcomes of overseas scholarship examines previous studies on the subject from the perspective of the theme of this study which is the alignment of policy goals with the outcomes of a government-funded study abroad programme. As such, it is proper to define the context in which policy goals and outcomes are used in this study to enable any measure of success in their achievements. This
is therefore the focus of the review in this section. In these reviews, policy goals represent the planned or proposed end-goals of the overseas scholarship programmes and the terminology is used in their basic and simple understanding of them as the reasons for establishing the programmes. As such, policy goal here is synonymous with the stated (written or documented) aims, purposes or intentions of decision makers when formulating the policies of the programmes (Merriam-Webster Online Dictionary). The policy goals are taken and accepted as a given and as such, the reviews will not cover the processes leading to them or indeed examine whether or not they were realistic, reasonable or otherwise. The outcomes of the programmes represent the consequences of the actions such as outputs or results of implementing the overseas scholarship programmes (Online Business Dictionary). Finally, success for this purpose will refer to the accomplishment of the aim or purpose of the overseas scholarship programme. So, the relative success of the programme will be the assessment of the extent to which the outcomes achieve the policy goals of the programmes.

With the above clarifications and explanations in mind, the review now looks at the general literature on the policy goals and outcomes of overseas scholarship programmes. The empirical review of some specific cases of implemented study abroad programmes is the subject matter of the next section of this literature review.

### 2.1.8 Policy Goals and Benefits of Study Abroad

The literature reviewed showed that there are benefits that could be identified as goals or purposes that accrue for countries as well as individuals (UNESCO, 2016). At the individual (micro) level, study abroad is an important educational experience because it offers a variety of positive academic, personal, relational, and professional outcomes for student participants. Additionally, one’s motivation to study abroad is often related to the expectation of achieving these proposed outcomes, which often entail the desire to learn about a different culture, to broaden the mental horizon, to extend professional knowledge at
a different university, or simply to improve language skills” (Behrnd and Porzelt, 2012, p. 213). Prior research also showed that the central academic outcomes for study abroad participants include improved foreign language proficiency (Dawson et al., 2000; Ryan and Twibell, 2000) and enhanced leadership skills (Dawson, 2000; Jaiyeoba, 2015).

Development of these skills can ultimately prepare students to be more competitive candidates in the job market (Dawson, 2000). Posey (2003) and Talburt and Stewart (1999) compared the long term education and employment outcomes for both study abroad participants and non-participants in Florida. Posey found that study abroad participants were more likely to graduate from college, took slightly less time to complete a Bachelor’s degree, had overall higher mean GPAs, and were more likely to obtain higher degrees. The academic and professional outcomes of study abroad are legitimate and are often used to market this opportunity to students who seek to gain an edge in today’s competitive global job force (Burkart et al., 2000; Gungor and Tansel, 2008). In fact, Stroud (2010, p.504) argued that “students are studying abroad because potential learning outcomes, such as development of intercultural communication and global understanding, have become an economic commodity with high value in the global market place”.

In addition to the proposed academic and professional outcomes, study abroad offers a variety of personal benefits to participants. Researchers have found that study abroad experiences can provide students with higher levels of patience and independence (Dawson, 2000), greater flexibility and decisiveness (Behrnd and Porzelt, 2012), and perceived increases in communication self-efficacy (Milstein, 2005). Other studies have also suggested that international study can propel general personality maturation qualified by lower levels of neuroticism and higher levels of openness and agreeableness (Zimmermann and Neyer, 2013) and enhance overall personal development by learning about human nature and oneself (Ryan and Twibell, 2000; Toscano, 2014). Study abroad was also shown to promote changes
in students’ worldviews and experience in their sense of identity, self-concept or self-esteem (Trilokekar and Kukar, 2011).

Several studies have also found that study abroad allows for greater exploration of and insight into one’s national identity (Dolby, 2004; Savicki and Cooley, 2011). Specifically, in her study of American students studying in Australia, Dolby argued that—despite the rhetoric that focuses attention on students’ encounter with ‘the other’ and the subsequent increase in cultural competency and understanding, in actuality students’ primary encounter during the study abroad experience is with themselves as national and global actors” (Dolby, 2004, p.154). Reporting on a group of Americans studying in Spain, Talburt and Stewart (1999) found that students either tried to blend in with the host culture or placed an emphasis on creating closer relationships with fellow American participants. Some studies have also shown that students benefit from their learning, understanding and acceptance of different cultures and diversity that could result in lifetime friendships and relationships (Williams, 2005; Lee and Barro, 2013; Dawson, 2000).

While the general consensus is that studying abroad is a positive, rewarding, and enriching experience, some negative outcomes and potential risks do exist. Some studies have reported that study abroad students tend to engage in more risk-taking behaviours, students can feel like cultural outsiders (Trilokekar and Kukar, 2011), and grapple with instances of racism and sexism (Talburt and Stewart, 1999). Ryan and Twibell (2000) study of students’ values and coping strategies while abroad suggested that students experience the greatest amount of stress concerning social relationships, academic achievement, communication skills, personal adjustment, health, and bureaucratic procedures during the study abroad process. Relatedly, Hunley (2010) examined how higher levels of psychological distress and loneliness experienced abroad related to lower levels of functioning. She theorized that study abroad students experience increased levels of loneliness given the absence of their usual social support systems combined with the detachment they may feel
from their new local communities. According to Hunley (2010, p.387), “travelling to a different part of the world, away from family and friends, away from a familiar language, culture, and way of life is stressful”.

At the national (macro) level, the reasons stated for setting up study abroad schemes and the stated potential benefits are very wide ranging. The planned aims, goals and purposes are usually very broad and more strategic in their expressions. They are rarely objective or specific. The sponsoring government officials often claim success in achieving their intended goals but these are usually not quantified and rather vague. A review of literature on policy goals (aims and purposes) of established government sponsored overseas scholarships programmes showed an array of qualitative descriptions of what they aim to achieve from the programmes. The British Council and DAAD (2014) undertook a comprehensive review of eleven (11) countries’ public funded scholarship programmes. How the research was conducted is explained under the empirical review of the literature on established scholarships. But in respect of the documented and published policy goals, aims or purposes of the programmes, they ranged from enhancing innovative capacity in technology; training in science and technology; and research, education and development to increasing and expanding capacities in higher institutions; training in specialist key areas; building connections abroad and improving human resources. Every programme had quantified input target number of awards but no estimated or expected targeted number of outputs or outcomes. Only one of the schemes (Mexico) had quantity-related target goal of increasing the capacity of its universities by 48% between 2010 and 2020. In essence, this was the only identified quantitative target against which an outcome could be assessed for success or not in achievement or indeed alignment with outcome achieved. This absence of quantifiable policy goal data is significant for comparison purposes for the findings of this study.

The literature reviewed further showed what Visnawathan (1993) found to be some drawbacks of study abroad programmes. He listed some of these as irrelevance of some of
the training, very costly, some cultural and linguistic alienation of students when they travel and brain drain as a result of not returning home after study abroad. The literature on the non-return home component of the brain drain is reviewed later in this chapter (section 2.1.10).

2.1.9 Review of the Outcomes of the Study Abroad

An outcome for the purposes of this study was explained at 2.1.7 above as the consequence or achievements of an action and the terminology is synonymous with result or output of a scheme. In order for the outcomes to be measured and compared with the policy goals, it is important that they both have comparable units of measurement. There is a dearth of literature on data and information on the achievements or results of established government-funded overseas scholarship programmes. It has also been difficult to ascertain specific outcomes of programmes and indeed how to measure them. This is particularly so in reviewing the number of recipients that achieved the desired results (outcomes) from the number of recipients that were awarded the overseas scholarships. The information from the records available were mostly qualitative responses to interviews and surveys giving narrative accounts of the achievements of the programmes.

In general, overseas scholarships programme administrators maintain books and records that contain statistics of recipients of awards i.e. input targets (number of scholarships to be awarded) and how many that have been awarded. For example, the literature review of the British Council and DAAD (2014) study showed that the Brazil overseas scholarship programme had an input target of 45,000 and had awarded 39,000. Similarly, the Chinese scholarships had awarded 48,000; the Egypt scheme had awarded over 4000 while Indonesia had granted 4,400 overseas scholarships. The records and statistics are however very different in terms of achieved outcomes of the programme. The available information is vague and non-quantifiable. The British Council and DAAD (2014) report contained some responses on impact and outcomes of the programmes. For example, it
commented on the Chinese programme (p.13) that “a number of academic reviews of the scholarship schemes have identified several positive outcomes. For instance, universities are said to be benefiting from greater interdisciplinary collaboration between campus units, an increase in partnership agreements with foreign institutions, and, perhaps most significantly, changes to the provision and quality of graduate education”. On the Indonesia programme the report (p.25), stated that “According to sources familiar with the programme, approximately 50 per cent of the planned grant recipients have completed their studies and returned to Indonesia. Government officials are pleased with the programme’s progress to date, noting that many of the sponsored scholars have increased their academic productivity, as measured by the number of their scholarly publications”. And on the Bolashak Kazakhstan programme (p.29), “there have been no formal attempts to measure the qualitative impact these awards have and continue to make. Asked to comment on Bolashak’s impact, officials familiar with the programme responded that it had generated key workforce training and skills, enhanced recipients’ worldview and prosperity, and promoted a positive image of the country and sense of national pride”. On the Mexico programme, the British Council and DAAD (2014, p.33), reported that “beyond tracking the number of awards given over time, no formal methodology has been deployed to measure the impact of either the CONACYT or Fulbright-García Robles scholarships. Both programmes are nevertheless widely understood to be generating important outcomes at various levels of society”.

The above are some examples of the “feel good factors” (British Council and DAAD, 2014) vague reporting of outcomes of the government-funded overseas programmes. They are by no means the exceptions. Rather they appear to be the norm. It is clear from the literature reviewed that outcomes of programmes are not usually clearly defined or stated in the execution of the programmes. This is perhaps a reflection of the vague and unquantifiable policy goals set out in the first place. The few reported cases of quantified outcome were on
the Indonesian scholarship which reported that approximately 50% of the recipients returned home and on the Pakistani scholarship where 590 (38%) of 1,541 recipients had returned home after studies abroad. This also raised the question of what the outcome expectations (policy goals) were of these programmes.

This outcome clarification brings back the issue of what the initial needs were for sending the students abroad. Following the literature review of the reasons for overseas scholarships, a common interest across all the government-funded programmes was a primary need to enhance the human-resource capacity among their citizens (British Council and DAAD, 2014) and to fill skills gaps at home (Perna et al. 2014, 2015; Varghese, 1993; Goodwin, 1993). All other expected benefits such as understanding foreign cultures and languages were secondary benefits or by-products of the acquisition of the needed skills and returning home to fill the gaps. The primary outcome would therefore be the return home (RH) of the successfully graduated recipients from their study abroad. The literature on return home from study abroad is now reviewed and with particular regard to an empirical examination of established publicly funded overseas scholarships.

2.1.10 Successful Graduation and Return Home from Studying Abroad

Whether expressed or implied, the policy goal of a government-funded overseas scholarships programme (for a developing country at least) is the return home of successfully graduated recipients to fill the skills gaps at home. The literature reviewed identified that this is the primary purpose of sending the scholarship recipients abroad to study. The UNESCO (2016) publication specifically identifies the “number of scholarship recipients completing course and returning to home country” as an indicator that should be monitored (p. 14). Failure to achieve this primary policy goal could be deemed as a failure of the programme. Indeed, the extent to which they achieve this primary policy goal is a measure of their relative success or failure. This interpretation concurs with the position in the British Council and DAAD (2014, p.36) study where they reported that — principal measure of
programme success relates to the number of scholarships awarded compared with the number of recipients who have completed degrees and returned home”. The reference to “completed degrees” is the equivalent of “successful graduation” of students from the programme in this study. In human capital theory terminology, when a recipient has successfully graduated, they would have acquired skills through a formal education system and are ready for the work place (Becker, 1994; Mincer, 1975). This is a stock of developed human capital. The successful graduation (completed degree) is a desirable and necessary requirement and condition for developing human capital. However, for it to meet the sufficient condition or requirement of the primary purpose of the overseas scholarship programme, the successfully graduated recipients must return home to the sponsoring country to add to the manpower pool. For the purposes of this study, return home after successful graduation (SGRH) is therefore the outcome; thus making return home (RH) the primary outcome but with successful graduation (SG) a secondary but a pre-condition precedent before the final outcome (SGRH).

It is noteworthy that the non-return home of a student from studying abroad has a negative impact on the sponsoring developing country (Rapoport, 2017; Ziguras and Gribble, 2015). Individuals and developing countries would have incurred costs in funding their education and would have developed their human capital stock but they did not return home to utilise the skills to fill gaps in the developing countries. At the micro level, individual students could still earn their returns on their investments wherever they worked irrespective of whether or not they return home from their study abroad. However, at the macro level, a country would have lost the societal benefits from investing in these students who do not return home from their study abroad. As Celik (2009) noted in her qualitative interviews study of the Turkish National scholarships, the rate of non-return home from study abroad made critics of the Turkish programme to question its success. This scepticism about the success or not of the programme raised sufficient concerns and doubts to overshadow the
actual and potential contributions of the scholars that returned home from their study abroad. This non-return home from study abroad is referred to in the literature as a brain drain. Visnawathan (1993) posited that not returning home after studying abroad was one of the major drawbacks of study abroad and one of the high risks that developing countries take in sending students abroad. Soon (2008, p.1) stated that “the non-return of students to their home countries following study abroad is one type of brain drain; brain drain itself is a form of migration”. Wong and Yip (1999) argued that because the engine of economic growth is human capital accumulation and intergenerational externality, brain drain has an adverse impact on present growth, income distribution and welfare of future generation of non-migrants. It is therefore a serious problem mostly for developing countries. Indeed, according to the International Monetary Fund (IMF, 2016), brain drain is particularly acute in sub-Saharan Africa with heavy migration to the developed nations of the Organisation for Economic Cooperation and Development (OECD) countries. Brain drain itself is a wider phenomenon of migration of skilled human capital from one country (usually a developing country) to another country (usually developed country). While this is not the focus of this study, it is particularly relevant to the development of human capital for developing countries to warrant a more detailed review of the literature on brain drain.

In recent times, increased international exchange programmes have been regarded as the major factor contributing to the high rate of brain drain. Students from home countries (mostly developing countries) travel to prospective host countries (mostly developed countries) to obtain quality knowledge, training and skills (Brock, 2016; Ienciu and Ienciu, 2015). In the light of this trend, it is logical to associate brain drain migration with studying abroad. Once abroad, international students are faced with the decision to return home or remain abroad and this leads to increase in brain drain migration from the developing (home) countries to the developed destination (host) country of study.
Gungor and Tansel (2008) conducted a survey research on the return intentions of Turkish students studying overseas. According to them, the wave of Turkey’s “brain drain” dated back to the 1960s. Using structured questionnaire to elicit responses from Turkish students studying in overseas universities, the researchers found that the reasons for non-return to Turkey were attributable to factors such as political instability at home and higher salaries and better employment opportunities abroad. Their study further showed that one third of students studying abroad who responded positively to the proposition on returning home identified ‘reaching academic and work experience goals’ as the most important reason for their decision. Their study found that 61% of the respondents pointed to missing their family at home while abroad as being responsible for their intention to return while 23% said their children’s education at home was the reason for wanting to return home.

Oosterbeek and Webbink (2011) investigated whether studying abroad in Netherland increased the propensity to live there later on. Using an instrumental variable approach based on cut-offs for selection of awardees they were able to associate studying abroad and the number of months spent studying abroad with increase in the probability of living abroad after completion of study abroad. The results from all their four specifications point in the same direction that the applicants who were awarded a scholarship in the period 1997–2002 were more likely to live abroad at the time of the interview.

There was very scant literature on successful graduation (SG) from study abroad. It was therefore very difficult to find any literature on the numbers that graduated from cohorts of government-funded students that were sent abroad to study and what factors determined, contributed to or accounted for their successful graduation or failure. There were, however, numerous studies on return home intentions from study abroad but these were mostly on non-government-funded students. For example, using a binary logit model on survey data of non-bonded and non-government-funded students, Soon (2008) found that the initial intentions prior to leaving home were the most important determining factor for students deciding
whether or not to return home from their study abroad. In order to identify the major factors that motivate African graduate students to remain in host country instead of returning home, Slawon (1998), conducted a questionnaire survey of graduated students who stayed back in the USA after studying abroad and found that those who had stayed longer and adjusted their residency status in the USA tended to remain. There have been several other studies estimating rates of return home from study abroad based on qualitative surveys and interviews of the intentions and inclinations of the students. Cheung and Xu (2015) used both qualitative and quantitative methods to examine the intentions of 90 privately funded Chinese students studying in prestigious universities in the USA and found that 50% of them expressed an intention to return after their studies. There is no evidence of a follow up of these expressed intentions to confirm whether or not 50% of them actually returned after their studies. The same study also quoted a Chinese Ministry of Education statement estimating that only 25% of Chinese students studying abroad were likely to return home from their study abroad.

Of more significance and relevance to this study are empirical studies of actual rates of successful graduation and their return home from study abroad. In this regard, Felbermayr and Reczkowski (2012) used the United Nations Conference on Trade and Development (UNCTAD) information and data from 1970 to 2000 to construct a new balanced panel database of bilateral international student mobility for 150 sponsoring countries who travelled to 23 study destination countries. They found that, on average, 70% of the students who completed their studies did not return home. This implies that only 30% of the study abroad students returned home. Cheung and Xu (2015) also reported a Chinese Academy of Social Sciences study that showed a 30% rate of return home between 1978 and 2006 by Chinese students studying abroad. Finn (2010) found that the stay back rate of foreign doctorate recipients in the USA was 65%. This implies a return home rate of 35% from their study abroad.
Except for the Pakistani scholarships programme, none of the studies dealing with the rates of return home made any distinction between successful graduation and return home. They all reported return home rates that incorporate both successful graduation and return home from study abroad. Only the Pakistani government programme showed a successful graduation rate of 39% (if the total awards are used as population) or 97% (if an estimated qualifying population is used as the population). The rate of return home was 38% or 95% depending on the expected graduation dates of the study population which was not stated in the study (British Council and DAAD, 2014). There are also other studies showing even much lower rates of return home from study abroad confirming the concerns that the non-return home from abroad are increasingly more alarming for brain drain from developing countries than had been previously portrayed. Kwok and Leland (1982) calculated a rate of 12% for Taiwan scholarships between 1960 and 1979; Cheung and Xu (2015) referred to a study by Mishra (2013) showing that only 5% of Indian students who obtained a doctorate degree returned home to India.

At the other extreme, Bijwaard and Wang (2016) reported an OECD (2013) finding indicating that only between 15 – 30% of foreign students do not return home following their study abroad. This implies that between 70% and 85% of foreign students return home from study abroad. Also, Bratsberg (1995) cited Myers (1972) which showed that, from a census of foreign students, only 5.9% intended to remain in the USA, implying a rate of return home of 84.1% from study abroad. These much lower stay back rates were not in tandem with the vast majority of the other findings on rates of return home from study abroad.

The literature also contains some factors that contribute to the low rates of return home from study abroad. Immigration policy is one of them. It can decide whether a student stays or goes. Tremblay (2004) pointed to many OECD countries’ liberal immigration policies which allowed many students to qualify to remain. The opposite would be to tighten the immigration policy thereby forcing foreign students to leave after their studies. Baruch et
al., (2007), listed economic, social and legal influences that can push people towards a move away or pull people back when deciding whether to remain abroad or not. These have been alluded to in various studies as “Push-Pull” Factors. Mazzarol and Soutar (2002) described the push factors as unfavourable conditions at home such as political instability and low income, while the examples of pull factors included the favourable factors of advanced facilities and high income opportunities in the study destination countries. Essentially, the push factors drive away the students from the home countries while the pull factors attract them to remain in the host countries.

The review of the literature on brain drain also revealed steps that some countries have taken to reduce the brain drain. The Perna et al., (2015) study of Kazakhstan scholarships used property collaterals as bonds for students to return home after abroad study or forfeit the collateral. The Chinese government used incentives and initiatives such as competitive salaries and tax incentives to reward those who chose to return home (Mok and Han, 2016; Han et al., 2015). Mishra (2013) highlighted measures taken by Indian government to attract and retain students from study abroad. In addition, Ziguras and Gribble (2015) noted measures taken by Singapore to reduce emigration of her students studying abroad. Most of these measures are designed to attract graduated students from abroad. They include improvement of research and development facilities, international collaborations, retention through educational development and promoting return home incentives as well as dialogue and engagement.

2.2 Empirical Review of Government-funded Overseas Scholarships

This section of the review examines the literature on established government-funded overseas scholarship programmes. The focus of the review is on the assessment of the achievement of their purposes with the outcomes representing their achievements and the plans or purposes representing their policy goals. The primary source of the literature is the comprehensive assessment of government-funded overseas scholarships of eleven (11)
countries of the world by the British Council and the German Academic Exchange Service – DAAD (2014). Other studies relating to specific country scholarship programmes will also be used to supplement their assessment of a particular country’s scholarship programme or where the case study was not assessed by the British and DAAD (2014). The study used experts from each country to gather information from local sources as well as questionnaires where appropriate. Their findings are used extensively in this study in respect of the indicated scholarship programmes particularly with respect to policy goals and outcomes.

Four (4) case studies from the British Council and DAAD (2014) assessment were selected for this empirical literature review of government-funded overseas scholarships. The countries selected were China, India, Kazakhstan, and Pakistan. The Chile scholarship programme and the Rivers State Overseas Scholarship Programme RSOSP) were also reviewed.

2.2.1 The Chile: Becas Chile Programme (BCP)

The Chile government-funded overseas scholarship programme was not one of the eleven countries whose performances were assessed by the British Council and DAAD but the OECD and IBRD/World Bank had conducted a comprehensive review of the Becas Chile Scholarship Programme (BCP) in 2009 and published a report in 2010. The BCP was a scholarship programme set up in Chile to support its nationals to study abroad. In its publication, titled “Reviews of National Policies for Education: Tertiary Education in Chile”, the joint review team provided an overview and recommendations for Chile to develop its tertiary education in the medium and long term. The BCP policy objective was to seek to catalyse a significant leap forward for the quantity and quality of human capital in Chile through an out-of-country investment in technical, professional and graduate education. This stated objective is the equivalent of its policy goal.
The OECD and the IBRD/World Bank (2010) acknowledged that the BCP scheme was innovative in several ways and showed that 3,500 study abroad scholarships had been awarded. However, as with many such schemes, the input numbers of overseas scholarships awarded were recorded but there was no assessment of how successful the BCP scheme had been in achieving its stated objectives. The policy goals and objectives were also not specific or quantifiable and no statistics on the numbers who had graduated or returned home. It was therefore difficult to ascertain the numbers of students who had been successful in obtaining the qualifications that they went for and returned home to fulfil the policy goals of the programme. This could have assisted in identifying what factors that affected or influenced the achievement or non-achievements of the policy goals.

2.2.2 China Scholarship Council’s State Sponsored Study Abroad Programme (SSSAP)

The OECD and IBRD/World Bank Report (2010) on Chile’s BCP scheme drew international comparisons with some other countries that have established scholarship programmes to develop their human capital. In particular, it referred to the China Scholarship Council’s State Sponsored Study Abroad Programme (SSSAP) which aimed to develop China’s exchanges with other countries in the fields of education, and science and technology. It reported that 12,957 had travelled by 2008 on the SSSAP scheme but no indication of how these students had performed. How many of them graduated and how many returned to China to contribute to the workforce?

The more recent study by the British Council and DAAD (2014) showed that there were at least four different national scholarship programmes coordinated by the Chinese Scholarships Council. The programme objectives and number of awards were the same as reported by the OECD and IBRD/World Bank (2010). The British Council and DAAD (2014) report further showed that no qualitative or quantitative impact measurement had been undertaken and again while there was tracking of number of awards there were no formal
assessments of impact, including outcomes of graduation or return home from study abroad on the programme. There were non-verifiable, non-specific and non-quantifiable comments from some government officials that there were “several positive outcomes of greater interdisciplinary collaborations, increase in partnership agreements with foreign institutions and improvement in communication skills” from the programme (British Council and DAAD, 2014, p.13).

2.2.3 The India National Overseas scholarship scheme for Higher Studies Abroad

According to the British Council and DAAD (2014) report, India has the highest number of tertiary institutions in the world with the third largest student population in the world behind China and USA. But the India tertiary education system is beset with enormous challenges” (p.19). The report highlighted that there was no national scholarship scheme for India but there were two specific targeted programmes - the National Overseas Scholarships for Scheduled Castes and Tribes and the Goa Scholarship Programme.

Guatam (2013) reported separately on the laudable programmes and schemes for promotion of education among Scheduled Tribes (STs) in India. The review which included the National Overseas scholarship scheme for Higher Studies Abroad, scheme provided financial assistance to selected ST students pursuing higher studies (Masters, Doctoral and Post-Doctoral levels) in certain specified fields of Engineering, Technology and Science. These are the only stated objectives (policy goals) of the programme. Guatam (2013) did not provide any data or information on the success or otherwise of the programme. Indeed, the British and DAAD (2014) remarked that only figures on funding and numbers of awards were available. There were no assessments of impact, including outcomes to compare with the stated policy goals which themselves were not specific or quantified. Again, there were gaps in data and information to assess the relative success of this programme.
The Kazakhstan (Bolashak) International Scholarship Programme

The Kazakhstan study abroad scholarship programme was one of the eleven programmes assessed by the British Council and DAAD (2014). A more comprehensive review of the programme was undertaken by Perna et al., (2015) and Jumakulov and Ashirbekov (2016). These studies were qualitative studies of document analysis and some interviews and surveys where appropriate. The Bolashak Scholarships programme was established in 1993 with a policy goal to ‘train specialists in key areas to help the country build international relations and transform to a market economy’ (British Council and DAAD, 2014, p.27). A second Academic Mobility Scholarships scheme was added in 2011 with a goal to earn credit towards master’s degrees. An interesting component of the Perna et al., (2015) study was that it took account of some important characteristics of the programme that could determine or account for the success or otherwise of such scholarship programmes in meeting their policy goals. The study identified these factors / features as:

- Selection criteria
- Permitted study destinations
- Level of study
- Academic specialty areas
- Requirement to work in Kazakhstan after program completion

As with other government-funded overseas scholarship programmes, the policy goals were not specific or quantifiable. The programme had input statistic of number of awards (over 10,000 already awarded) but no outcome expectations or achieved against which to measure success. The qualitative remarks on the outcomes of the programmes were not quantifiable or substantiated. The Perna et al., (2015) and British Council and DAAD (2014) studies both reported on government officials’ rating of achievements of this programme to include the generation of key workforce training and skills and enhanced recipients’
worldview. Another reported comment was that the government's investment in this human capital development scheme had been validated by the programme's contributions and it applauded the measures that had been taken to reduce brain drain. With regard to the reduction of brain drain (non-return home from successful completion of study abroad) on the programme, it is noteworthy that a significant element of this scheme was that the students were required to provide collaterals as guarantees to return home from study abroad as part of the qualification and requirement for the award of the scheme. They forfeited the collateral deposited if they failed to return home on completion of their studies. No figures were available to quantify the rate of return home from this programme.

2.2.5  The Pakistan International Scholarship Programme

The Pakistan Overseas Scholarship Programme named –OSS-II” started in 2007 even though it was approved in 2006. By 2014, it had awarded over 1500 scholarships to study abroad. According to the British Council and DAAD (2014, p.35), “Its goal is the creation of a critical mass of highly qualified engineers and scientists by funding postgraduate training at top universities around the world”. Again, the programme's policy goal was not quantifiable and therefore difficult to measure. Interestingly, it was the only one of the eleven countries government-funded scholarships assessed by the British Council and DAAD that had quantified outcomes even if the policy goals were not quantified. Specifically, they had the number of award – 1,541 overseas scholarships of which 590 had completed their studies and returned home. Fourteen (14) recipients had not returned home while 16 did not complete their studies. This implies that 921 (60%) recipients were still studying. The study did not state whether or not these 921 were still within or had exceeded their expected study duration. This distinction would have clarified the qualifying population. Nevertheless, of the 1,541 total awards, 604 (39%) had successfully graduated of which 590 (38%) had returned home and 14 (1%) had not returned. However, if the population is taken to be the number of students no longer in school (1,541 less 921 = 620 students), then 602 (97%) had
successfully graduated, 14 (2%) had not returned home, 16 (2.5%) had failed out and 590 (95%) had successfully graduated and returned home. This level of achievement would not be in line with other reported studies on the rate of return home from study abroad. Like all the other government sponsored overseas scholarship programmes above, there was also a requirement to return home at the completion of studies.

2.2.6 The Rivers State Overseas Scholarship (RSOSP)

The Rivers State Overseas Scholarship Programme is administered by the Rivers State Sustainable Development Agency (RSSDA) and was started in 2008. It had awarded 2118 overseas scholarships at the time of this study. The objective (policy goal) was stated as “the development of highly-skilled manpower for the State by offering opportunities for higher education to qualified and deserving indigenes” (RSSDA Annual Report, 2012, p.13). It is one of a number of scholarships run by the Rivers State government of Nigeria but it is the only programme that focuses on study abroad. More details of this scheme are discussed in Chapter 3.

Like other overseas study programmes, there were no quantified policy goals against which to assess the outcomes. The review of extant literature revealed that there are also no previous studies using the data and information of the Rivers State Overseas Scholarship Programme. As such, it is a gap in the literature which forms the basis of this study.

2.3 Summary of the Literature Review

The literature reviewed showed that human capital existed as a concept long ago but only came to prominence in the late 1950s. It is defined and described variously as an investment in the human being capable of earning a return on the investment in the future. This investment is usually in the form of formal education and training. Education therefore is at the core of the development of human capital. Economists now recognise it as another factor in the production process and its importance is that it is the factor that controls and
manages the other factors in the production process. Countries therefore invest in their citizens for economic development and growth and to accumulate the stock of human capital that they need to gain comparative advantage.

Where there are skills gaps and shortages, which for various reasons cannot be developed at home, countries (particularly developing countries) send their citizens abroad to acquire these skills and return home to fill the gaps. The beneficiaries of these schemes are often funded by governments in recognition of the fact that such investments benefit society in general rather than just the individual.

Many governments have set up study abroad scholarships to achieve these human capital development efforts for their countries. A review of the literature and case studies showed that these overseas scholarships schemes do not usually have quantifiable or measurable policy goals and outcomes thereby hindering proper assessment of their performances as to how successful they have been in achieving their targets. There is a dearth of data and information on the performances of these schemes to assist with any correction and recovery measures on them if necessary. For example, if the main policy goal is that graduated students should return home to fill the skills shortages then the successful graduation numbers and rates would be needed to know what remedial measures are needed to improve the performances. The risk of non-return home is very high on all the government-funded overseas scholarships as identified from a review of the literature.

The main gaps identified from the review of the extant literature in relation to the development of human capital using government-funded overseas scholarships are therefore:

a) No previous study has been undertaken using the data and information of the Rivers State Overseas Scholarship Programme.

b) The established overseas programmes do not have quantifiable policy goals and outcomes that are Specific, Measurable, Achievable, Realistic and Time-bound (S-M-
A-R-T) to assist with assessment of their outcomes. These could form part of their Key Success Factors (KSF).

c) Binary outcome regression modelling on the likelihood of returning home from study abroad had only been used for students’ return home intentions and on private non-bonded students. No such regression modelling exists for the actual return home on government-funded study abroad programmes.

In order to fill these gaps identified in the extant literature, this study uses descriptive statistics and binary logistic regression methods to analyse and to assess the relative success of the RSOSP thereby ascertaining the extent of alignment of the policy goals and outcomes in developing human capital.
CHAPTER THREE

THE RIVERS STATE OVERSEAS SCHOLARSHIP PROGRAMME (RSOSP)

This chapter reproduces the policies, procedures, processes, administration and management of the Rivers State Overseas Scholarship Programme (RSOSP) to give a general understanding of the scheme and put it in context for this study. Except for the summary section of the chapter, the documentation below is reproduced unedited from the books and records of the overseas scholarship programme. The programme is administered by the Rivers State Sustainable Development Agency (RSSDA) on behalf of the Rivers State Government (RVSG) of Nigeria. RSSDA is a wholly-owned socio-economic development and intervention agency set up in 2007 by the Rivers State government of Nigeria. Its core mandates are:

- Human Capital Development (Education, Skills Development and Health)
- Agriculture and Allied Services
- Job Creation and Business Enterprises Development

The Rivers State Overseas Scholarship Programme – RSOSP, (also called the Governor's Special Overseas Scholarship Programme) was established in 2008 as a special intervention focused on producing successful and responsible indigenes of Rivers State to fill perceived gaps in manpower resources in key sectors of the economy, particularly in the Oil and Gas sector. As the host to the hub of the oil and gas sector in Nigeria, there has been a misgiving that Rivers State indigenes were not active participants in the sector by reason of qualification.

The overarching goal of the scholarship programme therefore is to build a qualitative highly-skilled human capital base that will give Rivers State youths the national and global edge and head-start in specialized areas of employment for the overall development of the
State. It was also aimed at providing opportunities to channel the high potentials of Rivers youths to productive endeavours and to contain or reduce youth restiveness.

3.1 Objectives of the scholarship programme

The broad policy objectives include:

- Development of a pool of highly-skilled indigenes of the State from which the State government can draw upon in her development strides.
- Improvement of the access to knowledge and skills, facilitate academic excellence and promote high quality human capacity development in the State to be tapped by the private sector as well.
- Facilitation of the access of bona fide and qualified youths of Rivers State origin to appropriate quality education outside the shores of the country.
- Expansion of the social network and sphere of influence for graduates of Rivers State origin.

3.2 Categories of Awards and Courses:

There are three categories of award namely:

a) Greater Horizon Opportunities Programme (GHOP – Secondary schools);

b) Undergraduate (UG - tertiary); and

c) Postgraduate schemes (PG - tertiary).

3.2.1 Greater Horizon Opportunities Programme (GHOP)

The concept of the programme was to provide opportunities for talented and less privileged rural and urban slum children to obtain secondary education in high quality schools across the country. In so doing, pupils from primary schools in the 23 local government areas (LGA’s) across the State are selected and sponsored for a 6-year secondary school education. The Agency’s responsibilities include identifying competitive quality secondary schools across the country, securing admission and placement of the beneficiaries and facilitating funding of the programme.
3.2.2 Key Policy Thrusts of GHOP

3.2.2.1 Eligibility

The Agency only awards scholarships to children who have met the following criteria:

- Family members of staff of the Agency are ineligible for this award.
- They must be of Rivers State origin and not above the age of 12 years by the commencement of the programme.
- Shortlisted from public primary schools in the State in which they must be in their final year.
- Completed the relevant application forms for the programme, providing all information including their local government identification that will lead to the selection of the desired kind of candidates with the highest financial needs who have applied.
- Taken the aptitude test and passed all other requirements needed for the placement
- For scholarships that target the children of low income parents, a means test may be administered to further elicit candidates’ verifiable socio-economic background.
- Consideration would be given to merit as well as gender equity in the selection of beneficiaries.
- There will be a fairly equal representation of the local governments in the list of final candidates selected for the programme.
- Distribution of candidates to the various schools would be by balloting in the presence of their parents.

The focus of this initiative is to ensure the sustainability of the programme by adopting measures that will facilitate the availability of funds and ensuring that there are no cracks in the selection process to dilute the impact on the target beneficiaries.
3.2.2.2 Selection of Training Institutions

In the course of new in-takes into the programme, consideration must be given to the following characteristics in the selection of training institutions:

1. Teaching-learning resources – teacher-student ratio, maximum number of students per class
2. School environment including boarding facilities, cross-cultural outlook
4. Discipline
5. Fees
6. Curricula
7. Location – accessibility

Monitoring of schools and beneficiaries will be a standard feature of the programme. The continuation of existing schools in the programme will be the subject of continuous assessment. Where standards appear to have declined, existing schools can be removed from the list of partner schools ensuring that no new beneficiaries are sent to such schools. The weights to be attached to each of these factors in the selection of beneficiary schools will be ratified by Executive Director/Chief Executive Officer before new schools are brought on stream or existing partner schools retained.

The focus of this research is however on the undergraduate and postgraduate awards (tertiary awards) since these are the beneficiaries or recipients that are sent abroad and more likely to have the immediate impact on the labour force/manpower pool for the State.

3.3 The Overseas Scholarship Award Programme – Tertiary Institutions

The award is open to indigenes of Rivers State who have met the age and academic requirements and are therefore eligible to apply for the Overseas Scholarship Award. The programme is of two categories or level of award; the undergraduate (UG) and post graduate (PG). For undergraduate studies (UG), the applicant must have attained the age of 16 and no
more than 21 to qualify. For post-graduate (PG) awards, applicants are expected to be not above 35 years of age. Annually, the Scholarship Department of RSSDA will advise on the academic conditions to meet so as to qualify for both levels (UG or PG) of award.

Currently, 10% of the annual awards are offered to applicants who are non-indigenes of Rivers State. Such persons will show evidence of having resided or their parents have resided in Rivers State for a continuous period of no less than 10 years as well as tax certificate for the last three years. RSSDA Scholarship Award aims to promote knowledge, build capacity and develop technical skills through formal learning for qualified indigenes of Rivers State. The award also targets a percentage of non-indigenes who can show evidence of domiciliation in Rivers State for a continued period of ten (10) years (Rivers State Sustainable Development Agency, RSSDA, 2008).

The overseas scholarship award provides international (abroad) scholarships at selected universities overseas and is an important component of the Rivers State Government’s programme on youth development and strengthening for employability. It supports the Agency's mandate on poverty reduction and sustainable development by providing opportunities for long and short-term study and professional development and aim to:

- develop capacity and leadership skills so that individuals can contribute to development in Rivers State and Nigeria; and

- build people-to-people links at the individual, institutional and country levels.

The scholarships aim to contribute to the long-term development needs of beneficiaries for purposes of empowering them with professional skills and capacity to compete favourably for employment. The awards provide opportunities to undertake full-time undergraduate or postgraduate study at selected foreign universities.

RSSDA determines the priority areas of study through the selection of courses to fill the manpower needs of the State. As at 2014, the areas of study for the awards are:

- Medicine and medical sciences
• All areas of engineering
• Natural sciences
• Computers and ICT
• Social sciences (Economics only). This had included Law earlier but stopped in 2011
• Urban and Regional Planning (an addition in 2012)

The destination countries that have so far been covered by the awards are:

1. United Kingdom (UK)
2. Ireland
3. Canada
4. Singapore
5. India
6. United States of America (USA)
7. Czech Republic
8. Hungary
9. China *
10. Ukraine *
11. Switzerland *
12. Netherlands *
13. St Vincent and the Grenadines
14. Kenya *

Note * - Concession awards (Governor's nominated candidates) were made to students already in these 5 destination countries. They were not originally planned destination countries for the awards.

The minimum academic qualification criteria for the award are 5 credits in English Language and Mathematics and 3 other subjects related to the chosen field of study.
The Awards take into cognisance the special needs of empowering women to participate in the economy, leadership and education, and enhancing the lives of people with disability. RSSDA encourages women and people with disability to apply for the Scholarship awards.

To ensure the development impact of scholarships, all awardees are encouraged to return home on completion of their studies so they can contribute to the sustainable development of the State.

The awards cover the following fees and entitlements: full tuition fees, return air travel, establishment allowance, contribution to living expenses, an Introductory or A Level Programme, Overseas Student Health Cover, visa expenses. Subject to requirements and approvals, the awards may also cover:

i. pre-course Language training fees

ii. supplementary academic support

iii. fieldwork (for research purposes only)

The Award does not provide any financial or other support for the dependants of awardees. Awardees are responsible, including financially responsible, for their family members who accompany them to take the scholarship award.
**Programme Creation**

- Develop policy & guidelines
- Establish desired programme outcomes
- Manage contracts with stakeholders and Educational Institutions
- Manage scholarship online systems
- Incorporate feedback from alumni into programme creation
- Promotional activities

**Applicant**

- Applicants learn about RSSDA Award Scholarships through advertisements (employer, newspaper, radio, media released etc)
- Conduct promotion, targeting candidates in fields that align with the Programme’s study area of focus

**Partner Institutions/Mentors**

- Promote RSSDA Awards and relevant courses

**Awardees**

- Submit application form
- Short-listed applicants are tested and interviewed
- Provide on-demand assistance to applicants for selection processes
- Check application documents & conduct eligibility checks
- Short-list, Test & Interview applicants
- Notify applicants of selection outcomes
- Liaise with Govt House for supplementary awards (Governor’s List)
- Request placements at institutions for UG awards & Notify institutions of awardees with disability/special needs

**RSSDA Awards Office**

- Provide awardees with pre-departure materials
- Arrange in-country language training, learning support and/or other assistance
- Arrange awardees’ travel, assist with health checks & liaise with Embassies for visa procurement
- Work with institutions on requirements for awardees with disability/special needs
- Provide pre-departure briefings

**Institutions/Mentors**

- Provide pre-departure briefings
- Assist partner organisations in selecting appropriate subjects
- Provide academic and welfare support needs
- Establish desired programme outcomes
- Provide access to the RSSDA Awards
- Notify Posts of awardees’ departure dates

**Arrival & Return Home**

- Arrange awardees’ travel
- Provide in-country language training, learning support and/or other assistance
- Provide pre-departure briefings
- Assist partner organisations in selecting appropriate subjects

**Supplementary**

- Participate in Alumni associations, promotional activities, selection panels and pre-departure briefings for new awardees
- Act as ambassadors to promote the RSSDA Awards in the wider community
- Provide professional assistance (continuing education and training) to returned awardees through the Alumni Associations
- RSSDA Awards Office Provide funding for Alumni Associations

**Monitoring & Evaluation**

- Awardees participate in on-course and post-course surveys
- Conduct tracer studies to measure effectiveness of scholarships, including linkage and leadership outcomes
- Conduct reviews and evaluations as determined by HCD policy

*Monitoring and evaluation at all stages of the cycle feed into programme design, selection and appointment, and provides the basis for reporting.

**Source:** RSSDA Policy and Procedures Manual (2013)
Proposal to commence annual

- Develop proposal on annual scheme
- Request should include cost estimate, number of awards, categories and countries where courses are tenable
- Define scope of work to be performed implementers, consultants, if any.

Secure approval

- Obtain approval from ED/CEO
- Define scope of work to be performed

Engage Consultant/Implementer(s)

- Prepare & submit TOR
- Secure consultant

Advertise Awards

- Produce advert material
- Produce & distribute posters
- Publish in HCD System and national dailies

Process Applications

- Receive & collate applications
- Screen applications based on set criteria
- Upload screened applications into HCD System

Shortlist Candidates

- Generate shortlist through HCD System
- Publish shortlisted candidates
- Produce & mail invitations to candidates

- Engage Consultant/Implementer(s)
- Prepare & submit TOR
- Secure consultant

- Produce advert material
- Produce & distribute posters
- Publish in HCD System and national dailies

- Receive & collate applications
- Screen applications based on set criteria
- Upload screened applications into HCD System

- Generate shortlist through HCD System
- Publish shortlisted candidates
- Produce & mail invitations to candidates

Select successful

- LGA quota basis
- Select successful candidates
- Shortlist for oral interview

Conduct Aptitude

- Produce exam materials
- Arrange logistics
- Provide aptitude test result

Publish awards

- Release result
- Paste award list
- Process award letters
- Issue award letters

Oral Interview

- Mail invitation to candidate
- Interview candidate based on set criteria
- Verify candidate records & status in community
- Get approval for award list

Select successful

- LGA quota basis
- Select successful candidates
- Shortlist for oral interview

Conduct Aptitude

- Produce exam materials
- Arrange logistics
- Provide aptitude test result

Assign awardees to

- Secure admissions
  - Process travel documents
  - Place awardees to schools
    - Conduct orientation/briefing of students
    - Awarded depart

Acceptance

- Receive acceptance forms
  - Enter awardees into HCD System
- Publish awards

- Release result
  - Paste award list
  - Process award letters
  - Issue award letters

- Mail invitation to candidate
  - Interview candidate based on set criteria
  - Verify candidate records & status in community
  - Get approval for award list

- LGA quota basis
- Select successful candidates
- Shortlist for oral interview

Conduct Aptitude

- Produce exam materials
- Arrange logistics
- Provide aptitude test result

Manage awardees

- Update information
  - Process payments
  - Manage feedbacks
  - Report performance

M&E

- Collate records
  - Visit awardee institutions
  - Produce report
  - Validate report
  - Evaluate impact & recommend

Strategy

Figure 3.2: Administrative Process Flow Chart of RSSDA Scholarship Award
3.4.1 Selection Criteria

Applications are:

- Reviewed and assessed using the eligibility and academic conditions as selection criteria. Candidates must possess the minimum requirement of 5 Ordinary level credits in relevant subjects in West African Examinations Council (WAEC) at not more than 2 sittings. The credits must include English Language and Mathematics. Candidates must in addition submit a letter of identification from the relevant Local Government Council.

- For the Undergraduate (UG) programme, a shortlist is generated and successful applicants are invited to a testing centre where basic testing parameters will form the next layer assessment and selection.

- For the Post Graduate (PG) award, applications are processed based on documentations submitted (university admission letter, UG degree certificate with a second-class upper grade). Depending on the quality of applicants. Aptitude testing for shortlist qualified candidates was introduced from the 2013/14 academic session.

- Successful applicants are progressed to the next level screening which consists of a panel oral interview. To ensure a level playing field, candidates for the oral interview are put through 5 main processes:
  
  i. Admissibility on age and gap in years of study
  
  ii. Identification of candidate
  
  iii.Certificate verification
  
  iv. Communication skills
  
  v. Comportment and carriage including presentation

- Final selection of candidates is based on the following criteria:
i. Absolute Merit in which best overall students irrespective of local government area (LGA) of origin (usually the highest scoring between 10 to 16 candidates);

ii. Equality of LGAs in which each LGA is guaranteed a minimum number of places as long as they meet the cut-off for their LGA;

iii. Special cases, especially, the physically-challenged candidates; and

iv. Protocol (Concession) list through which intervention is made by nominations by the Governor.

- No award is made without verification of local government of origin. If there is evidence of fraudulent process which includes withholding of information or presentation of misleading information so as to enhance an applicant's chance, such award will be withdrawn if already administered.

RSSDA is responsible for procurement of international passports, visas and make travel arrangements as well as university placements for undergraduate studies.

3.4.2 Responsibilities

The RSSDA Scholarship Department is responsible for:

- developing and maintaining scholarship terms and conditions, and ensuring consistency in award administration;

- processing applications (hardcopy and online), managing the selection process;

- The Scholarship Department through the General Manager Human Capital Development shall forward recommendations on the selection guidelines to the Executive Director/CEO for approval and shall receive the prior approval to select awardees to participate in first and second level assessments;

- ensuring that all selection processes are equitable and transparent and that relationships between applicants and Agency staff or with scholarship implementers are disclosed and managed appropriately;
liaising with the appropriate Government authorities on the nomination and determination of the Protocol List;

- notifying all applicants of the outcome of the selection process;

- forwarding placement requests to institutions (regards UG studies), and ensuring that documents accompanying the requests have been properly certified; also, arranging an in-country A-Level courses where relevant and arranging travel to the Country of Study for awardees;

- advising institutions of awardees with disability who require additional assistance, liaising with institutions to determine the level of support they require and providing any additional support for awardees with disability;

- providing pre-departure briefings to awardees, including use of alumni where possible;

- reporting on the academic performance of awardees as provided by the various institutions, overseeing performance and contractual matters relating to the managing contractors (if applicable) as well as managing contacts with institutions where necessary, mentors and other programme contractors;

- promoting and supporting RSSDA Awards Alumni networks, scholarship promotion, selection and mobilisation processes; and

- maintenance of students and timely response to students for fees payments, allowances and all approved support services.

The Division conducts a Character and Identity verification for awardees and ensure these are completed before awardees depart for studies.

A number of implementers will be contracted in various countries to act as mentors to the students to help with their integration. The roles and responsibilities of these implementers will be generally set out in the terms of their agreement/contract. However, the Scholarship
Department shall be responsible, for clearly defining responsibilities of the implementers and ensuring that they are aware of all policies, procedures and guidance on the administration and management of the Scholarship Awards

### 3.4.3 Applicants and Awardees

Applicants are responsible for reading and understanding the terms and conditions underpinning the Agency’s Scholarship Awards. Awardees are responsible for providing complete, true and accurate information at all times including, but not limited to, the information provided in their award and visa applications.

Applicants and awardees must not give false or misleading information at any time in respect of their award application or while studying. Giving false or misleading information is a serious offence which will lead to the instant withdrawal of the award and may lead to the prosecution of the offender.

Awardees are responsible for their academic and personal conduct as stated in their letter of award and the responsibilities of the awardees must be clarified before they sign to accept the scholarship offer.

The Scholarship Award process articulates and provides further guidance on the activities to be carried out for the award of RSSDA scholarship.
<table>
<thead>
<tr>
<th>Activity Step</th>
<th>Sub-activities/Process</th>
<th>Timeline</th>
<th>Action Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request to commence annual scholarship award</td>
<td>-Send request to SLT for commencement of the year scholarship award -Request should include budget, number of awards, categories and countries where courses are tenable to secure approval.</td>
<td>GM, HCD</td>
<td></td>
</tr>
<tr>
<td>Secure approval</td>
<td>-Provide justifications for the budget and award number. -Define scope of work to be performed.</td>
<td>GM, HCD (in Liaison with Scholarship Manager), SLT</td>
<td></td>
</tr>
<tr>
<td>Engage Consultant</td>
<td>-Prepare terms of reference stating scope of work to be performed by consultants. -Send TOR to procurement &amp; contracting for outsourcing services required.</td>
<td>Scholarship Manager/Procurement &amp; Contracting</td>
<td></td>
</tr>
<tr>
<td>Advertise Awards</td>
<td>-Meet media to discuss details for advert. -Media prepare advert and liaise with radio and TV stations. -Activate System Application page.</td>
<td>Scholarship/Media Depts.</td>
<td></td>
</tr>
<tr>
<td>Distribute &amp; Collate Application Forms</td>
<td>-Monitor online applications. -Liaise with Interface to distribute and retrieve completed application forms. -Enter hardcopy completed forms into database (HCD system). -Collate all application forms.</td>
<td>Scholarship/Interface</td>
<td></td>
</tr>
<tr>
<td>Shortlist Applicants</td>
<td>-Crosscheck criteria and guidelines for online applications through System criteria settings. -Crosscheck criteria and guidelines for hardcopy applications through sorting. -Shortlist applicants that meet criteria for aptitude test.</td>
<td>Scholarship/Consultant</td>
<td></td>
</tr>
<tr>
<td>Aptitude Test</td>
<td>-Send SMS message to shortlisted applicants containing exam date, time &amp; venue. -Conduct aptitude test. -Publish exam scores. -Meet and agree on set cutoff point considering performance and LGA quota basis. -Shortlist successful candidates.</td>
<td>Scholarship/Consultant</td>
<td></td>
</tr>
<tr>
<td>Select Successful Candidates</td>
<td>-Send SMS to successful candidates inviting them for oral interview stating date, time and venue.</td>
<td>Scholarship/Consultant</td>
<td></td>
</tr>
<tr>
<td>Oral Interviews</td>
<td>-Verify records. -Interview candidates generally.</td>
<td>Scholarship Dept, GM, HCD, ED &amp; Consultant</td>
<td></td>
</tr>
<tr>
<td>Candidate eligibility verification</td>
<td>-Collate candidate records. -Investigate candidate LGA/State of origin.</td>
<td>Scholarship/Interface</td>
<td></td>
</tr>
<tr>
<td>Release results</td>
<td>-Give approval to shortlisted successful candidates. -Publish or paste approved shortlisted candidates at LGAs Headquarters. -Issue award letters. -Enter awardees list into database for Administration.</td>
<td>ED/CEO, GM, HCD, Scholarship &amp; Interface Depts.</td>
<td></td>
</tr>
<tr>
<td>Assign Awardees to Schools</td>
<td>-Secure admission for awardees. -Process awardees travel documents. -Place awardees to schools. -Awardee depart to assigned school.</td>
<td>GM, HCD, Manager, HOUs, Officers and Consultants</td>
<td></td>
</tr>
<tr>
<td>Manage Awardees</td>
<td>-Update awardee information. -Process awardees payments. -Manage awardee feedbacks. -Report awardees performance status every semester for progression.</td>
<td>Manager, HOUs and Officers</td>
<td></td>
</tr>
</tbody>
</table>

3.5 Summary of the Procedures and Processes

The RSOSP administrators run a transparent government-funded overseas scholarship programme. The awards are publicly advertised for eligible candidates to apply and the release of the result is announced in the media and made public with copies for Rivers State Government publications and website for public access. They are also pasted on public notice boards. The processes, accounts and awards are audited by government auditors as well as externally appointed professionally registered independent auditors. The administrators produce and publish audited Annual Reports including progress reports on the administration of the scholarship programme with information on the number of awards, progress in schools etc. The data are therefore considered to come from a reliable and verifiable source and sufficiently valid for the purpose of this study.
CHAPTER FOUR

CONCEPTUAL FRAMEWORK

This chapter discusses the factors which form the dependent and independent variables with which the study is concerned and the hypothesized relationship between them. This relationship seeks to explain the topic of interest and the proposed explanatory model for the study. The conceptual framework is inferred from the theoretical standpoint of the relationship between the factors associated with the human capital development policy of the Rivers State Overseas Scholarship Programme (RSOSP) designed to bring back graduated students from their study abroad.

4.1 The Study Variables

As discussed in Chapter 2 in the review of extant literature, economic theorists argue that investment in human capital through education leads to greater economic outputs. This informs why human capital theories directly link investment in human capital development with education, and the role of human capital in economic development, productivity, growth and innovations that could encourage further production of goods and services.

Based on the above theoretical foundation of human capital development and investment in education, the conceptual framework of this study is designed to establish that investing in the education of students at the tertiary level on the RSOSP will develop human capital to fill the shortages in the skilled manpower at home (Rivers State and Nigeria). This study proposes that such a relationship could be established when a scholarship award recipient has successfully graduated and returned home (RH) from study abroad. This outcome itself is dependent on a number of other factors such as gender (GD – male or female), students’ age (AG – up to 27 years or over 27 years), selection criteria (SC – merit or protocol), successful graduation (SG – successfully graduated or not-successfully graduated),
immigration policy of study destination country (IPDC – strict or liberal), level of
development of the study destination country (LDDC – developed or developing), and level
of award (LA – postgraduate or undergraduate). Arising from this, the conceptual framework
of the study is formulated as follows:

\[
RH = f(GD + AG + SC + SG + IPDC + LDDC + LA) \quad (4.1)
\]

Where:

- **RH** = Return Home from study abroad
- **GD** = Gender
- **AG** = Age
- **SC** = Selection Criteria

**Figure 4.1:** Factors Influencing the Return Home of Awardees (Beneficiaries) of Rivers State Overseas Scholarship Programme

**Source:** Researcher’s Conceptualization from the Related Literature Reviewed, 2016.
As shown in Figure 4.1 above, the dependent variable in this study is return home (RH). It is conceptualised that whether or not a student returns home (RH) depends on seven factors which are the independent variables. These are: Gender (GD), Age (AG – using the mean age of the biological age of the students on the programme), Selection Criteria (SC); Successful Graduation (SG), Immigration Policy of the study Destination Country (IPDC) using the study destination country's immigrants' tolerance level index (ITLI) as a proxy; level of development of the study destination country (LDDC – i.e. whether it is a developed or a developing economy) using the country's Human Development Index (HDI) as proxy; and Level of Award (UG or PG). Essentially, the seven independent variables are expected to predict the likelihood of students to return home from study abroad on the government-funded overseas scholarship.

The relationship between the dependent variable and the independent variables is conceptualized to have a link with the policy goal of the Rivers State Sustainable Development Agency (RSSDA) which is targeted at the development of a pool of highly-skilled manpower for the home country. This human capital development investment in education is proxied as the Rivers State Overseas Scholarship Programmes (RSOSP) which is administered by the Rivers State Sustainable Development Agency (RSSDA). The development of human capital for the State could be possible if, and when, a recipient successfully graduates and returns home. The probability of this depends on a number of factors as justified below.
4.2 Justification of the study variables and the relationships

4.2.1 Dependent (Outcome) Variable

Returned Home (RH): This is a dichotomous variable with Return Home or not Return Home as the outcomes. It is conceptualised in this study that students are expected to return to their home country after graduation from their study abroad. This is to enable them add to the pool of highly-skilled manpower available for employment and to contribute to the development of the state (Rivers) and the country at large. There is a clause in their scholarship award agreement obligating them to return at the completion of their studies abroad. For the purpose of this study, RH is determined as the point at which a student has requested for a flight ticket to return to Nigeria irrespective of whether or not they have actually graduated. This is a dependent variable that has the likelihood of associating with the seven (7) independent variables as expounded above.

From the operation of the scholarship programme, it is a requirement and therefore an expectation that students who were awarded the overseas scholarships for a qualifying course, country and period of study under the scholarship programme and have requested return tickets back to Nigeria are deemed to have returned home. The factors that influence or are associated with this return home from study abroad constitute the explanatory or independent variables. They are conceptualised in this study to be (i), gender (ii), age (iii), selection criteria (iv), successful graduation (v), immigration policy of the study destination country proxied by its immigrants’ tolerance index (vi), level of development of the study destination country proxied by its human development index, and (vii) level of award. Each of these variables is conceptualised to have the likelihood of association with the dependent variable in various ways.
4.2.2 Independent (Predictor) Variables

(a) Gender (GD): This is a demographic variable that defines the sex of a student on the basis of male or female. As an independent variable, the study would test for its impact on the decision to return home (RH) of the awardees by identifying the numbers of male students and female students who were awarded the scholarship and how it affected their returning home within the period covered in this study. The justification for including this as an independent variable in the study is based on the assumption that being a male or female is likely to influence the decision differently on whether or not to return home. As such it becomes necessary to provide the empirical probability indication that being a male or a female student has more or less likelihood to predict returning home. In order to achieve this, it is necessary to conceptualize the relationship in such a way that the likelihood of each (say a male student) to return home is separated from the other (female student).

The separation of males and females for the purposes of this study is justified on the evidence from previous studies of the academic performances between males and females. Studies of gender academic performances have found that, in general, females score higher grades than males (Lao, 1980; Fergusson and Harwood, 1997; Conger and Long, 2010; Voyer and Voyer, 2014). The reasons that have been put forward for this lower level of academic achievement by males have included males’ disruptive classroom behaviour leading to lack of concentration and differences in family upbringing. A handful of studies, however, found that males performed better than females (Siematowe, 1996; European Commission, 2009; Emaikwu, 2012) but these findings are relatively few in comparison with the vast majority of findings of better overall performances by females. The differences, if any, in gender academic performances would therefore be of interest in this study.
In respect of return home (RH) from study abroad, no previous studies were found to show any differences between the actual or intention to return home from study abroad between males and females but it would be of interest to this study to find out how gender was associated with or how it influenced the likelihood of return home from study abroad.

(b) Age: Age is a demographic variable that defines the biological age category of a student. In this study, it is captured as the biological ages of all the students sampled. The sample was divided into two groups based on the average age of the students in the sample: (i) Younger – up to 27 years; and (ii) Older – above 27 years.

As discussed below, previous research has shown that age is an influential factor in academic performances. In this research, therefore, it is conceptualized as a factor that can be related to both the academic performances of the students as well as influence their decision to return home from their study abroad. A review of the literature showed mixed findings of the academic performances of older and younger students. Some studies found that younger students performed better because they had fewer responsibilities and therefore more able to concentrate better and as such tended to be more focused on their academic pursuits than older students (Ebenuwa-Okoh, 2010; Mlambo, 2011; Zoega et al., 2012). However, Crosta et al., (2006) and Kyoshaba (2009) found differently that older students performed better because they were more mature and hence more focused.

With regard to returning home after study abroad, Bijwaard and Wang (2016) found that older students (over 30 years) were more likely to return home than younger students. These academic discourses justify the inclusion of age as an independent variable as a potential factor influencing successful graduation as well as a predictor of the likelihood to return home from studies abroad.
(c) Selection Criteria: This variable defines the route through which a student was awarded the scholarship onto the Rivers State Overseas Scholarship Programme. There were two methods of gaining an award namely; merit and protocol (government concession). In the case of the Merit selection, in addition to the required Ordinary Level equivalent grades, it also required passing an aptitude test and an oral interview. This was therefore a strictly academic benchmark for eligibility for the award. On the other hand, protocol defined the mode of award onto the scholarship programme by government nomination without the additional aptitude test and interview. It only required possession of the required minimum of at least a Grade C in five (5) credits in the West African School Certificate examinations or equivalent level with other non-academic considerations. The credits should include English Language and Mathematics. The other three (3) subjects were required to be related to the intended course of study. Thus, the selection criteria as conceptualized in this study, is an independent variable that identifies the number of students who were awarded the scholarships using one of the two selection criteria – merit or protocol. It is conceptualised that the mode of selection of the student for the award of scholarship is associated with their successful graduation and their return home from study abroad.

The justification for inclusion of selection criteria is further buttressed by the need to see if the findings here would concur or differ from previous research findings. In effect, they provide a theoretical expectation from this study in respect of performances of students selected under each of the criteria. For example, studies have found that students who were further tested above the standard examination entries tended to perform better than those accepted using only the minimum criteria (Ali, 2008; Emaikwu, 2012; Mercer et al., 2012). Perna et al., (2015) also reported that the academic eligibility criteria for the Bolashak programme may increase the likelihood that recipients will successfully complete an educational programme in another nation. However, the findings by Adenegan and Osho
(2012) disagreed with merit students performing better. They found that prior qualifications with no additional tests have been sufficient to gain more superior academic performances. It would therefore be of research interest to see how the findings in this study align or not with the findings of previous studies.

**d) Successful Graduation:** This is an independent variable that measures students’ successful completion of their studies and the likelihood of their returning home from the programme. The overseas scholarships were awarded in the expectation that the recipients will return home to contribute to the highly-skilled manpower pool at home. All the students signed up to a clause in the agreement that they would return home at the completion of their studies. In order to add to the manpower pool at home, they must first acquire the skills (successful graduation) and then return home afterwards. Successful graduation therefore is a necessary condition in order to fulfil the sufficient condition of returning home to add to the manpower pool. Successful graduation is therefore conceptualised in this study to be an important factor influencing the decision to return home or not from study abroad as graduated students are more likely to find employment opportunities at home or abroad than not successfully graduated students and therefore it is a potentially deciding factor.

The non-return of successfully graduated students from study abroad constitutes a brain drain on the resources of the sponsoring country. Although successful graduation was not separated in most studies of students completing their studies and returning home, studies on brain drain (Baruch et al., 2007; Altbach and Ma, 2011; Mishra, 2013) reported extensively on students who have completed their studies abroad (successfully graduated) and either returned home or stayed abroad (brain drain). Bijward and Wang (2016) found that the ability to obtain employment in the country of study (Netherlands) influenced whether students stayed or went back home.
In buttressing the importance of successful graduation, researchers in the UK and North America found that completing higher education was one of the strongest determinants of returning to the parental home, more so than any other change in economic activity (DaVanzo (1983); DaVanzo and Goldscheider, 1990). The results from the cohort follow-up showed that people who leave home for reasons relating to education are more likely to subsequently return after graduation (Briscoe and Wilson, 2003). Also, Adenegan and Osho (2012) examined the relationship between students' academic performances and ability to contribute to the development of their country. Their study concluded that before a student is said to be able to contribute to the development of his/her country, the student should have graduated from his/her studies abroad. Successful graduation (SG) is therefore a prerequisite for a student to return home (RH) to add to the pool of human capital stock. It is justified therefore to include successful graduation as a predictor independent variable in factors influencing the likelihood of return home from studying abroad.

(e) Immigration Policy of Destination Country (IPDC). Every country has immigration policies that stipulate the criteria for entry into and residency in the country. These policies determine what types of visas are issued to students to enter into a country to study and return home or take up residence at the end of their studies. Some policies include the opportunities for paid or unpaid employment during studies and / or after graduation. In practice, some countries have very strict requirements for students to return to their home countries at the end of their studies while others have more liberal immigration policies which allow students to take up residence. In the USA for example, an F1 Student Visa stipulates very stringent rules on students who wish to remain behind after their studies. In Canada on the other hand, there is more flexibility because students can apply for residency after three years of studying or staying in Canada. In India and Singapore, the students' visa regulations required legal guardianship of the government-funded students throughout the duration of their studies in
their countries. They further stipulated that the students returned to their home countries at the end of their studies.

Immigration policy is therefore a key variable in determining whether or not students can study and stay behind at the end of their studies. Since there are no published indices of a country's immigration policies, this study uses the Immigrants Tolerance Level Indices (ITLI) published annually in the internationally recognised Social Progress Index as a proxy for each country's immigration policy. This index defines tolerance for immigrants as the extent of liberty of a country with respect to the inflow and outflow of people in a country. It measures the transit of persons across its borders into the country, but especially those that intend to work and stay in the country. It asks “Is the city or area where you live a good place or not a good place to live for immigrants from other countries?” (p.144). Further justification for using this indicator is found in the study by Tremblay (2004) who pointed out that some OECD member countries relaxed their immigration policies to attract qualified and highly-qualified foreigners to sectors where there were labour shortages. It can be reasonably assumed that these measures were aimed at retaining top class foreign students for their own workforce. Indeed, Tremblay (2004) commented further that some countries were increasingly encouraging growth in international student numbers while allowing foreign students to apply for resident status from within their territory, as part of an immigration recruitment strategy.

In general, stricter immigration policy countries tend to send back students to their home countries after studies thereby increasing the likelihood of return home whereas liberal immigration policy countries have more relaxed policies enabling students to be able to stay behind after completion of their studies thereby reducing the likelihood of returning home. Immigration policies of study destination countries are therefore conceptualised in this study as strong indicators of likelihood to return home or not from study abroad.
(f) **Level of Development of Destination Country (LDDC):** The United Nations uses its Human Development Indices (HDI) to rank countries according to their levels of attainment of various socio-economic indicators and measures. The level of development of a study destination country in this study is measured in terms of its Human Development Index (HDI) which measures its quality of life and sustaining economic growth. HDI was developed by the United Nations Development Programme (HDR, 2015) as a composite index measuring average achievement of a country in basic areas of life expectancy at birth (health), adult literacy rate and average years of schooling (education), poverty level, gross national income (GNI) per capita (economy). The index is used in this study as a proxy for the level of development of the study destination countries. The higher a country's HDI, the higher its life expectancy, education, income per capita and other socio-economic indicators. Conversely, a lower HDI suggests a lower general standard of living in the country.

In general, studies have shown that developed countries tend to have good facilities and conducive environments to "pull" students to remain behind after their studies abroad. Conversely, harsh and difficult employment opportunities as well as other adverse social and security factors at home tend to "push" students away from developing countries who usually sponsor these students (Ghosh and Ghosh, 1982). The push and pull factors are the subjects of many studies on whether or not the level of development of a country impacts the return home intentions of students studying abroad. The general supposition is that the economies of the developed study destination countries have better job opportunities and prospects (pull factors) and therefore attract students to stay behind than the developing countries (push factors) (Baruch, 2005; Li and Bray, 2007; Lewin, in Baruch et al., 2007; Dimmock and Leong, 2010). At 51%, Nigeria is a developing country. Thus, the level of development of study destination country is a potentially important determining factor on the
likelihood of return or not to return home from studying abroad and therefore justified as a factor for inclusion as an independent variable in this study.

(g) **Level of Award (LA):** This is an independent variable which defines the programme categories of level of study of the award to students in the scholarship programme. The levels of award are postgraduate (PG) or undergraduate (UG). The undergraduate awards were to mostly younger recipients (up to 21 years old) while the postgraduate awards were mainly to older students (up to 35 years old). Also, the duration of the UG award was up to 4 years or longer for medicine but the maximum for PG was usually one year. RSSDA Policy and Procedures Manual (2013). McMahon, (2009) cited in Perna *et al.*, (2015) noted that the benefits and costs of providing funding for different degree levels should be considered in light of a nation’s higher education system and economic needs. He argued that the net benefits of each of the levels of study to the development of a country were unclear and it was also not clear how the benefits vary based on both degree level and length of time spent studying abroad. He opined that the choice of any of the levels depended on the prevailing state of development of the country needs and aspiration of the sponsoring country. British Council and DAAD (2014) and Perna *et al.*, (2014) also posited that the level (undergraduate or post-baccalaureate) and length of study abroad could influence the nature and benefits of the human capital developed and also determine its contribution to the home country when such developed skills were made to return home because the societal benefits of foreign education to a home nation depended on which nation paid the costs of attendance and whether students lived and worked in the host nation after completing their programmes. The Commonwealth Scholarships Commission Report (2011) also reported a high rate of return home for post graduate awards in relation to students who were awarded scholarships to study abroad and return to contribute to the development of higher education in their home countries.
In view of the above findings and the importance of the return of the students back home for each of the categories of the level of award (LA), it is justified as a variable to test its association with the likelihood of return home from study abroad.

4.3 Hypotheses of the Research

The study hypotheses are postulated in null form in order to show the power of the independent variables (covariates) in explaining and predicting the behaviour of the dependent variable (return home) in the study. In addition to the justification of the variables being studied, seven hypotheses are postulated as follows:

**Likelihood of Return Home (RH) from Study Abroad**

✓ **Hypothesis One \( (H_{01}) \)**

The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with gender (GD – male or female) of the awardees.

This is a dichotomous variable with a student being either a female or a male. In the justification of variables, studies were found that generally showed that, on average, females performed better academically than males. Having identified the importance of the variable, no studies were found to show the rates or likelihoods of return home by either males or females from study abroad. There would appear not to be basis for a theoretical expectation of a gender impact on the likelihood of return home from abroad. It would therefore be of research interest to find out the impact, if any, of gender on the likelihood of return from study abroad.

✓ **\( H_{02} \)**

The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with age (AG – Younger or Older) of the awardees.
The ages of the students have been divided into two (2) categories on the basis of their mean average age making this a dichotomous variable of either Younger (up to 27 years) or Older (over 27 years). Study by Bijwaard and Wang (2016) found that older students were more likely to return home than younger students. This creates a theoretical expectation that older students would be more likely to return home than younger students from study abroad.

✓ **H$_{03}$:** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with selection criteria (SC-merit or protocol) of the awardees.

This is also a dichotomous variable of either a merit or protocol student. While studies by Adenegan and Osho, (2012) and Emaikwu (2012) found no major differences between the academic performances of merit and protocol students, Mercer et al., (2012) and many others found in favour of merit students performing better academically. No studies were found however on actual return home rates or intentions and inclinations to return home of any of the categories of selection criteria. As a result of this, there are no theoretical expectations of selection criteria as a variable on the likelihood of return home from study abroad.

✓ **H$_{04}$:** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with successful graduation (SG-graduated or not graduated) of the awardees.

This is a dichotomous variable of either successfully graduated or not successfully graduated. In the current literature, completion of studies (successful graduation) and return home from study abroad are combined in studies on brain drain. Failure to return home after completion of study abroad is regarded as brain drain. Successfully graduated students are more likely to obtain employment in study destination countries as well as their home country. It is therefore expected that they are more likely to return home than not successfully graduated

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students and as such they form the theoretical expectation of the influence of successful graduation on likelihood to return home from study abroad.

✓ \( H_{05} \): The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the immigration policy of the study destination country (IPDC-stricter or liberal) of the awardees (IPDC is proxied by immigrants tolerance level index of the country - ITLI).

This is a continuous variable of the indices of level of tolerance for immigrants as a proxy for immigration policy of the study destination country. The range is from 0% (low end – stricter) to 100% (high end - liberal) indicating that some countries are more liberal than others. Immigration policy varies from country to country. The stricter the immigration policy, the more likely the host country’s requirement to return home after study abroad and therefore higher the likelihood that international students (awardees) would return home after completion of their studies abroad. Gimenez and Morgan (2014) found that the current British immigration policy limits the entry of overseas students into the British labour market and so increases the rate of return home of foreign students after their studies in the UK. In the Netherlands, residence permit are only granted for purpose of study such that international students are required to leave immediately they drop out or complete their programme (Overmars and Hendriks-Cinque, 2012). A country’s immigration policy is an important determinant of ability to stay behind following study abroad. It is therefore relevant for this research as it would be of interest to see how it affected the likelihood of return home from study abroad of the RSOSP recipients. The Immigrants Tolerance Level Index (ITLI) of the study destination country would be used as the proxy for this variable. Based on the findings of previous studies, the theoretical expectation is that the lower the index (stricter) the more likelihood of students returning home from their study abroad. Conversely, the
higher the index (liberal), the lower the rate of return home and less likelihood of return home.

✓ **H**₀₆: *The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of development of the study destination country (LDDC-developed or developing) of the awardees (LDDC is proxied by Human Development index of the country - HDI).*

This is also a continuous variable with a range from 0% to 100% with the indices representing the spectrum of developing countries at the lower end to developed countries at the top end indicating that some countries are more developed than others. Studies of brain drain by Gungor and Tansel (2008) and Baruch, *et al.*, (2007) found that the “pull” factors of developed countries and “push” factors of developing countries serve to respectively attract students to remain or discourage them from returning home from study abroad. The theoretical expectation is therefore that the higher the level of development (tending towards 100%), the less likelihood of return home of the students from their study destination countries abroad.

✓ **H**₀₇: *The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of the awards (LA-undergraduate or postgraduate) of the awardees.*

This is a dichotomous variable of either an undergraduate (UG) or a postgraduate (PG) student. There were no studies found showing the actual or the intentions or inclination likelihood of the rates of return home of undergraduate students from study abroad. However, regarding PG’s, the Commonwealth Scholarship Commission Report (2011) highlighted a very high rate of return home by PG overseas students. There were also two important components to the level of award which could influence the UG or PG levels in
their likelihood to return. As stated in the RSSDA Policy and Procedures Manual (2013), PG awards were for about 12 months and candidates up to 35 years whereas UG awards were for longer duration (4 years or more) and candidates up to 21 years. These two components could influence the likelihood of return home within this variable. For example, under the Canadian immigration rules, longer durations of stay in Canada increases the likelihood of residency. Based on this, the theoretical expectation of this hypothesis of level of award (LA), is that the PG students are more likely to return home than the UG students.
CHAPTER FIVE

RESEARCH METHODOLOGY

This chapter details the methodological approach which is used in this research in order to achieve its aim and specific objectives as stated in Chapter 1. The literature review undertaken in Chapter 2 had identified gaps in current knowledge that no techniques or tools presently exist to evaluate the relative success of an investment in education through a targeted government-funded overseas scholarships programme in contributing to developing human capital as proxied by pool of highly-skilled manpower (human capital stock). The overseas scholarship programme is a deliberate government intervention in education policy to develop human capital. This research is therefore an assessment study of a public policy of the relative success of developing human capital using the Rivers State Overseas Scholarship Programme (RSOSP) as a targeted education approach.

This chapter now looks at the approaches adopted for the study, with a methodology structure that stipulates the research design, study population, sample and sampling techniques, data required and sources, analytical procedure, model specification, justification of analytical framework, explanation and justification of study variables.

5.1 Research Design

This study adopts evaluation and quantitative correlational research designs. These research designs are considered appropriate for this study because the study implies an input-output approach in terms of policy goals (input) and outcomes (output). The nature of the data (secondary) used in this study for analytical purposes would accommodate the two research designs adopted.

Firstly, evaluation research design deals with systematic and comprehensive setting of the most worthwhile goals and the most efficient ways of combining and applying resources
for complete actualization of the goals of a given programme. For example, Kpolovie (2010) defines evaluation research design as entailing comparable data gathering and analysis for the purpose of enabling policy makers, practitioners or stakeholders to base their decision on evidence rather than prejudice or guesswork. Further, he submits that evaluation research design includes contemporary policy studies as well as retrospective analysis of past policies for the purpose of facilitating a better policy decision in the future.

Thus the type of evaluation research design adopted is policy-oriented evaluation research design which is centred on the purpose of generating change in existing policies and practices. This type of evaluation research design is adopted for critical examination of the efficacy or effectiveness of existing policy with a view to providing relevant information for making of new policy or modifying existing policy. Again, the essence of adopting this research design is because the Rivers State Overseas Scholarship Programme (RSOSP) is administered within the prescription of a set of policy goals, which are intended in this study to be aligned with expected outputs or outcomes.

Secondly, this study would also adopt a simple quantitative correlational research design. This is because research of this magnitude entails the establishment of either a more or less likelihood of the independent variables predicting the dependent variable (RH). It is aimed at having a better understanding of how the predicting variables (that is, the factors that affect return home) would influence the dependent variable (RH) by identifying the magnitude of variance (changes or variations) in the relationship between the dependent and independent variables. This is apt because, a simple quantitative correlation research is designed to depict the magnitude of variance in a relationship between two variables, in this case; return home and its determining factors.
5.2 Quantitative Research Approach

This study adopts a quantitative research approach using secondary data from a database of the beneficiaries (awardees) of the scholarship programme. The information and data are figures and actual numbers of students and so they lend themselves to a statistical, numerical analysis and interpretation based on numbers and logic rather than opinions. The study uses unchangeable data which is already in place (Nwankwo, 2011) that are readily available from reliable and verifiable database managed by the administrators of the scholarship programme on behalf of the Rivers State Government as well as internationally recognised data such as the Human Development Index published by the United Nations.

Quantitative research focuses on objective dimensions and numerical analysis of secondary data extracted from a source or database. Essentially, it concentrates on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon that has to do with association or relationship between variables of concern in a study as we have in the case of the conceptual framework. Further, quantitative research is a way of concluding results and validating or invalidating a hypothesis that establishes a relationship between variables – dependent and independent. Also, it focuses on objective measurements and statistical, mathematical, or numerical analysis of data collected through existing sourced data that adopted computational procedures (Babbie, 2010;Muijs, 2010).

Furthermore, the quantitative approach adopted here is an empirical ex post facto study which as posited by Kpolovie (2010) relates to retrospective investigations of events that have already occurred to identify possible causes and effects using the facts and information from the Rivers State Overseas Scholarship database which are readily available to analyse and to make a critical evaluation of the public policy objective of adding to a pool of highly-skilled manpower resource base for the State through overseas scholarship.
programme (investment in human capital through education). The quantitative approach would also appear more appropriate because the study tests hypotheses and looks at predictive abilities of the estimation models. The data collected is numerical and statistical in nature, and the analysis identifies statistical relationships. The approach would entail correlations, comparison of means and statistical significance of findings (Johnson and Christensen, 2008).

Another justification for the adoption of this descriptive quantitative research thrust is that the study would employ the binary outcome model of logistic regression to estimate the association (not causal relationship) between the dependent variable (Return Home) and its independent or explanatory or determining variables, which are gender, age, selection criteria, successful graduation, immigration policy of destination countries, level of development of destination countries and level of award.

5.3 Population of the Study

There is one dependent variable in this study, which is Return Home (RH) and is conceptualised as a function of those students who are part of the total number of students who have requested for tickets to finally return home from study abroad. Their final return home signals their availability to add to the pool of skilled manpower acquired from their successful graduation from study abroad. This is the critical stage of the human capital development process in this study. This stage therefore depends on the successful graduation of the students as well as returning home; both of which are fundamental for the event of adding to the skilled manpower pool to occur.

The recipients that qualified for inclusion in this study were all the awardees of the Rivers State Overseas Scholarship from the start of the programme in July 2008 who had travelled abroad and should have graduated by October 2015. One thousand, two hundred
and ninety-eight (1,298) of the two thousand, one hundred and eighteen (2118) total recipients met the qualifying criteria (RSSDA Annual Report, 2014). The difference in the numbers represents those students whose course durations were longer than the period under review (for example, medical students); those whose awards were tenable in Nigeria for various reasons; and those who were yet to travel at the date of this study.

5.4 Sample and Sampling Techniques

One of the basic aspects of any research task is getting practicable data from the overall population. Without this, a research is said to be superficial, biased and lacking in any real proof in the analysis of the study. It is for this reason that some process and procedure of sampling are usually carried out. One of the most common sampling methods is a process known as purposive sampling. A total population purposive sampling is simply the selection of all the elements in the study population. Unlike random selection, stratified technique and other forms of probability / likelihood sampling techniques, purposive sampling technique involves a varied cross-section of characteristics in the study population. The basic notion behind purposive sampling is to concentrate on people or elements or data points or variables with particular characteristics that will be able to assist with the generation of relevant information or data that could facilitate the achievement of the research objectives.

In the light of the above, the sampling technique employed in this study is total population purposive sampling technique. Total population purposive sampling is a non-probability sampling technique. It is adopted in this study because the total population purposive sampling involves all members within the population of interest and would allow deep insight into the phenomenon the study is interested in by considering the entire population. With such wide coverage of the population of interest, there is also a tendency to minimize risk of missing potential insights from members that are not included. In research,
when it is also not possible to make statistical generalizations about the sample being studied, the use of total population sampling does make it possible to make analytical generalizations about the population being studied (Nwankwo, 2011).

The sample size of this study would therefore be selected to represent all the elements in the study population. Thus, all the students who had been awarded overseas scholarships and had travelled abroad from inception in July 2008 and should have graduated by October 2015 represent the population and sample size for this study. The total population of this is one thousand, two hundred and ninety-eight awardees (1,298). This is why the technique adopted in the determination and selection of the sample size is known as total population purposive sampling technique, since the population of the study is the same as the sample size of the study. The choice of this sampling technique is informed by the fact that all the elements in the population were given equal opportunity to participate in the selection and all, as a matter of requirement, were selected.

5.5 Data Required and Validity of Sources

The data required in this study are secondary in nature. The secondary data are sourced from the database of the programme as collected, collated, verified and stored by the agency that administers the overseas scholarship programme on behalf of the Rivers State Government - Rivers State Sustainable Development Agency (RSSDA). The overseas scholarships awards are announced and published in the local media, submitted to the State government, read out at Town Hall meetings and the process and procedures along with the results are audited by professionally registered Chartered Accountants and published in widely circulated Annual Reports of the administration agency. The other major secondary data used were the indices of Immigrants Tolerance Level Indices (ITLI) published in the Social Progress Index (SPI, 2015) which are used as proxy for Immigration Policy of the
study Destination Country. The Human Development Indices (HDI) published by the United Nations (HDR, 2015) are used as proxy for Level of Development of study Destination Country (LDDC).

5.6 Analytical Procedure

This study also adopts both descriptive statistics and binary-outcome (probability) analytical techniques. Descriptive statistical technique would be used to describe the behaviour of the data set used in the study. This would be done with the use of simple percentage and frequency statistical tools. Whilst the binary-outcome probability technique would be used for the test of hypothesis by addressing the issues raised in the study. Like similar previous studies that relied on econometric modelling, the choice of appropriate estimation methodology has been developed for investigating the effect of explanatory variables on dichotomous dependent variables (Amemiya, 1981; Gujarati and Sangeetha, 2007; Pindyck and Rubinfeld, 1990; Aiyedum, 2007). The development of binary-outcome (probability) analytical techniques arises as an extension of linear regression models (LRM) in which the dependent variable is not continuous, rather categorical. They derive their names from behavioural responses of most surveys, which are usually dichotomous in nature. They assume that an individual is confronted with a choice between two alternatives and his choice is influenced by his characteristics (Aiyedum, 2007).

Aiyedum (2007) further postulated that binary-outcome models are important in analysing relationship involving a discrete dependent and independent variable. In such relationships, the probability of an event occurring is a function of a set of non-stochastic explanatory variables. Many types of binary outcome analytical techniques exist but this study adopts the linear probability model (LPM). The reasons for the choice of this analytical procedure are in Section 5.9 below. Specifically, the LPM technique is used to test the
various hypotheses. Within the analytical framework, Software Package for Social Sciences (SPSS) would be used to analyse the data using binary-outcome and probability logistic regression model with the objective of addressing the research questions and testing the postulated hypotheses. The reason for using SPSS is that it is amenable with the data generating process adopted in this study.

5.7 Model Specification

The linear probability model (LPM) approach is analytically based on earlier publications made by Fienberg, (1980); Erhabor, (1981); Aldrich and Nelson, (1984); Gujarati, (1995); and Alufohai and Erhabor, (2004). In time series models, the variables are either qualitative or mixed with quantitative, it simply entails that it cannot be easily applied to a real policy study that entails the use of quantitative data extracted from a source; hence suggesting quantitative regression method (QRM).

The simplest form of QRM is the binary outcome model where the responses are binary i.e. the regressand is a binary variable, which entails that it has two categories of responses or outcomes. However, when the regressand or dependent variable has more than two outcomes, the multiple response models (MRM) is used in that regards. This is however not the case in this study because the expected outcome of the probability in this study is binary in nature, i.e. either of two potential outcomes - likelihood is either return home or not return home. In the light of this, the study adopts the LPM model which is a form of binary outcome model that has the advantage of being able to analyse responses that are binary (two outcomes) in nature. This is the main reason for the adoption of the LPM approach.

Again, the probability (likelihood) outcome of the estimates lies between 0 and 1 as a result of the potency of conditional probability. This model is also adjudged suitable because the study has multiple prevalent binary-outcome variables. The essence of choosing this
method is because the decision of Rivers State Government to grant overseas scholarship award gives a binary variable \( y \), assuming the value of the decision is yes, i.e., suggestion that the student was awarded the scholarship would return home (RH), this takes the binary value of \( 0 \) while otherwise will take the form of \( \text{no} \) represented by the figure \( 1 \). Based on this, the value \( 0 \) would be for return home while \( 1 \) would be for not return home after their studies abroad. Theoretically, the multivariate LPM of the logistic regression model of aligning policy goals and outcomes in developing human capital using Rivers State Overseas Scholarship Programmes is expressed as:

\[
\text{Prob. (RH)}( \frac{P_i}{1-P_i} ) = b_0 + b_1GD + b_2AG + b_3SC + b_4SG + b_5IPDC + b_6LDDC + b_7LA + U \quad (5.1)
\]

Where:

- \( \text{Prob.} \) = probability (likelihood) of an event occurring.
- \( P_i \) = probability of returning home.
- \( 1-P_i \) = probability of not returning home.
- \( GD \) = Gender of awardees or students (male or female).
- \( AG \) = Age (Biological ages of the students or awardees – Younger or Older).
- \( SC \) = Selection Criteria (Merit or Protocol).
- \( SG \) = Successful Graduation or Not Successfully Graduated
- \( IPDC \) = Immigration Policy of Destination Country proxied by Country’s Immigrants Tolerance Level Index - ITLI.
- \( LDDC \) = Level of Development in Destination Country measured in terms of Human Development Index (HDI).
- \( LA \) = Level of award (PG or UG)
- \( U \) = Error or Stochastic Term (This captures other factors that could affect Returning Home or not but are not considered in the equations).
\( \frac{p_i}{1-p_i} = \text{odd ratio in favour of the likelihood of the students returning home after their study abroad (i.e. the ratio of the likelihood that a student would return home to the likelihood that a student would not return home after studying abroad).} \)

- \( b_0 = \text{intercept of the logistic regression model} \)
- \( b_1 - b_7 = \text{coefficients of the parameters to be estimated} \)
- \( \text{All other variables remain as earlier defined.} \)

### 5.8 Justification of the Analytical Procedure

Arising from the foregoing, the main concern of equation 4.1 is that the likelihood (p) that \( y \) takes on the value \(-0\)” (i.e. return home is yes) depending on the observed variables. That is: \( P = p(y = \frac{1}{x_i} - X_k) \) (5.2)

This suggests that the exogenous variables are assumed to account for the variations in \( P \), which is endogenous to the Ordinary Least Square (OLS) assumption in standard regression analysis.

From the above expression:

\[ P = \text{Linear Probability Model (LPM)} \]

\[ Y = \text{Dependent variables or LPM’s regressands (in this study, it is captured as Return Home (RH).)} \]

\[ \frac{1}{x_1} = \text{The probability of an independent variable predicting the dependent variable.} \]

\[ \frac{1}{x_1}, x_k = \text{The probability of an independent variable not predicting the dependent variable.} \]

The logistic model of the mathematical statement is therefore given as:

\[ P \left( y = \frac{1}{x} \right) = \frac{\exp(bX)}{1 + \exp(bX)} \] (5.3)
Where:

P, y, 1/x remain as earlier defined.

b is for parameter while x is for variables in the study

(Adapted from Aldrich and Nelson, 1984)

From the above equation, the relationship between dependent and independent variables is given by the unknown variables where RH is the dependent variable and the independent variables are GD, AG, SC, SG, IPDC, LDDC, and LA.

### 5.9 Apriori (Theoretical) Expectations

From the theoretical and conceptual standpoints, the influence of the independent variables on the dependent variable is expected to be in the following directions:

\[ \frac{dRH}{dGD} > 0; \frac{dRH}{dAG} > 0; \frac{dRH}{dSC} > 0; \frac{dRH}{dSG} > 0; \frac{dRH}{dIPDC} < 0; \frac{dRH}{dLDDC} < 0; \text{ and } \frac{dRH}{dLA} > 0. \]  \hspace{1cm} (5.4)

It is expected that the more liberal the immigration policy of a destination country and the more developed the study destination country, the lower the rate of return home and the less likelihood of return home by the students. This therefore suggests an inverse relationship between RH and IPDC (Immigration Policy of Destination Country proxied by Country’s Immigrants Tolerance Level Index) and (LDDC), the Level of Development of the study Destination Country measured in terms of Human Development Index (HDI).

On the other hand, gender (GD), age (AG), selection criteria (SC), successful graduation (SG) and level of award (LA) are expected, from the theoretical standpoint, to have positive influences on the likelihood of return home; hence suggesting a positive relationship between return home and gender, age, selection criteria, successful graduation and level of award of the scholarship awardees.
CHAPTER SIX
DATA ANALYSIS AND FINDINGS

This chapter presents the data analysis and findings of the study. The analysis is undertaken in three parts ending with a summary of the findings. Part one (6.1 – 6.4) deals with the characteristics of the study data population, the frequencies and rates of successful graduation (SG) as well as the frequencies and the rates of return home (RH) of the awardees on the scholarship programme. Using descriptive statistics of cumulative frequencies, graphs and percentages, part one also looks at the analysis and the factors accounting for the rates of successful graduations as well as the rates of return home.

Part two (6.5) looks at the justification for using the binary logistic regression model for this study. It looks at the validity, reliability and predictability of the model used for the regression analysis. In particular, it examines the correlation between the study variables, the predictive ability and the accuracy of the model used for the binary regression analysis. Part three (6.6) addresses the relationships between the variables as predictors that influence the return home of students from their study abroad; including the extent of their association using the binary logistic regression model. The findings of the hypotheses postulated in Chapter 4 and the factors accounting for return home are also reported in this section of the chapter.

This study used secondary data obtained from the database and other records kept by the scholarship administrators such as their published annual reports. Specifically, the main dataset came from the database of all the students that should have graduated and returned home from their study abroad between 2008 and 2015. The other information and data were obtained from information published by reputable and internationally recognised sources such as the United Nations. No primary data of perceptions or opinions from interviews or
surveys were obtained or used in this analysis. As such, the analysis is purely quantitative with the findings of the study addressing “what” happened and “how many” rather than “why” it happened. The discussion of findings in Chapter 7 addresses the possible explanations of any variances in expectations.

6.1 Characteristics of the Study Population

In order to ascertain the frequencies, cumulative frequencies and rates of successful graduation and return home, data was obtained from the scholarship database maintained by the Rivers State Sustainable Development Agency (RSSDA), being the government owned agency responsible for the administration of the scholarships. The data was filtered and sorted by award categories that fall into the study population as explained in Chapter 5. The findings of this data analysis are presented using simple descriptive statistics of proportions, percentages, cumulative frequencies and binary regression analysis.

Using the sorting and filtering techniques in Microsoft Excel, the study population was grouped into study destination countries, successfully graduated, not successfully graduated, returned home and not returned home. This was further filtered and sorted into the different categories of awards such as modes of selection criteria (merit and protocol), gender (male and female), age (younger or older), and level of award (undergraduate or postgraduate).

According to the RSSDA Annual Report (2014), there were 2,118 (two thousand, one hundred and eighteen) scholarships awarded between 2008 and 2015 under the Rivers State Overseas Scholarship Programme (RSOSP). Of these, 1,298 (one thousand, two hundred and ninety eight) awardees, representing 61% of the total scholarships awarded, had travelled out of Nigeria, undertaken their studies and ought to have graduated and returned home by 2015. This particular group therefore forms the population for this research. This is because it is the
only group that can be assessed for whether or not they have graduated and / or returned home in the period covered by this study.

Arising from the above, the analysis now looks at the characteristics of the study population which now form the variables for this study. These are:

1. Gender distribution (GD) - Male or Female
2. Age distribution (AG) - average age of population is 27 years (Younger ≤ 27yrs or Older > 27yrs)
3. Selection criteria for the award (SC) - Merit or Protocol
4. Level of the award (LA) - Undergraduate or Postgraduate
5. Study destination countries for the awardees.

6.1.1 Categories of the Study Population

Table 6.1: Summary of the categories of the Study Population Characteristics

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Total Awarded</th>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Level of award</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Male</td>
<td>Female</td>
<td>Young</td>
<td>Old</td>
</tr>
<tr>
<td></td>
<td>1298</td>
<td>903</td>
<td>395</td>
<td>805</td>
<td>493</td>
</tr>
<tr>
<td>Percentage</td>
<td>100%</td>
<td>70%</td>
<td>30%</td>
<td>62%</td>
<td>38%</td>
</tr>
</tbody>
</table>

≤ 27 years (Younger); > 27 years (Older); UG = Undergraduate Students; PG = Postgraduate Students

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.1 presents the summary of total scholarship awards by study population characteristics. The table shows that of the 1,298 qualifying awards, 903 (70%) of the total...
awardees were males. This was more than twice the number of female students at 395 (30%). The average age of the study population was 27 years. Nearly two-thirds (62% at 805) of the population were up to this age (Younger) while 38% (493) were over 27 years (Older). Regarding selection criteria, those awarded the scholarship under the merit criterion (aptitude tests and interviews) accounted for 932 (72%) which was over two and half times of those awarded under the protocol criterion at 366 (28%). On the basis of level of award, the vast majority of the scholarships were awarded to undergraduate students (1,046 at 81%). They outnumbered the postgraduate scholarship students by more than 4:1 (252 at 19%).

Additional information revealed that there were no set targets for any of the categories except for the selection criteria which aimed for 70% of merit students and 30% of protocol students annually. This target however did not start at the commencement of the scholarship programme but after about 2 years of implementation. The actual achievements of 72% merit and 28% protocol against the targets of 70% and 30% respectively were therefore reasonably close. Also, while the students were allowed to choose their courses of study from an approved list they did not have a choice of their study destination countries. They were allocated to study destination countries at the discretion of the allocating officers based on the availability of the approved courses in the study destination countries.

Graphically, figure 6.1 shows that there were 40% more male students than female students, 24% younger students than older students, 44% more merit students than protocol students and 62% more undergraduate students than postgraduate students. The population was therefore significantly tilted towards males, younger, merit and undergraduate students than females, older, protocol and postgraduate students.

Following the statistical description of the characteristics of the study population, the study now looks at the distribution of recipients to overseas study destination countries. This
is very important because the scholarship was tenable overseas and therefore its contribution to the home manpower pool depended on the return home of the successfully graduated students from their different overseas study destination countries. So the rates of return from each study destination country are important for this research.

6.1.2 Allocation of Awards by Countries

Table 6.2: Allocation of Awardees to Study Destination Countries

<table>
<thead>
<tr>
<th>S/ N</th>
<th>Country</th>
<th>Total Award</th>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Level of award</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Younger</td>
<td>Older</td>
</tr>
<tr>
<td>1.</td>
<td>Canada</td>
<td>311</td>
<td>224</td>
<td>87</td>
<td>28</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>303</td>
<td>97</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>India</td>
<td>182</td>
<td>150</td>
<td>82</td>
<td>32</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>182</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Ireland</td>
<td>14</td>
<td>7</td>
<td>50</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Singapore</td>
<td>124</td>
<td>73</td>
<td>59</td>
<td>51</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>124</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Switzerland</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Thailand</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>UK</td>
<td>654</td>
<td>442</td>
<td>68</td>
<td>212</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>645</td>
<td>97</td>
<td>6</td>
<td>63</td>
</tr>
<tr>
<td>8.</td>
<td>USA</td>
<td>11</td>
<td>6</td>
<td>55</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>81</td>
<td>73</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1298</td>
<td>903</td>
<td>70</td>
<td>395</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1046</td>
<td>81</td>
<td>252</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S/ N</th>
<th>Country</th>
<th>Total Award</th>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Level of award</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Canada</td>
<td>311</td>
<td>224</td>
<td>87</td>
<td>28</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>303</td>
<td>97</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>India</td>
<td>182</td>
<td>150</td>
<td>82</td>
<td>32</td>
<td>49</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>182</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
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<td>14</td>
<td>7</td>
<td>50</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>14</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Singapore</td>
<td>124</td>
<td>73</td>
<td>59</td>
<td>51</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>124</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Switzerland</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Thailand</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
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<td>-</td>
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<tr>
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<td>UK</td>
<td>654</td>
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</tr>
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<td>8.</td>
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<td>6</td>
<td>55</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>81</td>
<td>73</td>
<td>3</td>
</tr>
</tbody>
</table>

UG = Undergraduate; PG = Postgraduate; IPDC = Immigration Policy of Destination Country and LDDC = Level of Development of Destination Country.

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.2 presents the analysis of allocation of awardees to study destination countries. The data for each country was further distributed across gender (male and female) and their biological age (Younger and Older), selection criteria (merit and protocol), and award level (undergraduate and postgraduate).

Three hundred and eleven (311) students representing 24% of the total population were sent to Canada. Out of these, two hundred and twenty-four (224) awardees representing 72% were males while eighty-seven (87) representing 28% were females. Two hundred and fifty seven (257 at 83%) were younger while 54 (17%) were older students. On the basis of selection criteria, 237 (76%) students were selected on merit while 74 (24%) were protocol students (government concessions). At the level of award, 303 (97%) students were undergraduate students while 8 (3%) were post graduate students in Canada. Thus, overall there were 44% more males, 66% younger, 52% more merit and 94% more undergraduate students sent to Canada than females, older, protocol and postgraduate students respectively.
So the Canada profile was mostly male, mainly younger, merit and predominantly undergraduate students.

A total of 182 students were sent to India. They accounted for 14% of the total scholarships awarded. Out of this total, 150 (82%) were male students while 32 (18%) were female students. Forty nine (49) students representing 27% were younger, while 133 (73%) were older. On the basis of selection criteria, 124 (68%) were students awarded the scholarship on merit while 58 (32%) were selected through protocol. All the students sent to India were awarded the scholarship at the undergraduate level. There were therefore no postgraduate students in India. Overall, 64% more males, 46% older students, 36% more merit and all at undergraduate level were sent to India than females, younger, protocol and postgraduate students. So the India students were predominantly males, older, merit and all undergraduates.

Fourteen (14) students were sent to Ireland representing 1.1% of the total population. The males and females were equally represented at 7 (50%) each. Thirteen (13) students representing 93% were younger while only one student was over 27 years representing 7%. Twelve (12) students representing 86% were selected based on merit while two (2) representing 14% were selected based on the protocol selection criterion. All the students sent to Ireland were undergraduates (100%). Overall, the students sent to Ireland were equally distributed between males (50%) and females (50%), but the younger students were 86% more, merit had 72% more and undergraduate students were 100% more than the older, protocol and postgraduate students respectively. So the population distribution in Ireland was gender balanced but heavily skewed towards the younger, merit and undergraduate students.

In Singapore there were 124 students which represented 10% of the total awards. The distribution across gender, age, selection criteria and award level showed that 73 (59%)
students were males while 51 (41%) were females. On the basis of age 13 (10%) students were younger students while 111 (90%) were older. Seventy eight students representing 63% were selected on the basis of merit while 46 (37%) gained the scholarship on protocol basis. All the students were undergraduates representing 100% undergraduate awards. Thus there were more males by 22, older students by 98, more merit by 32 than females, younger students and protocol students. There was no postgraduate student sent to the country. So the profile of the Singapore bound students was male, older, merit and undergraduate.

In Switzerland Table 6.1 also presents a total award distribution that allocated only one student to the country representing an insignificant percentage of the study population. The student was female, older, protocol and postgraduate. This means that there was no male, younger, merit and undergraduate student sent to the country. Just like Switzerland. There was also only one student in Thailand who was male, older, protocol and postgraduate.

The United Kingdom (UK) had 654 students (about 50% of the study population). The majority of them (442 at 68%) were male students while 212 (32%) were female students. Four hundred and sixty-four (464) of the students were younger representing 71%, while 190 (29%) were older. On the basis of selection criteria, 475 (73%) were selected by merit while 179 (27%) were awarded the scholarship as protocol students. Four hundred and fifteen (415) or 63% were undergraduate students while 239 (37%) were postgraduate students. In fact, 239 at 95% of all the postgraduate students on the programme (257) studied in the UK. The UK had 230 more males, 274 younger students, 296 more merit and 176 more undergraduates than females, older, protocol and postgraduates respectively. The UK student profile was therefore predominantly male, younger, merit and undergraduate.

Eleven (11) students representing 0.85% of the total awards were sent to the USA. Out of this number, 6 (55%) were males and 5 (45%) were females; 9 (82%) were younger
while 2 (18%) were older; also 6 (55%) students were selected on the basis of merit while 5 (45%) were selected on the basis of protocol; and 8 (73% of 11) were undergraduates while 3 (27%) were postgraduates. The USA therefore had more males (6), younger (9), merit (6) and undergraduate (8) students than females (5), older (2), protocol (5) and postgraduate (2) students. The USA student population was therefore typically male, younger, merit and undergraduate.

In summary, the distribution showed that UK had the largest allocation of students at 654 (50% of the study population). This was followed by Canada with 311 (24%). India with 182 (14%) and Singapore with 124 (10%) made up the next significant study destination countries. Males had 903 (70%) of the total awards with females at 30% (395). At 442, the UK also had the highest number of males sent to any country - 68% of the 654 students were sent to the UK. However, as a proportion of the total male students sent to any country, India topped the list with 82% (150) of all the students sent to India (182). UK also had more females than any other country (212) but Ireland at 50% topped the list as a proportion of the total number of students sent to any one country. Ireland had equal representation of males and females at 7 (50%) each.

Information obtained from the programme administrators showed that age became a part of the selection criteria from 2011 (RSSDA Annual Report, 2011) with a maximum restriction of up to 21 years for undergraduates while postgraduates was restricted up to 35 years. These restrictions did not however apply strictly to protocol students some of whom exceeded these limits. All the postings to India and Singapore were done in 2008 and 2009 before the age restrictions came into effect. This perhaps explains why India and Singapore had very high number of older than younger students. About 73% (133 of the 182) sent to India were over the average age of 27 years while 90% (111 of 124) students sent to Singapore were over 27 years. Also, some countries such as Canada, UK, USA and Ireland placed age restrictions as
conditions for student entry visas. This may also partly explain why the percentage of the younger students sent to those countries were 83%, 71%, 82% and 93% respectively of their total student allocations. There were no postgraduate awards in India and Singapore.

There were two other specific study variables related to the characteristics of the study destination countries. These were the Immigration Policies of the study destination countries (IPDC) and the level of development of the study destination countries (LDDC). The IPDC was proxied by the Immigrants’ Tolerance Levels Index (ITLI) as published in the Social Progress Index (2015) while the LDDC was proxied by the Human Development Index (HDI) published annually by the United Nations Human Development Report (HDR, 2015).

The indices by study destination countries and their rankings are shown below.

Table 6.3: Proxy indices for Immigration Policy of the Destination Country and Level of Development of the Destination Country (IPDC and LDDC)

<table>
<thead>
<tr>
<th>Country</th>
<th>Awards</th>
<th>IPDC(TLI)</th>
<th>IPDC Ranking</th>
<th>LDDC(HDI)</th>
<th>HDI Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>311</td>
<td>87%</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>91%</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>India</td>
<td>182</td>
<td>34%</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>61%</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Ireland</td>
<td>14</td>
<td>86%</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>92%</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Singapore</td>
<td>124</td>
<td>61%</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>91%</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
<td>75%</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>93%</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>Thailand</td>
<td>1</td>
<td>36%</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>73%</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>UK</td>
<td>654</td>
<td>76%</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>91%</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>USA</td>
<td>11</td>
<td>81%</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>92%</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total</td>
<td>1,298</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ITLI from Social Progress Index, 2015 and HDI from HDR, 2015.
Table 6.3 and Figures 6.2 and 6.3 show that the five countries with the highest tolerance levels for immigrants were Canada 87%, Ireland 86%, USA 81%, UK 76% and Switzerland 75% and they had 991 (76%) of the total students population. Countries with the lowest tolerance levels for immigrants (India 34%, Singapore 36% and Thailand 61%) had only 307 (24%) students. The stricter immigration policy countries therefore had 52% less students than the liberal immigration policy destination countries of study.

In respect of level of development of study destination countries (LDDC), the top 6 developed countries were each rated at over 90% by the United Nations Human Development Index (Switzerland – 93%, USA – 92%, Ireland – 92%, Canada – 91%, Singapore – 91% and UK – 91%). Over 1,000 students studied in these countries (1,115 at 86%). India was rated at 61% and Thailand was rated at 73% and were classified as less developed and had only 183
(14%) students in total. So the developed economies had 72% more students than the developing countries.

Overall, in terms of study destination countries, the vast majority of students went to study in countries that were more tolerant of immigrants (76% at 991) and also countries with developed economies (86% at 1,115).

6.2 Successful Graduation

6.2.1 Summary of Successful Graduation (SG)

Table 6.4: Summary of Successful Graduation (SG)

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Total Awards SG</th>
<th>Gender (GD)</th>
<th>Age (AG)</th>
<th>Selection Criteria (SC)</th>
<th>Award level (LA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>≤ 27yrs</td>
<td>&gt; 27yrs</td>
<td>Merit</td>
</tr>
<tr>
<td>Frequency</td>
<td>1298</td>
<td>1152</td>
<td>795</td>
<td>357</td>
<td>681</td>
</tr>
<tr>
<td>Percentage</td>
<td>100%</td>
<td>89%</td>
<td>69%</td>
<td>31%</td>
<td>59%</td>
</tr>
<tr>
<td>Total Awards by categories</td>
<td>903</td>
<td>395</td>
<td>805</td>
<td>493</td>
<td>932</td>
</tr>
<tr>
<td>SG as a % award categories</td>
<td>88%</td>
<td>90%</td>
<td>85%</td>
<td>96%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: Author’s Computation from the Data Base of RSSDA, 2016

Table 6.4 summarizes the total scholarship awarded by rate of successful graduation (SG) with respect to gender (GD), age (AG), selection criteria (SC) and award level (LA). The table shows that the total number of students who had successfully graduated from the
overseas scholarship programme was 1,152 representing 89% of the total study population of 1,298. Of this number, 795 (69%) were male students while 357 (31%) were female students. Further, on the basis of age, 981 (59%) were younger while 471 (41%) were older. With respect to selection criteria 835 (72%) of students who successfully graduated were awarded scholarships based on merit while 317 (28%) were awarded based on protocol. On the basis of level of award, 916 students who successfully graduated were undergraduate students representing 80%; while 236 (20%) students were postgraduates.

With respect to total awards and percentage of successful graduation, the table also shows that 88% of all the total male students successfully graduated compared with 90% of all the females. So for their respective groups of students, females had a 2% higher rate of successful graduation than males. Younger students recorded 11% less successful graduation rate at 85% compared with 96% for the older students. On the basis of selection criteria, 90% of merit awardees successfully graduated outperforming their protocol counterparts by 3% at 87%. The table also shows that the undergraduate students recorded an 88% successful graduation rate which was 6% below the successful graduation rate of the postgraduates at 94%. Figure 6.4 shows that, in absolute numbers, more male, younger, merit and undergraduate students successfully graduated than female, older, protocol and postgraduate students. However, as a proportion of their respective groups, the female, merit, older and postgraduate students successfully graduated at a higher rate than their counterparts.

In summary, of the population of 1,298 that travelled abroad to study, 89% at 1,152 had successfully completed and graduated within the period covered by this study. The remaining 11% (146) had either failed out or were still in school repeating years or subjects in order to graduate. Thus the numbers and rate of successful graduation over a longer period of time may well be higher if the students still in school eventually rectify their deficits and graduate. Sixty nine per cent (69% or 795) of those who had successfully graduated were
males with females accounting for the remaining 31% at 357. Eighty eight per cent (88%) of the total males (795 of 903) successfully graduated while 357 of 395 female students also successful graduated at 2% higher than the males at 90%. The rate of older students successfully graduating at 96% was 11% higher than their younger counterpart at 85%. The rate of successful graduation of merit students was 90% which was 3% higher than the 87% rate for the protocol students. And at the level of award, 94% of all postgraduate students successfully graduated which was 20% of the total number of graduated students and 6% higher than the 88% rate for the undergraduates.

6.2.2 Not Successfully Graduated (NSG)

**Table 6.5: Summary of Not Successfully Graduated (NSG).**

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Total Awards</th>
<th>NSG</th>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Award level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Younger</td>
<td>Older</td>
</tr>
<tr>
<td>Frequency</td>
<td>1298</td>
<td>146</td>
<td>108</td>
<td>38</td>
<td>124</td>
<td>22</td>
</tr>
<tr>
<td>Percentage</td>
<td>100%</td>
<td>11%</td>
<td>74%</td>
<td>26%</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>Awards by categories</td>
<td>903</td>
<td>395</td>
<td>805</td>
<td>493</td>
<td>932</td>
<td>366</td>
</tr>
<tr>
<td>NSG as a % of award categories</td>
<td>12%</td>
<td>10%</td>
<td>15%</td>
<td>4%</td>
<td>10%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Source: Author’s Computation from the Data Base of RSSDA, 2016.

**Fig 6.5 Not successfully graduated by study population characteristics**

Source: Author’s Computation from the Data Base of RSSDA, 2016.
Table 6.5 shows the summary of the rates of those who had not successfully graduated (NSG) from the scholarship programme on the bases of gender, age, selection criteria and level of award. The table reveals that 146 (11%) of the 1,298 total awards had not successfully graduated within the timeframe of this study. One hundred and eight of them (108 at 74%) were males while 38 (26%) were female students; 124 (85%) were younger while 22 (15%) were older students; 97 (66%) were selected through merit while 49 (34%) were selected through protocol. On the basis of award level, 130 (89%) were undergraduates while 16 (11%) were postgraduate students.

The analysis by categories of awards shows that 12% (108 of 903) of all the male students had not successfully graduated compared with 10% (38 of 395) of the females. Younger students had 15% (124 of 805) of their number not successfully graduated while only 4% (22 of 493) of the older students had not successfully graduated. Merit selected students had 10% (97 of 932) of their population not successfully graduated whereas protocol students had 13% (49 of 366). And lastly, 12% (13 of 1046) of the undergraduate population were not successfully graduated compared with postgraduates at only 6% (16 of 252). This shows that the rate of not successful graduation as a percentage of their individual groups had 2% more males, 11% younger, 3% more protocol and 6% more undergraduates than female, older, merit and postgraduate students respectively.

Figure 6.5 shows the analysis of total scholarship awarded by the numbers of not successfully graduated. From the graph, it is shown that there were more male than female, younger than older, more merit than protocol and more undergraduate than postgraduate students who had not successfully graduated from the scholarship programme.
6.2.3 Successful Graduation by Study Destination Country

Table 6.6: Successful Graduation (SG) - By Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Awards</th>
<th>SG</th>
<th>SG %</th>
<th>Immigration Policy</th>
<th>Level of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>311</td>
<td>248</td>
<td>80%</td>
<td>87%</td>
<td>91%</td>
</tr>
<tr>
<td>India</td>
<td>182</td>
<td>181</td>
<td>99%</td>
<td>34%</td>
<td>61%</td>
</tr>
<tr>
<td>Ireland</td>
<td>14</td>
<td>12</td>
<td>86%</td>
<td>86%</td>
<td>82%</td>
</tr>
<tr>
<td>Singapore</td>
<td>124</td>
<td>121</td>
<td>98%</td>
<td>61%</td>
<td>91%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
<td>0</td>
<td>0%</td>
<td>75%</td>
<td>93%</td>
</tr>
<tr>
<td>Thailand</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>36%</td>
<td>73%</td>
</tr>
<tr>
<td>UK</td>
<td>654</td>
<td>585</td>
<td>89%</td>
<td>76%</td>
<td>91%</td>
</tr>
<tr>
<td>USA</td>
<td>11</td>
<td>4</td>
<td>36%</td>
<td>81%</td>
<td>92%</td>
</tr>
</tbody>
</table>

Total 1298 1152 89%

Source: Author’s Computation from the Data Base of RSSDA, 2016.

As shown in Table 6.6 above, all the study destination countries recorded successful graduations except the one student in Switzerland who was still in school and therefore not successfully graduated. Although Thailand recorded 100% rate of successful graduation, this was for only one student. In terms of the countries with substantial numbers of students, Table 6.6 shows the ranking by student numbers allocated to the different study destination countries as follows: (1) UK (654 at 50%); (2) Canada (311 at 24%); (3) India (182 at 14%); (4) Singapore (124 at 10%); (5) Ireland (14 at 1%); and (6) USA (11 at 0.85%). Their
respective successful graduation rates by country were UK (89%), Canada (80%), India (99%), Singapore (98%), Ireland (86%) and USA (36%). When ranked in descending order of successful graduation by country, this would be: (1) India (99%); (2) Singapore (98%); (3) UK (89%); (4) Ireland (86%); (5) Canada (80%); and (6) USA (36%). So, for example, UK ranked first in student numbers but third in rate of successful graduation; Canada ranked second in terms of numbers of students but fifth in rate of successful graduation; and USA ranked equal sixth in student numbers and in academic performance and so on.

In terms of tolerance for immigrant and thus immigration policy (IPDC), (1) Canada was the most immigrants' tolerant country with 87% index followed by (2) Ireland (86%), (3) USA (81%), (4) UK (76%), (5) Switzerland (75%), (6) Singapore (61%), (7) Thailand (36%). and (8) India (34%).

India had the lowest immigrants' tolerance policy index level at 34% but had the highest rate of successful graduation (99%) while Canada with the highest tolerance for immigrants' index (87%) had the fourth highest rate of successful graduation among the study destination countries. As with level of development of the study destination country, immigrants' tolerance level of the country also seemed to have a negative correlation with the rate of successful graduation in the country.

With regard to the level of development of the study destination countries (LDDC), the indices ranking was (1) Switzerland (93%), (2) USA (92%), (3) Canada, UK and Singapore (all at 91%), (6) Ireland (82%), (7) Thailand (73%), and (8) India (61%). This meant that India had the third largest student population (14%) and the highest rate of successful graduation (99%) but the lowest index of level of development at 61%. On the other hand, Switzerland with the highest development index at 93% was yet to graduate a student while USA with the second highest index of development (92%) had a 36% rate of successful
graduation – the lowest after Switzerland with 0%. There did not appear therefore to be a
direct correlation between the rates of successful graduation in a country with its level of
development. If anything, it appeared that the higher levels of development study destination
countries had lower rates of successful graduation and vice versa – an indirect correlation
relationship.

In summary, the overall successful graduation rate for the scholarship programme was 89%.
All the destination countries of study where students had successfully graduated met or
exceeded this level except Canada (80%), Ireland (86%), and USA (36%). All these three
countries were more immigrants’ tolerant and more developed than the others but recorded
the lowest rates of successful graduation compared to the other study destination countries.

Relating the success rates to the immigration policy analysis in section 6.1 above, the 5 more
immigrants’ tolerant countries of Canada, UK, USA, Ireland and Switzerland had 849
successful graduates from a combined students’ population of 991. This was an 86% rate of
successful graduation. The three stricter immigration policy countries of India, Singapore and
Thailand had 303 successful students from a combined students’ population of 307 meaning a
success rate of 97%. This would suggest therefore that the stricter immigration policies of
these 3 countries did not adversely affect their rates of successful graduation. Indeed, they
had 11% higher rate of successful graduation than the 5 more liberal immigration policy
study destination countries.

In respect of level of development, the 6 developed countries of Canada, UK, Singapore,
Switzerland, Ireland and USA had 970 successfully graduated students from a combined
students’ population of 1115. This represented a successful graduation rate of 87% while
India and Thailand with lower levels of development indices accounted for the remaining 182
successful graduates from a population of 183 representing a success rate of 99.5%.
Figure 6.6 illustrates graphically that in Canada, 80% (248) of total 311 awards of the students had successfully graduated, in India, 99.5% (181 of 182), in Ireland 86% (12 of 14), Singapore had 98% (121 of 124), Switzerland 0% (0 of 1), Thailand 100% (1 of 1), UK 89% (585 of 654) and USA had 36% (4 of 11). The graph reveals that Thailand had the highest rate of successful graduation (even though it was only 1 student at 100%), followed by India, Singapore, UK, Ireland, Canada, USA and Switzerland.

The summary of rates of successful graduation by study destination countries shows that the only student in Thailand successfully graduated (100%). However, Switzerland also had only one student but she had not successfully graduated (0%). Of all the other countries with substantial numbers of students, as a proportion of the total number of students that travelled to each country, India had the highest successful graduation rate at 99%. This was followed very closely by Singapore at 98%. Both countries were at the lower end of the tolerance levels for immigrants' measurement index. The countries at the higher echelons of both tolerance level for immigrants and level of development such as Canada, USA and Switzerland had lower successful graduation rates than India, Singapore and Thailand. Indeed, at 36%, USA had the lowest rate of successful graduation in the study population (excluding the one student yet to graduate in Switzerland – 100% not successfully graduated).

This would suggest that neither the less tolerant level for immigrants (34%) nor the relatively lower level of development (61% - a developing economy) in India adversely affected the studying environment for the students to significantly impede their successful graduation. Conversely, neither the relatively liberal immigrants' tolerance levels nor the relatively high levels of development (a developed economy) in the USA appeared to have impacted positively on the successful graduation rates of the students who travelled to study in the USA.
### 6.2.4 Successful Graduation by Country and Gender

**Table 6.7: Successful Graduation (SG) - By Country and Gender**

<table>
<thead>
<tr>
<th>Country</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Awards</td>
<td>SG.</td>
</tr>
<tr>
<td>Canada</td>
<td>224</td>
<td>175</td>
</tr>
<tr>
<td>India</td>
<td>150</td>
<td>149</td>
</tr>
<tr>
<td>Ireland</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Singapore</td>
<td>73</td>
<td>70</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thailand</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>UK</td>
<td>442</td>
<td>393</td>
</tr>
<tr>
<td>USA</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>903</strong></td>
<td><strong>795</strong></td>
</tr>
</tbody>
</table>

*Source: Author’s Computation from the Data Base of RSSDA, 2016.*
Table 6.7 presents the analysis of the rate of successful graduation by country and gender. In Canada, 78% (175) of the 224 male students successfully graduated. The corresponding rate for the female students was 84% (73) of the 87 females. In India, it was 99% (149) of 150 male students and 100% of the 32 female students. Indeed, this higher rate of success by female students over male students held across all countries where there were male and female students. In all cases therefore each country trend reflected the overall trend for gender successful graduation rates with the females having the edge with the margin as wide as 43% in the USA.

Figure 6.7 presents the above successful graduation data graphically.

### 6.2.5 Successful Graduation by Country and Age

<table>
<thead>
<tr>
<th>Country</th>
<th>Age Total Awards.</th>
<th>Younger SG.</th>
<th>%</th>
<th>Older Total Awards.</th>
<th>SG.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>257</td>
<td>204</td>
<td>79%</td>
<td>54</td>
<td>44</td>
<td>81%</td>
</tr>
<tr>
<td>India</td>
<td>49</td>
<td>49</td>
<td>100%</td>
<td>133</td>
<td>132</td>
<td>99%</td>
</tr>
<tr>
<td>Ireland</td>
<td>13</td>
<td>11</td>
<td>85%</td>
<td>1</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Singapore</td>
<td>13</td>
<td>12</td>
<td>92%</td>
<td>111</td>
<td>109</td>
<td>98%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Thailand</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>UK</td>
<td>464</td>
<td>402</td>
<td>87%</td>
<td>190</td>
<td>183</td>
<td>96%</td>
</tr>
<tr>
<td>USA</td>
<td>9</td>
<td>3</td>
<td>33%</td>
<td>2</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Total</td>
<td>805</td>
<td>681</td>
<td>85%</td>
<td>493</td>
<td>471</td>
<td>96%</td>
</tr>
</tbody>
</table>

≤ 27 years = younger students. > 27 years = older students. SG = Successful Graduation. NSG = Not Successful Graduation

Source: Author’s Computation from the Data Base of RSSDA, 2016.
Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.8 reports the rates of successful graduation by country and age. Two hundred and forty eight students (248 at 80%) had successfully graduated in Canada from its total student population of 311. Out of its 257 younger students, 204 (79%) had successfully graduated while 53 (21%) had not; 44 at 81% of its 54 older students had also successfully graduated while 10 had not. In all, the older students had a 2% more successful graduation rate than the younger students. This is in line with the overall trend in the larger study population.

In India, out of its 182 total awardees, 49 (27%) were younger while 133 (73%) were older students. All the 49 younger students recorded a 100% successful graduation. 132 of the 133 older students successfully graduated (99%). In all, the younger students had 1% more rate of successful graduation than the older students in India and not in line with the total study population trend.

Ireland had 14 students of which 13 were younger and 1 older student. Eleven (11) representing 85% of the 13 younger students had successfully graduated while 2 (15%) had
not successfully graduated. The only older student had also successfully graduated. In all, the younger students had 85% rate of successful graduation while older students had 15% higher at 100% albeit just for one student. Thus the younger students had less rate of successful graduation (85%) than the older students (100%) in Ireland and this was in line with the trend of the total population.

In Singapore there were 13 (10%) younger students and 111 (90%) were older students. 12 (92%) of the 13 younger students and 109 (98%) of the 111 older students had successfully graduated. In all, the older students successfully graduated by 6% more than the younger students. This was also in line with the general study population trend.

In Switzerland, there was only one student and she was older and was yet to graduate – so this was a 0% rate of successful graduation. In Thailand, there was also only one student and he was also older – so this was a 100% rate of successful graduation.

In UK, out of the 654 awards, 464 (71%) were younger while 190 (29%) were older students. Out of the 464 younger students 402 (87%) had successfully graduated while 62 (13%) had not successfully graduated; 7 (4%) of the older students had not successfully graduated while the vast majority of them (183 at 96%) had successfully graduated. In all, the UK older students had a 9% higher rate of successful graduation than the younger students.

In USA, out of the 11 total awards, 9 (82%) were younger students while 2 (18%) were older. Out of the 9 younger students, 3 (33%) had successfully graduated while 6 (67%) had not successfully graduated; 1(50%) of the 2 older students had also successfully graduated while the other was yet to graduate. In all, the younger students had 33% rate of successful graduation as against 50% successful graduation rate for the older students. This revealed that the younger students had 17% less rate of successful graduation than older students in USA.

Figure 6.8 graphically shows the successful graduation by country and age.
## 6.2.6 Successful Graduation by Country and Selection Criteria

### Table 6.9: Rates of Successful Graduation (SG) - By Country and Selection Criteria

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Awards</th>
<th>SG.</th>
<th>%</th>
<th>Total Awards</th>
<th>SG.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>237</td>
<td>192</td>
<td>81%</td>
<td>74</td>
<td>56</td>
<td>76%</td>
</tr>
<tr>
<td>India</td>
<td>124</td>
<td>123</td>
<td>99%</td>
<td>58</td>
<td>58</td>
<td>100%</td>
</tr>
<tr>
<td>Ireland</td>
<td>12</td>
<td>10</td>
<td>83%</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Singapore</td>
<td>78</td>
<td>76</td>
<td>97%</td>
<td>46</td>
<td>45</td>
<td>98%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Thailand</td>
<td>-</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>UK</td>
<td>475</td>
<td>433</td>
<td>91%</td>
<td>179</td>
<td>152</td>
<td>85%</td>
</tr>
<tr>
<td>USA</td>
<td>6</td>
<td>1</td>
<td>17%</td>
<td>5</td>
<td>3</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>932</strong></td>
<td><strong>835</strong></td>
<td><strong>90%</strong></td>
<td><strong>366</strong></td>
<td><strong>317</strong></td>
<td><strong>87%</strong></td>
</tr>
</tbody>
</table>

*Source: Author’s Computation from the Data Base of RSSDA, 2016.*

![Successful Graduation by Country and Selection Criteria](image)

*Fig 6.9: Analysis of Successful Graduation by Country and Selection Criteria*

Table 6.9 shows the rates of successful graduation of the scholarship programme by mode of selection of the awardees and their study destination countries. The UK hosted 475 merit students of which 433 at 91% had successfully graduated and 85% at 152 of the 179 protocol students. Canada had 237 merit students of which 192 at 81% had successfully graduated while 56 at 76% of the 74 protocol students had also successfully graduated. In India, 99% of the 124 merit students and 100% of the 58 protocol students also successfully graduated.
Ireland had a 100% record of its 2 protocol students successfully graduating compared with 83% (10) successful graduation of its 12 merit students. Singapore had 76 at 97% of 78 merit successful graduations compared with 45 at 98% of 46 protocol students while 1 at 17% of the 6 merit students in the USA successfully graduated against 3 at 60% of its 5 protocol students.

As a percentage of the total number of postings to any one country, Ireland had the highest merit students with 12 students at 86% of its allocation and USA had the highest protocol students at 45% (excluding the 100% protocol students in each of Switzerland and Thailand).

In every country where there were both merit and protocol students, the protocol students successfully graduated at a higher rate than the merit students except in Canada and UK where merit students rates were higher than protocol students. The combined successfully graduated students in UK and Canada alone (833) outnumbered the combined successfully graduated student populations in all the other study destination countries put together (319) by over 2.6 times. In fact, 625 (75%) of the 833 students who successfully graduated in both UK and Canada alone were merit students. Essentially therefore, 54% (625 of 1152) of all successfully graduated students were merit students in UK and Canada alone. This tilted the balance of the overall graduated population such that the merit successfully graduated students exceeded the protocol successfully graduated students by 3% at 90%

Figure 6.9 above shows graphically the numbers of the merit and protocols students by their study destination countries and the numbers from each route of selection that successfully graduated.
### 6.2.7 Successful Graduation by Country and Level of Award

Table 6.10: Rate of Successful Graduation - By Country and Level of Award (LA)

<table>
<thead>
<tr>
<th>Country</th>
<th>Undergraduate</th>
<th></th>
<th>Postgraduate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Awards</td>
<td>SG</td>
<td>%</td>
<td>Total Awards</td>
</tr>
<tr>
<td>Canada</td>
<td>303</td>
<td>240</td>
<td>79%</td>
<td>8</td>
</tr>
<tr>
<td>India</td>
<td>182</td>
<td>181</td>
<td>99%</td>
<td>0</td>
</tr>
<tr>
<td>Ireland</td>
<td>14</td>
<td>12</td>
<td>86%</td>
<td>0</td>
</tr>
<tr>
<td>Singapore</td>
<td>124</td>
<td>121</td>
<td>98%</td>
<td>0</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Thailand</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>UK</td>
<td>415</td>
<td>360</td>
<td>87%</td>
<td>239</td>
</tr>
<tr>
<td>USA</td>
<td>8</td>
<td>2</td>
<td>25%</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,046</strong></td>
<td><strong>916</strong></td>
<td><strong>88%</strong></td>
<td><strong>252</strong></td>
</tr>
</tbody>
</table>

*Source: Author’s Computation from the Data Base of RSSDA, 2016.*

Figure 6.10: Analysis of Successful Graduation by Country and Level of Award

*Source: Author’s Computation from the Data Base of RSSDA, 2016.*

Table 6.10 presents the analysis of the rate of successful graduation by country and level of award. Canada had 303 undergraduates and 8 postgraduates. Two hundred and forty 240 (79%) of the undergraduates successfully graduated compared with the successful graduation of all the 8 (100%) postgraduates.

In India, there were no postgraduate students and 99% at 181 of the 182 undergraduates successfully graduated. There were also no postgraduate students in Ireland where 12 (86%) of all the 14 undergraduate students successfully graduated. Singapore also did not have any postgraduate students.
and 121 (98%) of the 124 undergraduate students successfully graduated. Switzerland on the other hand had no undergraduates and only one postgraduate student who was yet to graduate – 0%. Thailand also had only a postgraduate student who had successfully graduated – 100%.

In UK there were 415 undergraduates and 239 postgraduates. The total of 585 successful graduations in the UK included 360 (87%) of the 415 undergraduates. The 239 postgraduates in the UK comprised 95% of the entire postgraduate population and 225 (94%) of them had successfully graduated. Thus, the postgraduate students had 7% higher successful graduation rate than the undergraduates in the UK. These success rates almost exactly mirrored the study population rates for UG and PG at 88% and 94% respectively.

The position in the USA was however very different. Only 2% (2) of its 8 undergraduate students had successfully graduated and also only 2 (67%) of its 3 postgraduate students had successfully graduated. The USA had the lowest graduation rate of all the destination countries of study except Switzerland at 0%.

Figure 6.10 is a graphical illustration of the numbers of undergraduate and postgraduate students that were awarded and successfully graduated by their study destination countries.

In summary, more postgraduates than undergraduates successfully graduated in every study destination country where they had both undergraduates and postgraduates. Overall, the postgraduate successful graduation rate at 94% edged their undergraduate counterparts by 6%.
6.3  Return Home from Study Abroad

Table 6.11: Summary of Return Home (RH)

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Total Awards</th>
<th>Total Return Home</th>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Award Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Younger</td>
<td>Older</td>
</tr>
<tr>
<td>Frequency</td>
<td>495</td>
<td>365</td>
<td>168</td>
<td>327</td>
<td>337</td>
<td>158</td>
</tr>
<tr>
<td>Percentage</td>
<td>% of RH</td>
<td>74%</td>
<td>26%</td>
<td>34%</td>
<td>66%</td>
<td>68%</td>
</tr>
<tr>
<td>% of total award</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Awards</td>
<td>1298</td>
<td>903</td>
<td>805</td>
<td>493</td>
<td>932</td>
<td>366</td>
</tr>
<tr>
<td>% of each category</td>
<td>40%</td>
<td>33%</td>
<td>21%</td>
<td>66%</td>
<td>36%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.11 presents the analysis of return home (RH) by the characteristics of the study population – gender, age, selection criteria and award level. A total of four hundred and ninety five (495) students had returned home by October 2015. This represented 38% of all the students that had travelled abroad to study between 2008 and 2015.

On the basis of gender, 365 (74%) male students and 130 (26%) female students had returned home. About 34% (168 of 495) were younger while the rest 327 (66%) were older. Also, 337 (68%) were selected for the scholarship award through merit while 158 (32%) of them were awarded the scholarship through protocol; and on the basis of level of award 372 (75%) of
them were undergraduates while 123 (25%) of the students who had returned home were postgraduate.

As a percentage of the awards in each of the categories, the table shows that 7% more of the male students (40%) had returned home than female students (33%); 45% more of the older students at 66% had returned home than the younger students (21%); 7% more of the protocol students (43%) than of the merit students (36%); and 13% more of the postgraduate students (49%) had returned home than undergraduate students (36%).

The numbers and rates of return home (RH) of all the students who travelled to study abroad on the scholarship programme are very important. However, for the purpose of this study, of far more relevance and greater importance are the students that had successfully graduated (SG) and returned home (RH) to contribute to the workforce of the sponsoring state in particular and of the home country in general. For this purpose therefore, the records show that the vast majority, (485 at 98% of the 495) who had returned home had successfully completed their studies and returned home (SGRH) while 10 (2%) of them had returned home prematurely without completing their studies for a variety of reasons such as ill-health and/or failure. This represented a significant rate of successful graduation and return home (SGRH) as a percentage of those who had returned home (RH) from study abroad on the Rivers State Overseas Scholarship Programmes - RSOSP.

Figure 6.11 shows that of the 495 students who had returned home across the characteristics of the study population, 365 (74%) were males while 130 (26%) where females, 168 (34%) were younger while 327 (66%) were older. On the basis of selection criteria, merit students were 337 (68%) while protocol students were 158 (32%) and undergraduate students were 372 (75%) while the postgraduates were 123 (25%). So in absolute numbers, there were more males, older, merit and undergraduate students that had returned home than females, younger,
protocol and postgraduate students. But as a proportion of the total awards for each category, at 40%, males were 7% higher than females, older were 45% higher than younger students, protocol were 7% higher than merit and postgraduates were 13% higher than undergraduates that had returned home. The subsequent analysis and reporting of the findings concentrates therefore on the successfully graduated students who returned home (SGRH) to contribute to the manpower pool.

6.4 Successful Graduation and Return Home – Contribution to Manpower Pool

Table 6.12: Successful Graduation and Return Home (SGRH) - Contribution to home Manpower Pool

<table>
<thead>
<tr>
<th>Total Successful Graduation (SG)</th>
<th>SG and RH (SGRH)</th>
<th>SG not RH (SGnRH)</th>
<th>Rate of Contribution to Manpower Pool (RCMP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq. %</td>
<td>Freq. %</td>
<td>Freq. %</td>
<td>SGRH</td>
</tr>
<tr>
<td>1152 100%</td>
<td>485 42%</td>
<td>667 58%</td>
<td>485 37%</td>
</tr>
</tbody>
</table>

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.12 presents the analysis of the rate of return home of the successfully graduated students (SGRH) thereby contributing to the state and country highly-skilled manpower base by the overseas scholarship programme. The table shows that 485 at 42% of all successfully graduated students (1,152) returned home (SGRH). This represented 37% of all the students who travelled abroad. Thus 667 at 58% of all the successfully graduated students (1152) and

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Figure 6.12. Analysis of Rate of Contribution to Manpower Pool
62% (803) of all the students that travelled (1,298) did not returned home from study abroad.

Figure 6.12 graphically illustrates these rates of return and not return home from the study abroad of the scholarship programme.

### 6.4.1 Successful Graduation and Return Home by Award Categories

Table 6.13: Successful Graduation and Return Home by Award Categories (SGRH)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Variable Categorical Units</th>
<th>SGRH Freq.</th>
<th>As % of Total SGRH</th>
<th>As % of SG of Category</th>
<th>As % of Category in Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>356</td>
<td>73%</td>
<td>795</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>129</td>
<td>27%</td>
<td>357</td>
<td>36%</td>
</tr>
<tr>
<td>Age</td>
<td>≤ 27yrs</td>
<td>162</td>
<td>33%</td>
<td>681</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>&gt; 27yrs</td>
<td>323</td>
<td>67%</td>
<td>471</td>
<td>69%</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Merit</td>
<td>330</td>
<td>68%</td>
<td>835</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Protocol</td>
<td>155</td>
<td>32%</td>
<td>317</td>
<td>49%</td>
</tr>
<tr>
<td>Level of award</td>
<td>UG</td>
<td>363</td>
<td>75%</td>
<td>916</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>PG</td>
<td>122</td>
<td>25%</td>
<td>236</td>
<td>52%</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>485</td>
<td>100%</td>
<td>1152</td>
<td>42%</td>
</tr>
</tbody>
</table>

Source: Author’s Computation from the Data Base of RSSDA, 2016.

Table 6.13 presents the analysis of the rate of successful graduation and return home (SGRH) from studying abroad based on the categories of the scholarship awards. On the basis of gender, out of the 485 students who had successfully graduated and returned home 356 (73%)...
were males while 129 (27%) were females. Only 356 (45%) of the 795 successfully graduated males students representing only 39% of the total males that travelled (903) returned home. The comparable figures for females were 129 (36%) from 357 students and only 33% of all the females that travelled (395) returned home. Male students therefore had a higher percentage of return home of successful graduates than female students.

On the basis of age, 162 (33%) of the 485 students who had successfully graduated and returned home were younger while 323 (67%) were older. As a percentage of their respective categories, only 24% of the younger students successfully graduated and returned home while 69% of the older students returned home. Thus the older students had 45% more percentage of successful graduates returning home than the younger students at 24%.

In respect of selection criteria, 330 (68%) merit students successfully graduated and returned home compared with 155 (32%) for their protocol counterparts. As a percentage of their individual categories however, merit students had 36% rate of successful graduation and return home of their numbers (835) while protocol students had 49% of theirs. This result means that 505 of 835 (60)% of all successfully graduated merit students failed to return home after their studies abroad compared with 162 of 317 (51%) for the protocol students. As such, the protocol students had more percentage of return home of their successful graduates than the merit students.

Three hundred and sixty three (363) undergraduate students successfully graduated and returned home. This was 75% of all successful graduates that had returned home (485) and formed 40% of all successfully graduated undergraduates (916). A very substantial number of undergraduates (553 at 60%) therefore successfully graduated but did not return home. At the postgraduate level, 122 (52%) successfully graduated and returned home leaving 114 (48%) of their total of 236 successfully graduated postgraduate students behind. Thus, the
successfully graduated postgraduate students had a higher percentage of return home than the successfully graduated undergraduate students.

In summary, as shown in Table 6.13, the male, older, protocol and postgraduate students had higher rates of successfully graduated and returned home students than their female, younger, merit and undergraduate counterparts.

### 6.4.2 Successful Graduation and Not Return Home by Award Categories

**Table 6.14: Successful Graduation but not Return Home (SGnRH)**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Categorical Units</th>
<th>SGnRH</th>
<th>As % of Total SGnRH</th>
<th>As % of SG of Category</th>
<th>As % of Category in Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>439</td>
<td>66%</td>
<td>795</td>
<td>903</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>228</td>
<td>34%</td>
<td>357</td>
<td>395</td>
</tr>
<tr>
<td>Age</td>
<td>Younger</td>
<td>519</td>
<td>78%</td>
<td>681</td>
<td>805</td>
</tr>
<tr>
<td></td>
<td>Older</td>
<td>148</td>
<td>22%</td>
<td>471</td>
<td>493</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Merit</td>
<td>505</td>
<td>76%</td>
<td>835</td>
<td>932</td>
</tr>
<tr>
<td></td>
<td>Protocol</td>
<td>162</td>
<td>24%</td>
<td>317</td>
<td>366</td>
</tr>
<tr>
<td>Level of award</td>
<td>UG</td>
<td>553</td>
<td>83%</td>
<td>916</td>
<td>1046</td>
</tr>
<tr>
<td></td>
<td>PG</td>
<td>114</td>
<td>17%</td>
<td>236</td>
<td>252</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>667</td>
<td>100%</td>
<td>1152</td>
<td>1298</td>
</tr>
</tbody>
</table>

**Source:** Author’s Computation from the Data Base of RSSDA, 2016.
Table 6.14 above summarises the successful graduated students who failed to return home after their studies abroad and thereby not contributing to the manpower base at home. Six hundred and sixty seven (667 at 58%) of all the successfully graduated students (1,152) did not return to their home country after their studies abroad. It further shows that 64% of all successful female students did not return home compared with 55% for males; 76% of all the younger graduates did not return compared with 31% of the older ones; 60% of all graduated merit students failed to return as against 51% protocol while 60% of all successfully graduated undergraduate students failed to return compared to 48% of all the successfully graduated postgraduates.

Overall, by their respective categories of awards, proportionately, 9% more females than males, 45% younger than older, 9% more merit than protocol and 12% more undergraduate than postgraduate students successfully graduated but did not return home from their studies abroad.

Figure 6.14 reveals that by gender, 55% of all successfully graduated males representing 49% of all of them that travelled abroad did not return home. The corresponding figures for females were 64% and 58% respectively. By age, 76% of all the successfully graduated younger students representing 64% of their population that travelled did not return home from study abroad. The comparable figures for the older students were 31% and 30% respectively. With regard to selection criteria, 60% of all successfully graduated merit students representing 54% of all of them that travelled remained behind after their study abroad. And for the protocol students, the figures were 51% and 44% respectively. At the level of awards, 60% of the successfully graduated undergraduates representing 53% of all undergraduates that travelled did not return home and the rates were 48% and 45% respectively for the postgraduates.
Overall, the rates of not return home from study abroad for females, younger, merit and undergraduates were higher than for their male, older, protocol and postgraduate counterparts.

### 6.4.3 Successful Graduation and Not successfully Graduated and Return Home by Country

**Table 6.15:** Successful Graduation/Return Home and Successfully Graduated but Not Return Home (SGRH and SGnRH) – By Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Total SG</th>
<th>SGRH</th>
<th>SGnRH</th>
<th>IPDC</th>
<th>LDDC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
<td>%</td>
</tr>
<tr>
<td>Canada</td>
<td>248</td>
<td>44</td>
<td>18%</td>
<td>204</td>
<td>82%</td>
</tr>
<tr>
<td>India</td>
<td>181</td>
<td>181</td>
<td>100%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Ireland</td>
<td>12</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>100%</td>
</tr>
<tr>
<td>Singapore</td>
<td>121</td>
<td>121</td>
<td>100%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>75%</td>
</tr>
<tr>
<td>Thailand</td>
<td>1</td>
<td>1</td>
<td>100%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>UK</td>
<td>585</td>
<td>137</td>
<td>23%</td>
<td>448</td>
<td>77%</td>
</tr>
<tr>
<td>USA</td>
<td>4</td>
<td>1</td>
<td>25%</td>
<td>3</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1152</strong></td>
<td><strong>485</strong></td>
<td><strong>42%</strong></td>
<td><strong>667</strong></td>
<td><strong>58%</strong></td>
</tr>
</tbody>
</table>

SGRH = Successful Graduation and Return Home; SGnRH = Successful Graduation and Not Return Home.

**Source:** Author’s Computation from the Data Base of RSSDA, 2016.

---

**Figure 6.15:** Analysis of Rate of Successful Grad / Return Home / Not return Home

**Source:** Author’s Computation from the Data Base of RSSDA, 2016.
Table 6.15 shows that all the students who successfully graduated in India, Singapore and Thailand returned home - a 100% rate of SGRH. USA came a distant 4th at 25% rate of return home of its successfully graduated students followed closely by UK at 23% and Canada at 18%. None (0%) of the 12 successfully graduated students in Ireland had returned home after completion of their studies.

This means that, at 100% retention, Ireland topped the list of study destination countries that retained the highly-skilled workforce trained on the Rivers State Overseas Scholarship Programme (RSOSP). The next highest retainers of these trained high skill workforce were (2nd) Canada at 82%, (3rd) UK at 77% and (4th) USA at 75% of all the successfully graduated students who studied in their respective countries. The table also shows that all the countries where the students had successfully graduated and returned home had much lower tolerance indices for immigrants – stricter immigration policies (India – 34%, Thailand – 36% and Singapore – 61%). All the countries where a significant proportion of the successfully graduated students did not return home (667 at 79% of 849) had much higher tolerance indices for immigrants – liberal immigration policies. This would suggest that those countries where the students stayed back at a higher rate were more welcoming and accommodating than the countries with stricter immigration policies. As such, the rates of successful graduation and return home were higher in the stricter immigration policy countries than in the liberal immigration policy study destination countries.

In respect of level of development of the study destination countries, as indicated in Table 6.15, all the three countries where all the successfully graduated students returned home had the lowest level of development indices of all the destination countries of study – India – 61%, Thailand – 73% and Singapore – 91%. Even at 91%, Canada and UK had the minimum indices of all the developed countries where most of the successfully graduated
students did not return home after their studies. This means that the rates of successful graduation and return home (SGRH) were higher in the developing than the developed countries. In other words, the developed economies of the study destination countries retained a higher proportion of the successfully graduated students.

Figure 6.15 shows graphically the rates of return home of the SGRH and SGrnRH students.

6.5 Binary Regression Analysis

6.5.1 Justification for using the Binary Logit Regression Model

This study used the binary logit regression model to estimate for the extent to which the independent variables accounted for the return home of the students from their study abroad. It was therefore important to consider the validity and predictive ability of the model used in the study. This was done using the Correlation Matrix, Hosmer and Lemeshow Test, Model Summary Table and the Classification Table as presented below. This was important as it determined the suitability and goodness of fit of the model and therefore established the level of confidence in using the model for the binary logit regression to analyse and interpret the data.

6.5.2 The Correlation Matrix Table

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant</th>
<th>GD</th>
<th>AG</th>
<th>SC</th>
<th>SG</th>
<th>IPDC</th>
<th>LDDC</th>
<th>LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.000</td>
<td>.028</td>
<td>.039</td>
<td>.001</td>
<td>.014</td>
<td>2.01</td>
<td>-.948</td>
<td>.027</td>
</tr>
<tr>
<td>GD</td>
<td>.028</td>
<td>1.000</td>
<td>.078</td>
<td>.019</td>
<td>.047</td>
<td>.132</td>
<td>-.084</td>
<td>.031</td>
</tr>
<tr>
<td>AG</td>
<td>.039</td>
<td>.078</td>
<td>1.000</td>
<td>-.029</td>
<td>.072</td>
<td>.318</td>
<td>-.154</td>
<td>.202</td>
</tr>
<tr>
<td>SC</td>
<td>.001</td>
<td>.019</td>
<td>-.029</td>
<td>1.000</td>
<td>-.062</td>
<td>.111</td>
<td>-.047</td>
<td>.188</td>
</tr>
<tr>
<td>SG</td>
<td>.014</td>
<td>.047</td>
<td>.072</td>
<td>-.062</td>
<td>1.000</td>
<td>.003</td>
<td>-.019</td>
<td>.028</td>
</tr>
<tr>
<td>IPDC</td>
<td>.201</td>
<td>.132</td>
<td>.318</td>
<td>.111</td>
<td>-.003</td>
<td>1.000</td>
<td>-.500</td>
<td>.244</td>
</tr>
<tr>
<td>LDDC</td>
<td>-.948</td>
<td>-.084</td>
<td>-.154</td>
<td>-.047</td>
<td>-.019</td>
<td>-.500</td>
<td>1.000</td>
<td>.089</td>
</tr>
<tr>
<td>LA</td>
<td>.027</td>
<td>-.031</td>
<td>-.202</td>
<td>-.188</td>
<td>.028</td>
<td>.244</td>
<td>.089</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: Extract from the SPSS Analytical Output, 2016. GD=Gender, AG=Age, SC=Selection Criteria, SG=Successful Graduation, IPDC=Immigration Policy, LDDC=level of development, LA=Level of Award
The correlation matrix was used to determine the nature of the relationships between the independent variables; testing for normality and multicollinearity association between the variables. This test was conducted to find out the extent of correlation between any two predictor (independent) variables. The nearer to a perfect 1 or 100% the correlation is between any two variables, the higher the likelihood of multicollinearity between them and also the higher the likelihood of abnormal distribution of the data resulting in a weak prediction model. Conversely, the weaker the correlation between the variables, (i.e. the further away from a perfect 1 or 100%), the better the goodness of fit of the model.

The result in Table 6.16 shows the correlation coefficient values between gender (GD) and age (AG) to be 0.078 (7.8%). This means that gender has 7.8% weak positive correlation with age of the students, indicating the absence of multicollinearity and the presence of normality in the combination of the two variables as independent variables in the model that predicts the likelihood of students to return home after their studies abroad.

Also the correlation coefficient of 0.019 (1.9%) between gender (GD) and selection criteria (SC) indicates that the variables are related in a weak positive linear sense to the value of 1.9%. This strongly suggests that the combination of gender and selection criteria as independent variables in the model would not result to multicollinearity and the data are normal.

The correlation coefficient value of 0.047 between gender (GD) and successful graduation (SG) indicates that the two variables are about 4.7% weakly related in a positive linear sense. Therefore, this shows that the combination of the two independent variables in the model would not give rise to multicollinearity and the data distribution is normal.

The correlation coefficient value of 0.132 between gender (GD) and immigration policy (IPDC) indicates that the two are about 13.2% weakly related in a positive linear sense. Also,
this would suggest that their combination as independent variables in the model would not result to the problem of multicollinearity and the data are normalised because the correlation coefficient is weak.

The linear association between gender (GD) and level of development of the destination country (LDDC) had a correlation coefficient of -0.084, indicating that the variables are about 8.4% weakly related in a negative sense. This suggests the absence of multicollinearity and presence of normal distribution of the dataset; hence the two variables can be combined as independent variables in the model. Further, the measure of linear association between gender (GD) and level of award (LA) reveals a correlation coefficient value of -0.031. Again, this means that the relationship between the two values is about 3.1% weakly related in a negative sense. Hence, suggesting the absence of multicollinearity and the case normality in the combination of the two independent variables in the model that predicts the likelihood of return home from overseas scholarship programme.

The measure of linear association between age (AG) and selection criteria (SC) has a correlation coefficient value of -0.029. This means that the two variables are about 2.9% weakly related in negative sense. Since the value is far below the negative perfect value of -1, there is no multicollinearity and a normal data distribution in the combination of the independent variables in the model that estimates the likelihood of return home.

The linear association between age (AG) and successful graduation (SG) had a correlation coefficient of 0.072, which indicates that the variables are about 7.2% weakly related in positive sense. This suggests that there is no multicollinearity and also a normal data distribution in the combination of the two independent variables. Furthermore, the linear association between age (AG) and immigration policy (IPDC) had a correlation coefficient of 0.318, indicating that the variables are about 31.8% weakly related in a positive sense. This
correlation coefficient result also confirms the normality in the distribution and absence of multicollinearity.

The correlation coefficient between age (AG) and level of development of the destination country (LDDC) is -0.154. This implies that the variables are about 15.4% weakly related in negative sense, and also suggests that the data are normally distributed as there is no problem of multicollinearity in the combination of the two variables in the model. The correlation coefficient value between age (AG) and level of award (LA) is -0.202. This implies that the variables are about 20.2% weakly related in negative sense, and also suggests that the distribution is normal and there is no problem of multicollinearity in the combination of the two variables in the model.

Selection criteria (SC) and successful graduation (SG) had a correlation coefficient value of -0.062, meaning that SC is about 6.2% negatively associated with SG. This value also reveals that the data are normally distributed and there is no problem of multicollinearity in the combination of SC and SG as independent variables in ascertaining the likelihood of student to return home from overseas scholarship programmes. Also selection criteria (SC) and immigration policy (IPDC) had a correlation coefficient value of 0.111, which means that they are about 11.1% positively associated. Given that the coefficient value is less than the perfect positive value of +1 (100%), then the data are normally distributed and suggests that there is no multicollinearity in the combination of SC and IPDC as independent variables in predicting the likelihood of students to return home from the overseas scholarship programme.

The table also shows the result of correlation between selection criteria (SC) and level of development of the destination country (LDDC) with a coefficient value of -0.047 indicating that the two independent variables are about 4.7% associated in a linear negative sense. This
would suggest that the data are normally distributed and there is also no multicollinearity in the combination of the two independent variables in the model. Again, the correlation coefficient value of the association between selection criteria (SC) and level of award (LA) is reported as -0.188. This means that the two variables are about 18.8% associated in linear negative sense. Hence suggesting that the data are normally distributed and there is no problem of multicollinearity in the combination of the two independent variables in the model.

Furthermore, SG and immigration policy (IPDC) have a correlation coefficient value of -0.003, which indicates that the two are about 0.3% negatively linearly associated implying that the data are normally distributed and there is the absence of multicollinearity in the combination of the two independent variables in the model that predicts the likelihood of students to return home. Also, SG and level of development of the destination country (LDDC) have a correlation coefficient value of -0.019, which indicates that the two are about 1.9% negatively linearly associated which implies that the data are normally distributed and there is the absence of multicollinearity in the combination of the two independent variables in the model that predicts the likelihood of students to return home.

Further, the table also shows that the correlation between SG and level of award (LA) has a coefficient value of 0.028, indicating that the two independent variables are about 2.8% associated in a linear positive sense. This means that the data are normally distributed and there is also no problem of multicollinearity associated in the combination of the two independent variables in the model.

The immigration policy (IPDC) and level of development of the destination country (LDDC) have a correlation coefficient value of -0.500, which indicates that IPDC is about 50% negatively associated with LDDC. This value also reveals that the data are normally
distributed and there is no problem of multicollinearity that could be detected in the combination of IPDC and LDDC as independent variables in ascertaining the likelihood of student to return home from overseas scholarship programmes. The relationship between tolerance for immigrants (IPDC) and level of award (LA) has a correlation coefficient value of -0.244, which indicates that IPDC is about 24.4% positively associated with LA. This value also reveals that the data are normally distributed and there is no problem of multicollinearity that could be detected in the combination of IPDC and LA as independent variables in ascertaining the likelihood of student to return home from overseas scholarship programmes.

The correlation coefficient value of 0.089 between the level of development of the destination country (LDDC) and level of award (LA) indicates that the two variables are about 8.9% weakly related in a positive linear sense. Therefore, this shows that the combination of the two independent variables in the model would not give rise to multicollinearity and the normality of the data distribution.

Also, gender (GD) is about 2.8% (0.028) positively related with the constant; age (AG) is about 3.9% (0.039) positively correlated with the constant; selection criteria (SC) is about 0.1% (0.001) positively correlated with the constant; successful graduation (SG) is about 1.4% (0.014) positively correlated with the constant; immigration policy (IPDC) is about 20% (0.201) positively correlated with the constant; level of development of the destination country (LDDC) is about -94.8% (-0.948) negatively correlated with the constant. Level of award (LA) is about -2.7% (-0.027) negatively correlated with the constant.

From the foregoing, the result of the correlation matrix reveals that there is no multicollinearity in the combination of the independent variables as precursors or predictors.
of return home of students. Also that there is normal distribution of the data. These results therefore add to the validity of the logistic regression model.

6.5.3 The Hosmer and Lemeshow Test

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>131.153</td>
<td>8</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Author’s Computation; an extract from the SPSS output, 2016.

The Hosmer and Lemeshow (H-L) test measures the goodness-of-fit of a model. This is similar to a Chi-square test. It indicates the extent to which the model provides better fit than a null model with no predictors, or, in a different interpretation, how well the model fits the data, as in log-linear modelling. If the Chi-square goodness-of-fit is not significant, then the model has adequate fit. By the same token, if the test is significant then the model does not adequately fit the data. If the H-L goodness-of-fit test statistic is greater than 0.05, it suggests a well-fitting model, then the null hypothesis is accepted that there is no difference between observed and model-predicting values. This implies that the model’s estimates fit the data at the acceptable level. However, if the H-L goodness-of-fit test statistic is less than 0.05 (alpha level), then we reject the null hypothesis that there is no difference between observed and model-predicting values.

From Table 6.17, the Hosmer and Lemeshow test of goodness fit shows that the Chi-square value is 131.153 with degree of freedom (df) of 8 and 0.000 statistical significance level ($P = 0.000$). From the result of the H - L, the model of the study is significant, because the $P$-value of 0.000 is less than the conventional level of significance of 0.05. This result suggests that the model does not fit the data. However, a possible explanation for this could be the sample size. However, as the study had a relatively large sample size of 1298, any small divergences of the model from the data would be flagged up and cause significance. Therefore, with the sample of this size, it is hard to find models that are parsimonious (i.e., the use of minimum
amount of independent variables to explain the dependent variables) and fit the data. Therefore, other goodness of fit indicators might be more appropriate. As the H-L test is only one measure of fitness, this study used observed and predicted classifications in order to overcome the short comings of Hosmer and Lemeshow test and also determine the level of goodness-of-fit of the model. This approach mitigates the drawbacks of H-L test.

6.5.4 The Model Summary Table

Table 6.18: The Model Summary Table of the Logistic Regression Model

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>926.055</td>
<td>460</td>
<td>625</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

*Source: Author’s Computation; an extract from the SPSS Output, 2016.*

The model summary table in Table 6.18 shows the likelihood of variation in the dependent variable of Return Home (RH) that can be explained by the interactions of the independent variables (being the factors expected to influence return home). The table contains the Cox and Snell “R Square” and Nagelkerke “R Square” values, which are both methods of calculating and explaining variation (like in linear regression analysis). In the table, the values of Cox and Snell R Square and Nagelkerke “R Square” are 0.460 and 0.625 respectively. They are both separate measures of accuracy of the model but in general the result can be interpreted as meaning that the likelihood of explaining variation in the dependent variable (RH) based on the model specification of the study ranges from 46% (0.46) to 63% (0.625). Both indicators suggest reasonably goodness of fit and good degree of accuracy between observed and predicted outcomes. It also explains that the confidence intervals are realistic to the accuracy of predictions of the variation in the dependent variable hence suggesting that the model’s assumptions are correct.
6.5.5 The Classification Table

Table 6.19: The Classification Table of the Logistic Regression Model

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RH</td>
<td>0</td>
</tr>
<tr>
<td>Step 1</td>
<td>RH</td>
<td>367</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>57</td>
</tr>
<tr>
<td>Overall</td>
<td>Percentage</td>
<td>85.7</td>
</tr>
</tbody>
</table>

a. The cut value is .500

Source: Author’s Computation; an extract from the SPSS output, 2016.

The Classification Table looks at the predictive ability of the model. Table 6.19 shows that the model accurately predicted 74% of the RH students (coded 0) and 93% of the students that did not return home (coded 1) from their studies abroad. Overall the model has a predictive accuracy of 86%. This is considered to be excellent.

In summary, taken together, the four measures of correlation matrix, H-L test, model summary table and the classification table used to examine the accuracy, validity and predictive ability of the model showed that the binary logistic model is accurate and can statistically estimate the likelihood outcome of return home from study abroad.

The results of the binary logistic regression analysis are now presented below. It is worth mentioning that the regression was undertaken using SPSS Version 23 on Windows 8.1 (64bit).

6.6 Results of Binary Logistic Regression Analysis

The analytical model was specified to align policy goals and outcomes in developing human capital using Rivers State Overseas Scholarship Programmes with postulation of seven (7) null hypotheses to ascertain the likelihood of gender (GD), age (AG), Selection Criterion (SC), Successful Graduation (SG), Immigration Policy of the study Destination Countries (IPDC), Level of Development of the study Destination Countries (LDDC), and Level of award (LA) as independent (predictor) variables to influence Return Home (RH) as a
dependent (outcome) variable. The overall theoretical framework that underlies the relationship is that the probability of students to return home has the likelihood of being influenced by these covariates or independent variables (GD, AG, SC, SG, IPDC, LDDC, and LA).

The conceptual framework is restated here for emphasis:

\[
\text{Return Home (RH)} = f(GD+AG+SC+SG+IPDC+LDDC+LA); \quad (6.1)
\]

the Model is:

\[
\text{Prob.}(RH)(\frac{p_i}{1-p_i}) = b_0+b_1GD+b_2AG+b_3SC+b_4SG+b_5IPDC+b_6LDDC+b_7LA + U \quad (6.2)
\]

Figure 6.16: Factors Influencing the Return Home from study abroad
Source: Researcher’s Conceptualization from the Related Literature Reviewed, 2016.
In order to empirically ascertain this, seven (7) null hypotheses were postulated accordingly to guide the achievement of the aim and specific objectives of the study. The results (outputs) of the binomial logistic regression are reported below:

**Table 6.20:** Test of Hypotheses - Variables in the Equation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Coeff-B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Df</th>
<th>Sig.</th>
<th>Odds Ratio</th>
<th>95% C.I for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 GD(Males)</td>
<td>.298</td>
<td>.181</td>
<td>2.704</td>
<td>1</td>
<td>.100</td>
<td>1.347</td>
<td>.945 - 1.920</td>
</tr>
<tr>
<td>AG(Younger)</td>
<td>-.766</td>
<td>.179</td>
<td>18.345</td>
<td>1</td>
<td>.000</td>
<td>.465</td>
<td>.327 - .660</td>
</tr>
<tr>
<td>SC(Merit)</td>
<td>.138</td>
<td>.187</td>
<td>.546</td>
<td>1</td>
<td>.460</td>
<td>1.148</td>
<td>.796 - 1.655</td>
</tr>
<tr>
<td>SG(SG)</td>
<td>1.292</td>
<td>.386</td>
<td>11.199</td>
<td>1</td>
<td>.001</td>
<td>3.639</td>
<td>1.708 - 7.754</td>
</tr>
<tr>
<td>IPDC</td>
<td>16.833</td>
<td>1.497</td>
<td>126.488</td>
<td>1</td>
<td>.000</td>
<td>20437469.423</td>
<td>1087523.295 - 384074675.257</td>
</tr>
<tr>
<td>LDDC</td>
<td>-2.791</td>
<td>3.904</td>
<td>.511</td>
<td>1</td>
<td>.475</td>
<td>.061</td>
<td>.000 - 129.295</td>
</tr>
<tr>
<td>LA(UG)</td>
<td>-1.225</td>
<td>.179</td>
<td>46.956</td>
<td>1</td>
<td>.000</td>
<td>.294</td>
<td>.207 - .417</td>
</tr>
<tr>
<td>Constant</td>
<td>-8.857</td>
<td>3.128</td>
<td>8.019</td>
<td>1</td>
<td>.005</td>
<td>.000</td>
<td>.000 - .000</td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: GD, AG, SC, SG, IPDC, LDDC, LA. Categories in brackets coded 1 and are the reference groups.

*Source: Author’s Computation; an extract from the SPSS output, 2016.*

**Table 6.21: Odd Ratios for Nominal Variables**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Selection Criteria</th>
<th>Student’s Status</th>
<th>Level of award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Younger</td>
<td>Older</td>
<td>Merit Protocol</td>
</tr>
<tr>
<td>Odd Values</td>
<td>7.106</td>
<td>3.846</td>
<td>2.942</td>
<td>1.592</td>
</tr>
</tbody>
</table>

*Source: Author’s Computation from the classification table of the regression model, 2016.*

Table 6.20 shows the outcome of the variables from the regression analysis. The Variables in the Equation table contains the information that describes the behaviour of the predictor variables in relation to each other and the outcome variable. This analysis will concentrate on the Coefficients of each variable (B), their significance (sig) and the *exponentiated* value of the Coefficients *Exp(B)* since they relate to the magnitude or rate of change (B) in the odds ratios, whether or not they are statistically important/significant (sig) and the extent of their influence on the outcome (*Exp(B)*) respectively. The analysis will also use the odds ratios of the variables in Table 6.21 above where appropriate.
The logistic coefficient (B) is associated with the intercept as it is included in the model. This table is similar to and contains analogous information as the coefficients table in a standard regression. The logistic coefficient for the constant is similar to the y-intercept term in standard regression. The farther away of a logistic coefficient from zero, the more influence it has in predicting the outcome of a logistic regression analysis, while the closer it is to zero, the less influence it has in predicting the outcome of a logistic analysis. The $\text{Exp}(B)$ refers to the change in odds ratio attributed to the variable. Also, Table 6.20 documents the contributions of each of the independent variables in the equation to the model and their respective statistical significance. In this study therefore, the contributions of the variables in the equation are presented based on the 7 null hypotheses postulated in Chapter 4.

6.7 Results of the Tests of Hypotheses.

There were seven (7) null hypotheses postulated for this study. The results of the test using a binomial logistic regression model are now reported below.

**Hypothesis One (H$_{01}$):** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with gender (GD – male or female) of the awardees.

Gender is a categorical or dichotomous variable and this hypothesis tests the likelihood of gender as an independent variable to influence return home of students from the overseas scholarship programme. The result of the test of this hypothesis shows that the statistical value of coefficient estimate (B) is 0.298 with a statistical significance (i.e. the sig column) level of 0.100 and an _exponentiated_ value of 1.347. The coefficient estimate (B) for gender has a positive value of 0.298 suggesting a positive relationship between gender and return home.
The statistical significance of the test is found in the “sig” column which contains the value of 0.100 ($P > 0.100$). This result shows that the likelihood of gender (GD) to predict or influence return home is not statistically significant because $P = 0.100$ (10%) and is higher than the conventional 0.05 (5%) confidence level. This leads to an acceptance of the null hypothesis meaning that the likelihood of students to return home (RH) from the scholarship programme is not statistically associated with the gender of the awardees (male and female). The table also shows an “exponentiated value ($Exp(B)$)” of 1.347 which is the odds ratio of return home. The male students were coded “1” and form the (reference) or base group with females coded as “0”. This implies therefore that male students are 1.347 times more likely to return home from their studies abroad than female students.

In order to identify the independent likelihood of each sub category of gender (male or female) to return home or not, Table 6.21 reveals that male students have the odd ratio of 7.106 while the female students have odd ratio of 3.846. This implies that a male student is 7.106 times likely to return home, whereas a female student is 3.846 times likely to return home. Therefore, the odds of the likelihood of gender to influence return home is more to the male students than the female students. This suggests that male students are more likely to return home than the female students even though gender is not statistically significant in this study.

**Hypothesis Two ($H_{02}$):** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with age (AG – Younger or Older) of the awardees.

Age is a categorical or dichotomous variable and this hypothesis tests the likelihood of age as an independent variable to influence return home of students from the overseas scholarship programme. The age variable is based on the average age of the students in the population.
(computed at 27 years). This average age is used to form the divide into younger students and older students. Younger students are those whose ages are up to 27 years while older students are those over 27 years. In the analysis, younger students are coded as \(-1\)” and form the base group for the category while the older students are coded \(-0\)”.

The results of the test of hypothesis as reported in Table 6.20 show that the younger students have a coefficient estimate (B) of -0.766 and a statistical significance (sig) of 0.000 and the _exponentiated’ value of 0.465. The statistical interpretation of this is that by a factor of -0.766, age has a negative influence on return home by the students from their studies abroad. Specifically, since the base group is the younger students, they have a negative influence on the overall return home from study abroad.

Further, the statistical significance of the test is found in the \(-\text{sig}’\) column which contains the value of 0.000 \((P = 0.000)\). This result implies that the likelihood of age (AG) to estimate the likelihood of return home is statistically significance because the \(P = 0.000\) which is less than the 0.05 (5%) level. This therefore suggests the rejection of the null hypothesis meaning that the likelihood of students to return home (RH) from the scholarship programme is associated with age of the awardees. The table reports the _exponentiate value Exp(B)’ of 0.465 which represents the odds of returning home. Since the younger students are the base group it therefore means that younger students are 0.465 times less likely to return home as opposed to older students.

Table 6.21 reveals that the odd ratios of younger and older students are 2.942 and 1.592 respectively. This means that a younger student \((\leq 27 \text{ years})\) with a negative coefficient is 2.942 times less likely to return home, whereas an older student \((> 27 \text{ years})\) is 1.592 times less likely to return home. This suggests that younger students are less likely to return home than the older students.
**Hypothesis Three (H₀₃):** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with selection criteria (SC-merit or protocol) of the awardees.

Selection criteria (SC) is a categorical or dichotomous variable and this hypothesis tests the likelihood of selection criteria as an independent variable to influence return home of students from the overseas scholarship programme. Table 6.20 reveals that selection criteria (SC) as an independent variable has positive coefficient estimate (B) of 0.138, a significance value of 0.460 and *exponentiated* value of the coefficient estimate of 1.148. The positive B coefficient suggests a positive relationship between selection criteria to returning home from their studies abroad by the base group (merit students).

However, the p=.460 statistical significance of the test implies that the likelihood of selection criteria (SC) to predict return home is not statistically significant as it is greater than the 0.05 (5%). This therefore suggests the acceptance of the null hypothesis, meaning that the likelihood of students to return home (RH) from the scholarship programme is not associated with selection criteria of awardees. The *exponentiate value Exp(B)* represents the odds of returning home and as such while selection criteria is not a significant variable, it shows nevertheless that merit selected students are 1.148 times more likely to return home than protocol selected students.

Table 6.21 presents the odd ratios of merit students and protocol students as 5.824 and 3.151 respectively. This shows that a merit student is 5.824 times likely to return home while a protocol student is 3.151 times likely to return home from the overseas scholarship programmes. This indicates that merit students are more likely to return home than the protocol students.
Hypothesis Four ($H_{04}$) The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with successful graduation (SG-graduated or not graduated) of the awardees.

Successful Graduation (SG) is a categorical or dichotomous variable and this hypothesis tests the likelihood of successful graduation as an independent variable to influence return home of students from the overseas scholarship programme. Table 6.20 shows that SG has a positive coefficient estimate (B) of 1.292, statistical significance $\text{sig}$ of 0.001 and the $\text{exponentiated value (Exp(B))}$ of 3.639. Thus, SG has a positive effect on the likelihood of returning home from study abroad by a rate of change factor of 1.292. Furthermore, its statistical significance value is 0.001 ($P = 0.001$). This means that the likelihood of successful graduation (SG) to predict return home is statistically significant because the $P = 0.001$ (0.1%) is less than the 0.05 (5%) confidence interval. This therefore suggests the rejection of the null hypothesis and acceptance of the alternative hypothesis, meaning that the likelihood of students to return home (RH) from the scholarship programme is associated with successful graduation (SG) of awardees.

Its $\text{Exponentiated value Exp(B)}$ is 3.639, the odds ratio between the successful graduated and the not successfully graduated students. Successful graduation (SG) is a categorical variable and is the base or reference group coded $1$ and non-successful graduation is coded $0$. Thus, the students who had successfully graduated are 3.639 times more likely to return home as opposed to students who have not successfully graduated.

Table 6.21 presents the odd ratios of successfully graduated students and not successfully graduated students as 70.316 and 38.054 respectively. This shows that a successfully graduated student is 70.316 times likely to return home, while the not successfully graduated student is 38.054 times likely to return home from the overseas scholarship programmes. This
shows that the likelihood of students' graduation status to influence return home is more to the successfully graduated students than the not successfully graduated students.

**Hypothesis Five (H\(_{05}\))** The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the immigration policy of the study destination country (IPDC-strict or liberal) The IPDC is proxied by immigrants' tolerance level index of the country - ITLI.

This is a continuous variable and this hypothesis aims to ascertain whether or not immigration policies of the study destination countries have the likelihood of influencing students returning home. The test result for immigration policies of the study destination countries as proxied by the tolerance level for immigrants index for each country shows a positive coefficient estimate (B) value of 16.833 with a level of significance value (Sig) of 0.000 and _exponentiated’ value of coefficient (Exp(B)) of 20,437,469.423.

A unit change in the immigration policy of the destination country of study (immigrants' tolerance level index) impacts the likelihood of a student returning home from study abroad by a rate of change factor of 16.833. At a level of significance of 0.000 (p<0.005), it is statistically significant as a factor influencing the likelihood of students returning home from study abroad. The indication is that increasing the IPDC level decreases the likelihood of return home from study abroad and as such the higher the IPDC level the lower the likelihood of return home from study abroad.

The null hypothesis of no association between them is rejected confirming a strong association between them. Therefore, the likelihood of students to return home (RH) from the scholarship programme is associated with immigration policy of study destination country (IPDC). The _exponentiated value Exp(B)’ of 20437469.42 reflects the very high likelihood of this outcome.
Hypothesis Six ($H_{06}$)  

The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of development of the study destination country (LDDC-developed or developing). The LDDC is proxied by Human Development Index of the country – HDI as published by the United Nations.

This is a continuous variable and this hypothesis aims to test whether or not the level of development of the study destination countries has the likelihood of influencing students returning home. The hypothesis is a measure of the likelihood of level of development in the study destination country (LDDC) to influence students’ return home from their studies abroad. This test result shows a negative coefficient estimate (B) for LDDC of –2.791. The statistical significance of the test is found in the ‗sig‘ column with the value of 0.475 (>5%) and the ‗exponentiated‘ value of 0.061, which was conducted at 95% confidence interval (C.I) for $\exp(B)$. The negative coefficient estimate (B) of – 2.791 would suggest that an increase in level of development of destination country will reduce the rate at which the students will return home by a factor rate of 2.791.

The statistical significance of the test is 0.475 ($P = 0.475$ which is greater than 0.005). This indicates that the likelihood of level of development in the destination country is not statistically significant in influencing or affecting students return home. Thus the null hypothesis is accepted indicating no statistical relationship between RH and LDDC. The ‗exponentiated value $\exp(B)$‘ is 0.061. Also, the result shows that a one unit increase in level of development in the destination country is likely to reduce the rate of return home by about 6.1%. Thus, the indication is that increasing the LDDC level decreases the likelihood of return home from study abroad and as such the higher the LDDC level the lower the likelihood of return home from study abroad.
Hypothesis Seven (H₀⁷): The likelihood of students to return home (RH) from the government-funded overseas scholarship programme is not associated with the level of the awards (LA-undergraduate or postgraduate) of the awardees.

The level of award is a categorical or dichotomous variable and this hypothesis tests the likelihood of successful graduation as an independent variable to influence return home of students from the overseas scholarship programme. The purpose of this test is to look at the influence of level of award on the likelihood of return home or not of the students on the scholarship programme. The result of the test of the hypothesis is also reported in Table 6.20. The Level of Award (LA) has a negative coefficient estimate (B) of -1.225. The statistical significance — sig” is 0.000 and the _exponentiated’ value (Exp(B)) is 0.294. This means that the level of award has a negative contribution to the outcome variable (return home) by a factor rate of 1.225.

With a test score of 0.000 (P = 0.000), this result means that the likelihood of level of award (LA) to estimate the likelihood of return home is statistically significant because the P = 0.000 (0.0%) is less than the 0.05 (5%) level of significance. This suggests the rejection of the null hypothesis and acceptance of the alternative hypothesis that the likelihood of students to return home (RH) from the scholarship programme is associated with Level of Award (LA). With an _exponentiated’ value Exp(B) of 0.294 in a categorical variable, the odds of returning home in relation to level of award suggest that undergraduate students (coded _1‘ and base group for comparison) are 0.294 times less likely to return home than postgraduate students (coded _0’).

Table 6.21 presents the odd ratios of undergraduate students and postgraduate students as 2.479 and 1.342 respectively. This suggests that an undergraduate student is 2.479 times less
likely to return home, while the postgraduate student is 1.342 times less likely to return home from the overseas scholarship programmes.

6.8 Summary of data analysis and findings

6.8.1 Characteristics of the study population

a) The distribution of the study population shows that there were more males (903 at 70%) than females (395 at 30%); younger (805 at 62%) than older (493 at 38%) students; more merit (932 at 72%) than protocol (366 at 28%); and more UG (1046 at 81%) than PG (252 at 19%).

b) Three of the eight study destination countries (India, Thailand, and Singapore) were ranked as having stricter immigration policies. These three countries hosted 24% (307) of the student population with the vast majority (991 at 76%) hosted by the five more liberal immigration policy countries.

c) Six of the eight study destination countries (UK, USA, Ireland, Switzerland, Canada and Singapore) in the population were ranked by the United Nations (HDR- HDI, 2015) as more developed than the other two countries of India and Thailand. The developed economies hosted the vast majority of the students (86% at 1,115 students) while the developing economies in the study population hosted only 14% at 183 students.

6.8.2 Successful Graduation of students (SG)

Using cumulative frequencies, percentages and proportions, the data analysis found that:

a) 1,152 (89%) of the total 1,298 awardees of the Rivers State Overseas Scholarship Programme sent abroad to study between 2008 and 2015 had successfully
graduated. This represents the total number of human capital developed by the scholarship programme from this number of beneficiaries during this period of study.

b) By categories of award, 90% (357 of 395) females and 88% (795 of 903) males had successfully graduated. The respective figures for the other categories (age, selection criteria, and level award) of the recipients of the scholarship awards were: 96% (471 of 493) older and 85% (681 of 805) younger students; 90% (835 of 932) merit and 87% (317 of 366) protocol; and 94% (236 of 252) PG and 88% (916 of 1046) UG.

c) Students that studied in the top 5 liberal immigration policy countries (UK, USA, Canada, Ireland, Switzerland) recorded 86% (849 of 991) successful graduation rate while others that studied in the 3 stricter immigrants policy countries (India, Thailand, Singapore) recorded 99% (303 of 307) successful graduation rate. Therefore more students successfully graduated in the stricter immigration policy countries than the liberal immigration policy countries.

d) The top 6 more developed destination countries of study (USA, UK, Canada, Ireland, Switzerland, Singapore) recorded 87% (970 of 1,115) successful graduation rate compared with 99% (182 of 183) successful graduation rate in the bottom 2 developing economies (India and Thailand). This means that, proportionately, the rate of successful graduation was higher in the developing than the developed economies.

6.8.3 Successful Graduation and Return Home (SGRH)

a) Four hundred and ninety five (495 at 38%) of the total study population returned home from abroad. Of these, 485 (98% of the total 495) had successfully graduated and returned home.
b) The 485 that successfully graduated and returned home represented 42% of all successfully graduated students (1,152) and 37% of the study population (1,298) that travelled abroad on the scholarship programme and were expected to have graduated and returned home between 2008 and 2015. Importantly, this figure of 485 is the contribution of this particular human capital development programme to the manpower pool at home. 58% (667 of 1,152) of the successfully graduated students did not return home after the completion of their studies on the scholarship programme representing a brain drain.

c) A breakdown by award categories of the SGRH (42% at 485 of 1,152) from the SG students showed males at 45% (356 of 795); females at 36% (129 of 357); younger at 24% (162 of 681); older at 69% (323 of 471); merit at 40% (330 of 835), protocol at 49% (155 of 317); UG at 40% (363 of 916); and PG at 52% (122 of 236). This means that, by proportion of categories of awards, males successfully graduated and returned home at a higher rate than females; older than younger; protocol than merit; and PG than UG.

d) All the 303 (100%) successfully graduated students that studied in the 3 stricter immigration policy destination countries (India, Singapore and Thailand) returned home after their studies whereas 79% (667) of all the 849 that successfully graduated from the liberal immigration policy countries did not return.

e) Also, the three developing countries of the study destination countries accounted for all their successfully graduated students returning home after their studies abroad whereas 79% (667 of 849) of all the successfully graduated students in the developed economies were retained in those destination countries of study. This is a deprivation of the home country of the human capital that they have developed
abroad during this period. This represents a brain drain from the developing to some of the developed countries in the world.

6.8.4 Factors determining the Success of the Overseas Scholarships

Because of their importance to the achievement of the policy goals; the purpose for which the scholarship programme was set up, the following results are considered as the factors determining the success or not of the programme:

a) Successful graduation – 89%; and
b) Return home – 37%.

These can be further broken down into:

i. Gender of the awardees (male or female)
ii. Age (younger or older)
iii. Selection Criteria (merit or protocol)
iv. Level of award (undergraduate or postgraduate)
v. Immigration policies of study destination countries (strict or liberal).
vi. Level of development of study destination countries (developed or developing)

6.8.5 Likelihood of Return Home from Study Abroad

The study used binary logistic regression to account for the factors associated with the likelihood of students returning home from their studies abroad. The correlation matrix table showed that the data was normal and no multicollinearity problem between the variables. The model summary table showed that the model explained 62.5% of the variations in the variables in the equation and the model classification table showed that the model could estimate the likelihood outcome to return home
85.7% of the time. These results were considered satisfactory for the reliability of the model.

Seven null hypotheses were postulated to test the association of the predictor variables of gender (GD), age (AG), selection criteria (SC), level of award (LA), immigration policies of destination countries of study (IPDC) and level of development of destination countries of study (LDDC) with the return home (RH) as the outcome variable. The regression analysis findings are summarised below:

a) The gender factor (GD) hypothesis was accepted as p=10% and as such it was not statistically significant and so gender was not associated with return home from study abroad. However, males were more likely to return home than females. This was also supported by the result of the frequency distribution.

b) The age factor (AG) hypothesis was rejected as p=0% and as such it was statistically significant and so age was associated with return home from study abroad. The older students were more likely to return home than the younger students. This was also supported by the result of the frequency distribution.

c) The selection criteria (SC) hypothesis was accepted as p=46% and as such it was not statistically significant and so selection criteria was not associated with return home from study abroad. However, protocol students were more likely to return home than merit students. This was also supported by the result of the frequency distribution.

d) The successful graduation factor (SG) hypothesis was rejected as p=1% and as such it was statistically significant and so successful graduation was associated with return home from study abroad. The successful graduates were more likely to return home than the non-graduated students. This was also supported by the result of the frequency distribution.
e) The immigration policies of the study destination countries (IPDC) factor hypothesis was rejected as $p = 0\%$ and as such it was statistically significant and so the immigration policy was associated with return home from study abroad. The students from stricter immigration policy destination countries were more likely to return home than from the liberal immigration policy countries. This was also supported by the result of the frequency distribution.

f) The level of development of study destination country factor (LDDC) hypothesis was accepted as $p=47.5\%$ and as such it was not statistically significant and so the level of development was not associated with return home from study abroad. However, the students from developing study destination countries were more likely to return home than from the developed study destination countries. This was also supported by the result of the frequency distribution.

g) The final test was of level of award of the scholarships factor (LA). This hypothesis was rejected as $p=0\%$ and as such it was statistically significant and so the level of award was associated with return home from study abroad. The postgraduate students were more likely to return home than the undergraduate students. This was also supported by the result of the frequency distribution.

Chapter 7 of this thesis now discusses the data analysis and findings.
CHAPTER SEVEN

DISCUSSION OF FINDINGS

This chapter discusses the study findings in relation to the research aim and objectives. With a research title of “Aligning Policy Goals and Outcomes in Developing Human Capital”, the research aim was to analyse and assess the relative success of the Rivers State Overseas Scholarship Programme (RSOSP) as a targeted education tool for developing human capital. The specific objectives of the research were to:

- **Obj. 1** review the extant literature on human capital development; particularly using overseas scholarships as a targeted education tool;

- **Obj. 2** analyse the rate of successful graduation of recipients of the scholarship;

- **Obj. 3** identify the factors that determine the success or not of the RSOSP overseas scholarship programme;

- **Obj. 4** ascertain the rate of return home of the recipients from study abroad; and

- **Obj. 5** account for the factors that influence the rate of return of beneficiaries to their home country.

In order to empirically achieve these objectives, the study used analytical methods of descriptive statistics of percentages, cumulative frequency and logistic binary-outcome regression techniques. The application of these techniques informed the empirical findings reported in Chapter 6.

The policy goal of the Rivers State Overseas Scholarship Programme (RSOSP) was stated in Chapter 3 as the “... development of highly-skilled manpower for the State by offering opportunities for higher education ....” (RSSDA Annual Report, 2012, p.13). The
intake (input target) of the programme was set at 300 overseas scholarship awards per annum. Thus the policy goal had a quantified input target of 300 awards but no quantified or measurable output/outcome target. This observation is consistent with the findings in the literature review in Chapter 2 where all the government-funded overseas scholarship programmes reviewed had input targets but no quantifiable or measurable expected outcome targets.

This RSOSP overseas scholarship programme achieved 89% (1152 of 1298) rate of successful graduation (SG) and 37% (485 of 1298) rate of return home (RH) of successfully graduated students (SGRH). This statistics also mean that 11% (146 of 1298) did not successfully graduate and 667 (58%) of all the successfully graduated students (1152) did not return home after their study and graduation abroad. Whether these outcomes were aligned with the policy goals or not and the factors that accounted for these achievements will now be discussed below under the headings of the research objectives listed above.

7.1 Objective 1 - Review of extant literature on human capital development and overseas scholarships

The theoretical framework underpinning this study is that human capital is important for both the individual and for nation states. According to the human capital theories, it is important at the individual level because its development enhances the individual’s earning capacity and potential and at the national level because it impacts positively on the economic growth and the development of a nation. Human capital can be developed through education and so individuals and nations invest in education to develop human capital and government-funded overseas scholarships are a form of targeted education support tool that governments use in developing human capital.
The literature reviewed in Chapter 2 found that the field of human capital development is relatively new having gained prominence in the 1950s and 1960s. Indeed, as one leading pioneer of the human capital theories, Schultz (1972, p.1), succinctly put it “human capital is a new research area in economics. It was the unexplained rise in the economic value of man that led to the concept of human capital”. Although it developed from the field of economics, it has since expanded into other areas such as education, sociology and human resources. According to Tan (2014, p.411), “human capital theory (HCT) is not a mere theory in economics. It is a comprehensive approach to analyse a wide spectrum of human affairs in light of a particular mind set and propose policies accordingly”. The importance of human capital is perhaps captured better in its various descriptions and definitions. Bontis (1996) described it as expenditure in education and training made by individuals and governments for pecuniary and non-pecuniary benefits while Becker (1993) simply referred to it as the economic value of education inferring that this applies to both the individual and the State. The main proposition of human capital theory as cited in Nafukho (2004, p.546) is that “…people are considered as a form of capital for development…” - Aliaga (2001); Becker (1993), Benhabib and Spiegel (1994); Engelbrecht (2003); Hendricks (2002).

Many scholars such as Eigbiremolen and Anaduka, (2014), Oluwatobi and Ogunrinola, (2011), Schultz, (1992) and Oluwatoyin, (2012) have researched the relationship between human capital development and economic growth but this is not the focus of this study. The interest of this study is the human capital link with education. Most scholars acknowledge the link between human capital and education (Adedeji and Campbell, 2013; Neamtu, 2012; Jones and Ramchand, 2013). Recently, Arne Duncan, the US Secretary of Education commented at a World Bank Network Forum (2011), that “Education today is inseparable from the development of human capital”. Researchers like Mincer (1974, 1975) reported human capital as being education and schooling that will prepare the workforce.
Such findings have confirmed education to be an important component in developing human capital.

With respect to government-funded overseas scholarships, the key studies have been by The British Council and DAAD (2014), Perna et al., (2014, 2015) on the Kazakhstan’s Bolashak overseas scholarships and the OECD and IBRD/World Bank (2010) who reported on the Becas Chile (BCP) overseas scholarships programme as a big and bold step to catalyse a significant leap forward for the quantity and quality of human capital in Chile through investment in technical, professional and graduate overseas education. All the studies in the literature reviewed showed that government-funded overseas scholarship is a tool for developing human capital. There were however some debates as to whether training students abroad was the best way to achieve this because many students did not return home from their study abroad and this becomes a drain of the country’s brain (Celik, 2009).

In relating the findings of this study with the above theoretical framework and the review of the extant literature, the data analysis in Chapter 6 showed that the RSOSP achieved an 89% rate of successful graduation of the students sent to study abroad. This represents the acquisition of highly-skilled manpower (human capital formation) since the graduates have now acquired education through the overseas scholarships programme over and above the skills that they possessed prior to their embarking on this scholarship programme. This achievement corroborates previous studies of the human capital theories and practice that a government-funded overseas scholarship programme (a targeted education tool) has developed the stock of human capital of a nation (British Council and DAAD, 2014).

In addition to the human capital theories, the literature review also identified some gaps in extant literature on the assessment of the relative success or not of government-
funded overseas scholarship programmes. These gaps identified and summarised in Chapter 2 included (i) an absence of quantifiable or measurable outcome data of success or not of overseas scholarship programmes; and (ii) no forecasting or predictive decision making tool for likelihood to return home from study abroad of overseas scholarship beneficiaries. These are now discussed in turn below.

7.1.1 Absence of outcome targets in overseas scholarship programmes

While overseas scholarships have a long tradition as targeted education tools for developing human capital, there is a dearth of publicly available information and data on their targets or achievements to measure or assess their success or otherwise in achieving their policy goals. This is largely due to the absence of pre-set quantifiable and measurable policy goals, outcomes or targets to be achieved in all the overseas scholarship programmes reviewed. Instead they often have a plethora of lofty ideals frequently claimed to be the benefits or gains of such overseas scholarships programmes. Some of these touted benefits include increased self-esteem and self-confidence exhibited by students who study abroad. Other gains that they announce are enriched lifestyle and exposures to other cultural factor, social network and socialization process; languages and better understanding of other peoples of the world (Levatino, 2015; Perna et al., 2014, 2015; OECD and IBRD/World Bank, 2010; Baruch et al., 2007).

In order to be measurable, such policy goals and objectives need to be S-M-A-R-T (Specific-Measurable-Achievable-Realistic-Time-bound). None of the reviewed studies of government-funded overseas scholarships had any published SMART policy goals. For example, in the case of the Rivers State overseas scholarship programme, the stated policy goal was “... development of highly-skilled manpower for the State by offering opportunities for higher education ...” (RSSDA Annual Report, 2012, p.13). So, while it had a quantified
input target of 300 scholarship awards per annum there was no such quantified and measurable output/outcome target. This finding confirms the observations from all the other reviewed government-funded overseas scholarship programmes (Becas Chile OECD and IBRD/World Bank, 2010; China – China Scholarship Council Annual Report, 2009; Kazakhstan’s Bolashak – Perna et al., 2015) of the absence of quantifiable and measurable outcome targets. The immediate implication of this is that it is difficult to compare the quantity of outputs against any measurable target and determine the overall success or not of the overseas scholarship programme in achieving its aims and objectives. Hence, the setting of SMART policy targets is suggested as a way forward in the study and implementation of overseas scholarships. This would improve and enrich the body of future literature and allow comparisons of policy goal alignment with the outcomes and achievements of these programmes.

7.1.2 Outcome Target Forecasting Tool

In addition to no outcome targets, none of the human capital theories had conceptualised or modelled any framework to assist with forecasting or predicting the outcome targets of government-funded overseas scholarship programmes. Furthermore, many of the empirical studies in the current literature (Altbach and Ma, 2011; Baruch et al. 2007; Perna et al., 2015; Cheung and Xu, 2015; Han et al., 2015) used perception variables of inclinations and intentions and qualitative data analysis obtained from interviews and surveys to assess the return home intentions of students studying abroad. In contrast, this study uses data of the actual observations of the RSOSP programme and proceeds to use the data in building a binary outcome predictive (forecasting) model of return home or not from study abroad. There is no record from all the literature reviewed that this has been done previously on any government-funded overseas scholarship programme and this is the first time this RSOSP overseas scholarship data has been used for this purpose.
In attempting to fill some of the identified gaps in the extant literature, this research conceptualised seven (7) factors in Chapter 4 that could influence the likelihood of return home of students from studying abroad. An analytical framework was developed which allowed for specification of a binary logistics regression model under the research methodology in Chapter 5. This binary outcome logistic model was used to regress the factors that could influence the likelihood of return home of students from the RSOSP. The regression accurately explained 62.5% of the variations in the likely outcomes and was 85.7% accurate in predicting the actual. So in terms of the model’s predictive ability, the seven (7) independent variables which were identified - gender (GD), age (AG), selection criteria (SC), successful graduation (SG), immigration policy of the study destination country (IPDC), level of development of the study destination country (LDDC) and level of award (LA) explained 62.5% of all the variations that are associated with return home of students from abroad scholarship and was 85.7% accurate in the classification of the regression model. This is considered to be a very good-fit of the model as only 37.5% were in the error term which captures other factors that could cause changes in the dependent variable (return home).

This binary logit modelling approach to predicting likely outcomes of an overseas scholarship programme is novel and a new approach and hence an addition to the current body of literature on assessing the alignment of policy goal and outcome in developing human capital where the rate or likelihood of returning home is the quantifiable desired outcome of the overseas scholarship programme.

**7.2 Objective 2 - Analyse the rate of successful graduation (SG) of the recipients**

This section discusses the overall rate of successful graduation from the overseas scholarships programme and further breaks it down by the factors comprising the overall rate.
Eighty nine per cent (89% at 1152) of all the students (1298) successfully graduated from the programme. By gender (GD) classification, Table 7.1 below shows that the female students outperformed their male counterparts by 2% at 90% to 88%. While this is not a wide margin, this finding is still consistent with the vast majority of previous studies which found that, in general, female students score higher than male students in academic endeavours (Lao, 1980; Fergusson and Harwood, 1997; Dayiolu and Turut-Azik, 2007; Conger and Long, 2010; Fortin et al., 2012; Voyer and Voyer, 2014; Stoet, 2015; and Ahmad, 2015). The reasons they found for this difference in academic performances vary from disruptive male classroom behaviours to family background to subjects and courses of study to entry qualifications. An OECD (2015) study was also consistent in its finding that younger men have lower skills and their academic achievements were poorer than younger women.

A handful of studies have however found that males perform better than females (Siematowe, 1996; European Commission Report, 2009; and Emaikwu, 2012. Even fewer studies have found that there is no difference in their academic performances (Apaak, 2015; Mlambo, 2011; Lawal and Adejuwon, 2014). However, in general, most studies have found that females perform better academically than their male counterparts.

The finding in this study supports the general expectation of better female academic performances as shown in previous studies. The implications would be to suggest that more overseas scholarships be awarded to female students as they are more likely to graduate at a higher rate than the male students. This approach would however be too simplistic as there are wider implications for society and for the gender balance of the workforce. An alternative approach could be to examine the reasons for the lagging behind of male students and try to address them in order to balance the workforce as much as possible.
With regard to the age factor (AG), the older students (over 27 years in this study) graduated at a higher rate (96%) than the younger students (85%). Previous studies have had mixed findings and conclusions on the performances of older and younger students. By definition, the age categorisation itself is an issue and some studies have classified young as up to 25 years and older as above 25 years (Kyoshaba, 2009). Some studies have found that the younger students perform better because they have less responsibilities and therefore more able to concentrate better (Ebenuwa-Okoh, 2010; Mlambo, 2011; and Zoega et al., 2012) and as such tend to be more focused on their academic pursuits than the older ones. Other studies have found differently that older students tend to be more matured and hence are more focused on their studies and therefore more likely to perform (successfully graduate) better (Crosta et al., 2006; and Kyoshaba, 2009). The jury would appear to still be out on this but in this study, the older students performed better overall and so support older students’ better academic performance theory.

In this regard it is noteworthy that by virtue of the age requirements, the postgraduate (PG) students were generally older than the undergraduate (UG) students in this study and as will be seen later, the PG students graduated at a higher rate too than the UG (mostly younger) students. While the implication of the evidence here would support more awards to the older students as a proportion of the total awards, there is a caveat in that older students are nearer pensionable age and therefore less working lives left in them than the younger generation who would work longer in the manpower pool – all else being equal e.g. health and mortality factors.

Under the selection criteria (SC), the students who were selected by merit graduated at 90% compared with protocol students at 87%. Both merit and protocol students had to possess a minimum academic qualification but, in addition, the merit students had to pass an aptitude test and interview. The protocol criterion was not therefore based on non-academic
considerations alone. Many studies have found that students who are further tested above the standard examination entries tend to perform better (Ali, 2008; Emaikwu, 2012; and Mercer et al., 2012). However, some other scholars such as Adenegan and Osho, (2012) disagreed and have found that prior qualifications with no additional tests have been sufficient to gain more superior academic performances. This later finding was supported further by Ojo (2005) as cited in Emaikwu (2012) who reported that direct entry students (protocol) were superior to their remedial and university matriculation examination students (merit) in academic achievement.

The findings in this study however agree with those who took additional tests (merit) after obtaining the minimum requirement. The implication for is that merit students performed better than protocol students and so more of them should be awarded the overseas scholarships as they are more likely to successfully graduate.

Another factor that was considered in respect of the rate of successful graduation was the destination country of study. This was further sub-categorised into their immigration policies (strict or liberal) and their levels of development (developed or developing). The students studied in eight (8) different study destination countries. The study destination countries all recorded very high rates of successful graduation (except Switzerland at 0% and USA at 36%) with the minimum rate at of 80%. On the basis of the immigration policy of each study destination country (IPDC), the findings showed that students who studied in the three stricter immigration policy countries (low tolerance indices for immigrants) of India, Thailand and Singapore achieved higher rates of successful graduation (an average of 97%) than those who studied in more liberal immigration policy countries (high tolerance indices for immigrants) at an average of 86%. Oddly, this would seem to suggest that the study (academic) environment was more conducive in the stricter immigration policy countries than in the more liberal immigration policy countries. There were no theoretical expectations
based on previous studies reviewed in the extant literature that associated academic performances with immigration policies. An association could however be made by reference to the Tolerance and Inclusion indices published by Social Progress Index Report (2015) which classified these three low tolerance for immigrants countries as also having very high discrimination and violence indices against foreigners and minorities. However, no literature articles were found on the influence of immigration policy on rates of successful graduation in those countries although the British and DAAD (2014) study pointed to poor education quality standards in India. It would be of interest therefore to see from future studies whether a trend develops along this line and the possible explanations of why students would graduate at a higher rate in stricter immigration policies countries with higher discrimination and violence tendencies than in more liberal immigration policy countries.

Nevertheless, the implication of the finding on immigration policy of study destination countries on rate of successful graduation in this study is that students graduated at a higher rate in stricter immigration policy countries than in the more liberal immigration policy countries and as such more students should be sent there to study if the policy goal is to increase the rate of successful graduation of overseas scholarship beneficiaries. Policy and decision makers should be aware however that race and discrimination issues could be a problem in stricter immigration policy countries as they are more likely to limit entry of foreigners into their countries and therefore limit their exposure and understanding of other cultures and people of the world.

In respect of level of development of the study destination countries (LDDC), again the findings showed that the students who studied in the developing countries of India and Thailand scored nearly 100% successful graduation rate than the more developed countries of USA, Canada, UK, Ireland, Singapore and Switzerland who averaged 87%. This is rather surprising and contrary to the expectation that more developed countries would provide more
conducive study environments and thus better successful graduation rates than the developing countries. According to the Human Development Index Report, by definition, the more developed economies have more infrastructure and facilities than the developing countries (HDR, 2015) to provide a more conducive study environment for achieving a higher rate of successful graduation. In fact, according to the BBC’s “Global 100 year gap in Education Standards” (BBC, 2015) report, “The developing world remains a long way behind in the levels of learning. When it comes to education the differences between the developed and developing worlds remain stark”. This position was reinforced by the British Council and DAAD (2014) in reporting that one of the study destination countries’ (India) tertiary education system was beset with enormous challenges such as quality deficit.

The theoretical expectation would therefore be that the rates of successful graduation should be higher in the developed than the developing study destination countries. There were no perception variables in this study to examine why this would be the case and it would be of interest to understand why the contradiction in achievements from theoretical expectations. The evidence here nevertheless points to a higher rate of successful graduation in developing than the developed study destination countries. The implication would therefore be to send more students to the developing countries than to the developed destination countries; if the target is to increase the rates of successful graduation. However, in view of the theoretical expectations of higher standards and quality of education in developed rather than developing countries this implication needs to be very critically evaluated before implementation.

Lastly, in respect of successful graduation and the level of award (LA), the findings in Chapter 6 showed that undergraduates (UG) had 1046 awards with the postgraduates (PG) over 4.15 times lower at 252. In terms of successful graduation, the PG’s successfully
graduated at a higher rate of 94% than the UG’s at 88%. This rate of successful graduation was discussed earlier in respect of the age factor (older students). As mentioned in Chapter 6, the maximum age was 35 years for the award of PG overseas scholarships and it was 21 years for UG. The findings had showed that older students (most of the PG’s fall in this category) successfully graduated at a higher rate (96%) than younger students (85%). However the number of PG’s at 252 was very small compared with UG’s at 1,046.

The implication of this finding would suggest that, as a proportion of the total awards, more awards should be at the postgraduate level than at the undergraduate level. This however would need careful consideration of the end use of the outcomes i.e. the use that the successfully graduated students will be put to. For example, the undergraduates are more likely to go into industry while the postgraduates are more likely to pursue careers in academics and research. A further implication therefore could be that more postgraduates from abroad would build more academic and research capacities to train undergraduates at home when they return home. This could potentially have substantial cost savings.

7.3 Objective 3 – Identify the factors that determine the success or not of the RSOSP Overseas Scholarships Programme

This section discusses the factors that were identified in this study as being responsible for the relative success or not of the Rivers State Overseas Scholarships Programme (RSOSP). The discussion will be from two perspectives which determine the success or not:

a) Successful Graduation - a broader perspective of overall success in terms of its (overseas scholarships programme) outcome/achievements in developing human capital in line with the human capital theories as reviewed in the literature; and

b) Return Home - a more confined perspective of success in terms of whether the outcomes met the set policy goals of the scholarship programme by comparing the
specific policy goal with the outcome and whether they were aligned.

Both perspectives are important because the study not only considers the achievement of the RSOSP but also how the achievements fit into the theories of human capital development in general. This aspect is founded in the literature reviews on the human capital theories as well as the practice and implementation of government-funded overseas scholarships programmes.

For the purposes of this discussion, outcome is defined simply as the consequence of an action. The action in this context is the award of the overseas scholarships to the recipients while the outcome is the human capital developed (successful graduation) as a consequence of the award of the overseas scholarships. Following on from this definition, outcome can therefore be an output rather than an end product such as the final impact of the outputs of a project or programme as it is often traditionally used in project evaluation studies.

A review of the literature on government-funded overseas scholarship programmes in Chapter 2 had shown that there is a dearth of information and data to measure or assess their success or otherwise in achieving their policy goals. This is largely due to the absence of pre-set quantifiable and measurable policy goals, outcomes or targets to be achieved in all the overseas scholarship programmes reviewed. Instead there are a plethora of lofty ideals often touted by their sponsors as the benefits of such overseas scholarship programmes. Some of these claims include increased self-esteem and self-confidence as a result of studying abroad, enriched lifestyle and exposures to other cultures, social support mechanism, languages and better understanding of other peoples of the world (Levatino, 2015; Perna et al., 2014 and 2015; OECD and IBRD/World Bank, 2010; Baruch et al., 2007).

These are qualitative benefits of the overseas scholarship programmes which are not quantified and as such they pose great challenges and difficulties in measuring their success or otherwise in their achievement. The findings of this study show that the RSOSP was
similar to other reviewed overseas scholarship programmes in that its policy goals were also not quantified. In order to partially mitigate this defect and assist with the task of assessing its relative success or not, some assumptions have been made and explained below (7.3.2) about the policy outcome expectations (goals) based on the input target of 300 awards per annum. Seven (7) factors have also been conceptualised as potential influences on the success or not of the programme. These factors and their rates of achievement of successful graduation and return home are tabulated in Table 7.1 below.

Table 7.1: Quantifiable Factors Accounting for Success or not of the RSOSP

<table>
<thead>
<tr>
<th>S/N</th>
<th>Factors (Variables)</th>
<th>Success Measurement Criteria</th>
<th>Success Measurement Criteria</th>
<th>Success Measurement Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SG Rate %</td>
<td>% of RH of SG</td>
<td>SGRH as % of study population</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(HC - of the State)</td>
<td>(HC - for the State)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Gender (GD)</td>
<td>Male</td>
<td>88%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>90%</td>
<td>36%</td>
</tr>
<tr>
<td>2</td>
<td>Age (AG)</td>
<td>Younger</td>
<td>85%</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Older</td>
<td>96%</td>
<td>69%</td>
</tr>
<tr>
<td>3</td>
<td>Selection Criteria (SC)</td>
<td>Merit</td>
<td>90%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protocol</td>
<td>87%</td>
<td>49%</td>
</tr>
<tr>
<td>4</td>
<td>Successful Graduation (SG)</td>
<td>SG</td>
<td>89%</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NSG</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>Immigration Policy (IPDC)</td>
<td>Liberal</td>
<td>87%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strict</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>Level of Development (LDDC)</td>
<td>Developed</td>
<td>87%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Developing</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 7.1 above shows that in terms of general analysis of human capital development, the overall successful graduation rate was 89% of all the qualifying awards – i.e. those that ought to have completed their studies and graduated during the period covered by this study (1,152 of 1,298 scholarships awarded from 2008 to 2015). The success rates of these findings are now interpreted and discussed below from two perspectives of global and local.

7.3.1 Success from the broader human capital theories (Global) perspective – Successful Graduation

This perspective looks at the relative success of the achievement of the programme from a more general and broader human capital theories angle of human capital development. As reviewed in Chapter 2 (literature review) and also shown in Chapter 3, the policy goal of the RSOSP did not include any quantifiable targets to be achieved for successful graduation. Eighty nine per cent (89% at 1152) of all the 1298 students sent abroad to study on the RSOSP overseas scholarship programme successfully graduated, implying that the programme successfully trained 1152 highly-skilled individual manpower of the State. The newly acquired skills were over and above the skill levels that they possessed before embarking on their studies abroad. Although there were no quantifiable outcome targets, by whatever yardstick of measurement, 89% achievement would seem a remarkable rate of achievement for a government-funded overseas scholarship programme. This targeted education tool has successfully developed capital in line with the human capita theories that posit that education leads to the development of skills and so develops the stock of human capital.
capital that increases the individual’s earning potential and develops the national economy (Perna et al., 2015; Neamtu, 2012; Adedeji and Campbell, 2013; Schultz, 1992; and Becker, 1962). This overseas scholarship programme has therefore been successful in developing human capital of the State.

Another measure of relative success would be to compare with similar government overseas scholarships programmes elsewhere. In the empirical literature that was reviewed in Chapter 2, only one scholarship programme had quantifiable outcome data with which to compare the findings here of successful graduation. This was the Pakistan government overseas scholarship programme where the British Council and DAAD (2014) found that 602 (97%) of 620 qualifying students successfully graduated from their study abroad. By comparison therefore, the RSOSP did not perform as well although the data from the Pakistani scholarship programme did not contain any information on the duration of the courses or the time frame covered in the study.

Table 7.1 shows that all the categories of the award achieved very high rates of successful graduation indicating that, statistically, these were the factors defining the success or not of the human capital development of this overseas scholarships programme. From a global outlook perspective therefore, an 89% rate of successful graduation achievement by the programme could be classified as relatively successful with a minimum of 85% successful graduation rate for each category of award.

7.3.2 Success from a more confined Return Home from study abroad perspective (Localised Outlook of Return Home)

This perspective looks at the relative success of the achievement of the programme strictly from the point of view of the stated policy goal of the programme. Four hundred and eighty five (485 at 42%) of the 1152 successfully trained human capital returned home from
their studies abroad to add to the existing manpower pool for the State at home. This represents 37% of all those (1298 – total awards) that were expected to have travelled, successfully graduated and returned home during the period covered by the study (2008 – 2015) from a stated input target of 300 awards per annum. The question this raises is whether this award of 300 scholarships per annum could be an implied outcome target (implicit in the policy goal) since no outcome target was given. Between 2008 and 2015, 1,298 scholarships had been awarded with the implied expectation that they would have all successfully graduated and returned home to add to the manpower pool for the State. This assumption is backed up by a specific clause in the award agreement which required each student to sign and undertaking to return home at the end of their studies abroad. One thousand one hundred and fifty-two (1152) of them successfully graduated (89%). Four hundred and ninety five (495) students returned home (38%) from their study abroad of which four hundred and eighty five (485 at 37%) had successfully graduated. But a further question now raised is whether an implied expectation of 100% outcome target (either of rate of successful graduation or rate of return home from abroad) for a government-funded large scale overseas scholarship programme is realistic and obtainable?

The difference between the 89% rate of successful graduation and the 37% rate of return home of the successfully graduated students is that the 89% represents human capital development of the individuals of the State whereas the 37% represents the actual human capital that was developed and was added to the manpower pool of the State. Therefore while successful graduation is a necessary condition precedent for the development of human capital in line with human capital theories, in order for it to be sufficient to meet the policy goal of the RSOSP, it had to be available (fulfilment of a sufficient condition) of the State as published in the RSSDA Annual Report (2012). In other words, in assessing the alignment of the policy goals with the outcomes of the programme, successful graduation (SG) would have
been converted into successful graduation and return home (SGRH) from the overseas scholarship programme as a measure of its success. But with no quantifiable or measurable outcome target for SGRH, 37% could mean anything ranging from unsuccessful to moderately successful to even very successful depending on what it is measured against. The review of extant literature did not prove helpful as there were no findings of “Pass” or “Fail” guidelines or standards for measurement of success in an overseas scholarship programme.

In respect of return home however, the studies found in the literature reviewed were mostly on inclinations and intentions of the students to return home rather than actual return homes from study abroad scholarships (Baruch et al., 2007; Perna et al., 2015; and Cheung and Xu, 2015). They were also studies in connection with brain drain and the related issues of overseas labour migration. They contained relevant perception variables and data on return home inclinations and intentions of the students interviewed or surveyed. Some specific examples of these brain drain studies included Finn (2010) who found that in 2002, 65% of those who received doctorates in the USA did not return to their home countries after 5 years (i.e. 35% returned home). The same study showed that 92% of Chinese and 81% of Indian doctoral graduates did not return home after 5 years (8% and 9% returned home respectively). Also, between 1978 and 2006, 70% of Chinese studying in USA did not return home – 30% returned home. Mishra (2013) reported that only 5% of Indians who earned a doctoral degree returned home. Furthermore, Altbach and Ma (2011, p.8) stated from the result of their findings that “in fact, the large majority of Chinese (and Indian) students who have gone abroad for study have not returned home over more than 20 years”. Moreover, recently the numbers have only improved modestly despite China's impressive economic and academic growth"
All the above studies showed that the track record of students returning home after graduating from abroad has not been good over the years. In fact, the average rate of Chinese students returning home between 1978 and 2007 was 26% despite the impressive economic growth boosts in GDP per capita and academic growth in China (Ali and Hsieh, 2009). Felbermayr and Reczkowski (2012) found that on average only 30% of foreign students return home.

By way of comparison with this study, the Pakistan Overseas scholarship Programme had 620 qualifying recipients and reported a successful graduation rate of 97% (602) and a return home rate of 95% at 590 (British Council and DAAD, 2014). However there were 1,541 awards and there was no stated timeframe covered by their study of the recipients. It may therefore not provide sufficient information from which to compare. It is however noteworthy that these exceptionally high successful graduation rates and return home rates recorded on the Pakistani programme were unusual from the experiences of other similar programmes.

In comparison therefore with the above rates of return for the different countries’ experiences, the 37% rate of return home of successfully graduated students of the RSOSP programme would therefore appear to be reasonably good. When compared however with an implied 100% return home expectation since no quantifiable outcome target was given, this would seem not to be very successful. But a 100% return home target for a government-funded overseas scholarship programme would however be unusual and not borne out by any previous practical experience in extant literature.

Many researchers have postulated various reasons for these very low rates of return home to home countries from studying abroad. In general, the factors have been categorised as “Push” and “Pull” factors. These factors primarily depict forces such as lower quality of life...
“pushing” students from their home countries (for example, poor quality of education standards, unemployment, etc) to “pulling” them to host countries (Baruch et al., 2007). However, as can be seen in Table 7.1 above, the non-behavioural factors accounting for the success or not of this particular overseas scholarship programme were:

a) Gender (GD) – Male or Female
b) Age (AG) – Younger or Older
c) Selection Criteria (SC) – Merit or Protocol
d) Successful Graduation (SG) – Graduated or Not Graduated
e) Destination Country of Study comprising - Immigration Policy (IPDC)
f) Destination Country of Study - Level of Development (LDDC)
g) Level of Award of the overseas scholarship (LA) – UG or PG

The extent to which these factors (independent variables) accounted for the overall success or not of this RSOSP overseas scholarship programme was determined by the level of their association with the outcome (return home) of the programme. This was ascertained using a binary logistic regression model and the results of the associations are discussed later under Objective 5 below.

7.4 Objective 4 – Ascertain the rate of return home from study abroad

The rate of return home from study abroad is a critical factor for the successful development of human capital for the home country. Any human capital that is developed but does not return home does not contribute to the pool of manpower resources available for deployment by the home country. The RSOSP recognised the significance of the return home from study abroad by inserting a condition in the Letter of Award of the scholarship requiring the students to sign an undertaking to return to Nigeria at the completion of their studies. The importance of returning home explains perhaps why the Kazakhstan Bolashak
overseas scholarships required collateral as a qualifying condition for the award of overseas scholarships (Perna et al., 2015).

The total number of students that returned home (RH) on the RSOSP from studying abroad was 495 (Chapter 6). This constituted 38% of all the students that travelled to study abroad (1298) and ought to have graduated and returned home in the period covered by this study (2008 – 2015). Ten (10) beneficiaries (0.7% of the study population or 2% of the total 495 students that returned home) did not successfully graduate but they also returned home. They do not represent developed human capital either of the State or for the State as they did not acquire the requisite skills to add to the State manpower pool. Due to their small, negligible and statistically insignificant numbers, they are not included in the discussions below for the purposes of those who studied abroad, successfully graduated and returned home to contribute to the trained and highly-skilled manpower pool available to the State. The emphasis of the discussion under Objective 4 here is therefore on successful graduation (SG) and return home (RH) i.e. SG + RH = SGRH. And as such, the total number of successfully graduated and returned home (SGRH) for this discussion analysis is 485 students and not the total of 495 who returned home.

The published policy goal of this overseas scholarship programme was the development of human capital “…for the State …” (RSSDA Annual Report, 2012, p.13). This is a very important clarification because the success or otherwise of any programme should be measured by what the policy makers intended it to achieve (the policy goal) and what it actually achieved. The successful graduation (SG) of the students is an important and necessary precondition because it develops the manpower of the State but in order for it to be sufficient, the successfully graduated students need to have returned home (SGRH) in order for them to be human capital that has been developed for the State. This SGRH group is the only trained highly-skilled manpower that can enhance the State’s workforce at home. The
rate of return home of the successfully graduated students is therefore a critical, if not the most important component of this research in measuring the relative success of the RSOSP.

The rate of return home of the successfully graduated students was 42% at 485 of all the 1152 that successfully graduated. This was 37% of all the 1298 students that travelled abroad to study and should have graduated and returned home by October 2015. In other words, 37% of all the qualifying students that travelled abroad successfully graduated and returned home (SGRH) to add to the manpower pool for the State which was the published policy goal.

RSOSP did not set a rate of return home target of its overseas scholarship programme. This would have formed the target (policy goal) against which to measure the 37% rate of return home achievement. The absence of a quantified policy goal target (which was in common with other reviewed overseas scholarship programmes) hindered a proper assessment of the success in aligning policy goal with its outcomes. The argument for an implied expectation of a 100% (see 7.3.2 above) of rate of return home (based on its 300 wards a year target) was not tenable as it was not realistic given the proven track record of very low and poor return home from other government-funded overseas scholarships (Baruch et al., 2007; Altbach and Ma, 2011; Mishra, 2013; and Perna et al., 2015, Paile and Fatoki, 2014).

The implication of this relatively low rate of return home of successfully graduated students is that the vast majority of students who travel to study abroad from mostly developing countries have shown no inclination or intention to return to their home countries after graduation. This means that scarce resources have been invested in these students who would not return home to contribute to the development of their home countries. The home countries have not therefore earned their returns on these investments in education abroad.
through overseas scholarships. Efforts should therefore be made to entice those who have successfully completed their studies abroad to return home. Examples of incentives that could be used can be found in the Chinese brain drain study where a Business Industrial Park was built for returning graduates from abroad as well as higher salaries than local staff to lure them from abroad (Altbach and Ma, 2011). In the case of the Kazakhstan government overseas scholarships, while not exactly an incentive, the requirement of collateral was made to be a condition for the award of the overseas scholarship (Perna et al., 2015). A more holistic approach would however be to grow and expand the home economy to create job opportunities. This approach would represent the home country’s “pull” factors rather than the “push” factors as posited by Baruch (2007).

Still in respect of rate of return home, Bijwaard and Wang, (2016, p.32) quoted an OECD finding that “Recent data suggest that only 15 to 30% of the foreign students actually decide to stay back in their host country”. The findings in this present research do not however support this assertion in the OECD Report (2013).

An analysis of the rate of return home on the basis of gender (GD) showed that the male students returned at a higher rate (39%) than females (33%). While this would speak in favour of more awards to the male rather than the female students because they returned at a higher rate, paradoxically males graduated at a lower rate (88%) than females (90%). The policy suggestion based on the rate of successful graduation would therefore be to award more scholarships to females because they graduated at a higher rate than males (90% versus 88% respectively) but a conflicting recommendation would be to award more to the males because they returned home at a higher rate and thereby contributing to the manpower pool at home than the females (39% against 33% respectively).
Policy makers need to review this critically as they should strike the right balance and mix between males and females in the workforce. There are also other considerations such as immigration policies of the study destination countries which may influence return home rates irrespective of the gender of the student. So an argument could be to award more female scholarships because they graduate at a higher rate but send them to stricter immigration policy countries because they will return home at a higher rate than more liberal immigration policy countries, if the policy target is the high return home of the recipients.

In looking at the age factor (AG), the older students returned home at a higher rate (66%) than the younger ones (20%). The older students also successfully graduated at a higher rate (96%) than the younger students (85%). This is consistent with the Bijwaard and Wang (2016) study which also found that older students (beyond 30 years) returned home at a higher rate than younger students. They attributed this to unemployment challenges at their age in the host country. This would imply a more favourable disposition for more overseas scholarship awards to the older students because not only do they graduate at a higher rate but also return home at a higher rate than younger students. But, as will be seen in latter discussions, this would have some effect regarding the contribution to the workforce since younger returnees should live longer than older returnees and so work longer.

In examining the rate of return home by the selection criteria (SC) of the programme, the successfully graduated protocol students returned home at a higher rate (42%) than their merit counterparts (39%). But in terms of successful graduation the merit students edged the protocol students at the rate of 90% to 87%. This is another paradox where those who returned home at a higher rate graduated at a lower rate than those whose rate of return home was lower.
On the evidence of the rate of return home based on the methods of selection of the students, then the protocol students should be granted more awards as they returned home at a higher rate. This suggestion should however be reviewed when considered in the context of other factors accounting for the overall rate of return home. This will be done when using the predictive model derived from the regression of all the factors together under research objective 5 below. For example, were any of these factors more statistically significant than the other and as such should be prioritised in the decision making process?

Successful graduation (SG) as a factor in return home from study abroad was more of a conundrum as it was double-edged. This was because it counted in favour as well as against successful graduated students returning home. On successful graduation, the student’s human capital was developed to the point where he or she had become valuable to both the host country of study and the home country. The findings in Chapter 6 showed that 1152 (at 89% of the study population) successfully graduated of which 58% at 667 (more than half) of all those who successfully graduated did not return to their home country. In the same vein, successfully graduated students made up 98% at 485 of all the 495 total students that returned home from the overseas scholarship programme. In other words, the majority of those who graduated did not return home and the vast majority of all those who returned home were successfully graduated students. Thus, their successful graduation had given them added value for employment or other opportunities in both the destination country of study and also in the home country. Those who successfully graduated abroad were likely to be absorbed in both host and home countries than those who did not graduate.

While there were no direct references to successfully graduated students, all the brain drain studies referring to percentages of return home or not from study abroad would invariably be those who had graduated. The implication would therefore be to encourage those who have successfully graduated to return home at the completion of their studies.
There was a return home clause in the letter of awards to the recipients of the RSOSP. In theory therefore, all the beneficiaries were required to return home at the end of their studies abroad. But this clause to return home did not seem to work effectively as 62% did not return. This ineffectiveness of the clause may be attributable to the absence of penalties for default. Some government-funded overseas scholarships that improved their return home rates used incentives such as higher salaries and the Industrial Business Park established in China for returnees (Altbach and Ma, 2011) and also enforceable collateral requirement in the Kazakhstan overseas scholarship scheme (Perna et al., 2015).

The rate of return home was also looked at from the angle of the immigration policies of the study destination countries (IPDC) using the 2014 Immigrants’ Tolerance Level Index (ITLI) from the Social Progress Index (2015) as a proxy. The five countries of Canada, Ireland, Switzerland, UK and USA had higher indices indicating more liberal and more tolerance for immigrants than India, Thailand and Singapore. All the 307 students in India, Thailand and Singapore were made to return home. All the 803 students (62% of the total study population of 1298) that did not return home studied in the more immigrant tolerant countries of Canada, Ireland, Switzerland, UK and USA. As a consequence, all the 667 at 58% of the successfully graduated students (1152) were retained in the more liberal immigration policy countries. In effect, 83% at 667 of 803 non-returned students had successfully graduated but were retained in these less strict immigration policy countries. While a causal effect could not be easily determined from the agency records and on the basis of insufficient information available in this dataset, it is more than a mere coincidence that all three hundred and seven (307) students in all the three (3) stricter immigration policy countries returned home while all 803 of non-returnees were in the (5) liberal immigration policy countries.
This position applied to all the categories of students irrespective of their gender, age, selection criteria, successful graduation and level of award. It would seem that the destination country of study was an overriding factor where return home was made compulsory at the completion of studies abroad as a result of immigration policies. This position is consistent with the findings by Rosenzweig, (2008); Droher and Poutvaara, (2011); Perna et al., (2015); and Levatino, (2015), that immigration policy is a very strong factor that determines the stay of a non-citizen (including foreign students) in a foreign hand.

The policy implication is that immigration is a very important factor for decision makers to consider in the allocation of students to study destination countries. The stricter the immigration policy of the study destination country the higher the rate of return home from their study abroad and as such more students should be sent to stricter immigration policies study destination countries. The reverse also holds therefore that the more liberal the immigration policies of the study destination country the lower the rate of return home from studying abroad. This decision should not however be taken in isolation as other factors such as quality of education and other socioeconomic packages in those countries should also be taken into account in the decision making process.

The rates of return home were also analysed by the level of development of the study destination countries (LDDC). The level of development of the study destination country was proxied by the 2014 Human Development Index (HDI) as published by the United Nations (HDR, 2015). Six (6) of the study destination countries (Canada, Ireland, Singapore, Switzerland, Ireland, UK and USA) were ranked higher as developed countries than India and Thailand. The theoretical expectation based on the findings in the study by Cheung and Xu (2015) would be that students studying in the developing countries are more likely to return to their home country compared to students studying in the developed economies. They posited that the economies of the developed study destination countries have better job
opportunities and prospects (pull factors) than the developing countries (push factors) (Baruch, 2005; Li and Bray, 2007; Lewin, in Baruch et al, 2007; and Dimmock and Leong, 2010).

The findings in Chapter 6 showed that 100% of all the 183 students that studied in the developing economies returned home (whether successfully graduated or not). All the 803 at 100% of the non-returnees were in the developed economies. Furthermore, all the 667 non-returned successful graduates (58% of all successfully graduated students) were retained by the developed economies. The retention of these graduated students (already developed human capital) has been called brain drain by many scholars because the trained personnel have been retained in the host country instead of returning home to develop their own home country (Baruch et al., 2007; Oosterbeek and Webbink, 2011; Soon, 2008; Docquier and Rapoport, 2012). In this case, it meant that the investment in education by the developing countries which should have given rise to human capital development in the developing country had unfortunately turned to be for the benefit of developed countries that were richer and better placed to train their own manpower.

There were some counter arguments that even though they stayed back, they still sent remittances home as well as other technical knowledge and transfer of some skills home (Lowell et al., 2004; Docquier and Rapoport, 2012; Bijwaard and Wang, 2016). These remittances were however very unlikely to compensate for the loss from the contribution of their trained skills in the development of their home countries if they had returned home. This brain drain phenomenon is acknowledged by this study but it is not the focus of this research. As such, the pros and cons of this argument will not be discussed further.

Since the rate of return home was higher in the developing study destination countries, the implication would be that more students should be sent to developing countries
as they return at a higher rate than from the more advanced economies. However, with reports that education standards are higher and better in developed than developing countries (HDR, 2015; BBC, 2015) this would seem to suggest settling for lower education standards and as such needs to be considered with care.

With regard to the rate of return home by level of award (LA), 48% of the postgraduates (PG) returned home compared with 35% of the undergraduates (UG). This trend was also reflected in their rates of successful graduation at 94% and 88% respectively. Ideally, therefore this would imply more PG than UG awards as a proportion of total awards as it ensures that the group that successfully graduates at a higher rate also return home at a higher rate. However regard should be given to the industry and employers’ needs in the home country. These needs would guide what level of award is most needed and inform the training and award of overseas scholarships. It is therefore suggested that, there needs to be a proper manpower needs gap analysis at home to determine what exactly is needed before making the awards to fill the gaps that were identified.

Another aspect of the rate of return home of PG’s and UG’s could be related to the duration of the awards. According to the administrators’ records, the UG awards were for a minimum of 3 – 4 years while the PG awards were usually for one year only. A review of visa conditions indicates that longer stays in a country brings higher entitlement and opportunity to apply to remain in a country. Thus, the longer a student stays in a study destination country the higher the chances of them obtaining a residency visa to remain. This means therefore that the UG had higher chances of obtaining residency status to remain in the host country than the PG students. This may partly explain why PG students returned at a higher rate.
A comparison with other studies showed that return home rate for PG students have tended to be low despite the case made above for shorter study durations and so likely to return home. The 48% return home rate of PG students in this study was higher than a study showing 35% rate of return intentions of doctoral students (Mishra, 2013; and Cheung and Xu, 2015). Also Baruch et al., (2007) found that only 40% of PG students intended to return home compared with the 48% actual return home rate in this study. The reasons given by these researchers for this seemingly low rate of return home of PG students were mostly economic pull factors, such as employment opportunities and better standards of living, in the host countries. A simplistic implication of this higher rate of return home by PG students would be to increase their numbers as a proportion of the awards compared with UG since they graduate as well as return home at a higher rate than UG students.

7.5 **Objective 5 – Accounting for the factors that influenced the rate of return home**

This research conceptualised seven (7) determinant (predictor) factors in Chapter 4 that could influence the rate of return home and postulated 7 null hypotheses accordingly that none of them were associated with the likelihood of students returning from their study abroad. A model was also developed to ascertain the tenability of these hypotheses by testing them using binary logistic regression. The findings were reported in Chapter 6 and are now discussed in detail here.

Two important points need to be clarified at this juncture between the discussions under Objective 4 and Objective 5 as both of the objectives relate to return home from study abroad. Firstly, the discussions in Objective 4 were to ascertain the rate of return home of mainly the successfully graduated students (SGRH of 485 students) using simple descriptive statistics of percentages, proportions and cumulative frequencies of the actual observations. This was sufficient for the purposes of ascertaining the rate of return home of successfully
graduated students who will add to the developed human capital stock available for the State manpower pool.

These discussions under Objective 5 however are about accounting for how these same factors influenced the rate of return home of all the 1,298 students who travelled abroad. Thus, the total return home (RH) numbers will now include the 10 students who did not graduate but nevertheless returned home making the population of return home of 495 and not just the successfully graduated and return home (SGRH) of 485 students alone. The model was conceptualised and designed to use the data from the total number of awardees (study population of 1298) to predict the likelihood of all the students returning home and not only the successfully graduated students. Hence all the students are now included and successful graduation (SG) is now made a determinant variable (another independent predictor variable) in the prediction model.

Secondly, by regressing the data under Objective 5 and not just the descriptive statistics under Objective 4, the findings now include not just the impact of each independent variable (factor) in the return home analysis but also how they relate and interact with themselves (correlation matrix) and furthermore how relevant, important and significant each one is in eliciting information on the likelihood of each student to return home. This is a more in-depth analysis of the factors (independent or predictor variables) and has greater implications for policy implications, decisions and recommendations for actions. The theoretical expectations of the rates of return of each of these factors based on findings of previous studies and literature review had been mostly discussed under Objective 4. The discussions under objective 5 will therefore not repeat these theoretical expectations from previous studies but concentrate on the findings of their importance and significance and level of contribution to the likelihood of return home or not unless it adds meaning in that
context. In doing this, it is worthwhile to recall in section 7.5.1 below the functional framework that informed the regression analysis.

7.5.1 The Binary Outcome Model Framework

The model equation was specified in Chapter 5 and the predictive binary outcome model was satisfactorily tested for goodness of fit and predictive ability in Chapter 6. The model is reproduced below for ease of reference for the discussions that follow.

\[
\text{Prob.}(\text{RH}) = \frac{P}{1-P} = b_0 + b_1 GD + b_2 AG + b_3 SC + b_4 SG + b_5 IPDC + b_6 LDDC + b_7 LA + U \quad (7.1)
\]

Where:

The Dependent Variable (Expected Outcome)

\( \text{RH} \) = Dichotomous Variable of Return Home or Not from study abroad

\( \text{Prob} \) = probability (likelihood) of an event occurring – returning home or not.

\( P_i \) = probability of returning home.

\( 1-P_i \) = probability of not returning home.

The Independent Variables (Input factors)

\( GD \) = Gender of the awardees (Dichotomous - Male or Female).

\( AG \) = Age (Dichotomous - Biological ages of the students – Younger or Older).

\( SC \) = Selection Criteria (Dichotomous - Merit or Protocol).

\( SG \) = Successful Graduation (Dichotomous – Successfully Graduated or Not).

\( IPDC \) = Immigration Policy of Study Destination Country proxied by Country’s Immigrants’ Tolerance Level Index (ITLI) - Continuous variable in %.
LDDC = Level of Development of Study Destination Country proxied by the UN’s Human Development Index (HDI) – Continuous variable in %.

LA = Level of award (Dichotomous – Postgraduate (PG) or Undergraduate (UG)).

U = Error or Stochastic Term (This captures other factors that could affect Returning Home or not but are not included in the equation).

\[
\frac{p_i}{1-p_i} = \text{odd ratio in favour of the likelihood of the students returning home from study abroad (i.e. the ratio of the likelihood that a student would return home to the likelihood that a student would not return home from studying abroad).}
\]

\[b_0 = \text{intercept of the binary logistic regression model}\]

\[b_1 - b_7 = \text{coefficients of the parameters to be estimated}\]

The findings of the binary logistic regression analysis are now discussed using the results of the test of the seven null hypotheses of the level of associations of the factors on the likelihood of return home or not from abroad.

7.5.1.1 The Gender (GD) Factor

The regression analysis showed that gender was not statistically significant in estimating the likelihood to return home from study abroad. This means that the likelihood to return home or not from studies abroad is not associated with the male or female status of the awardee. Thus, it is suggested that the decision to award or not to award scholarship should not be based on the gender of the student with respect to whether or not they will return home from their studies abroad. This finding is consistent with the study by Bijwaard (2010, p.48) who stated that “gender hardly influences the departure of foreign students”. However, to the extent that gender is considered, this study found that male students were 1.347 times more
likely to return home than female students. The implication of this finding is that by increasing the proportion of male students to female students in the population, the likelihood of overall return home will also increase. The converse will also hold true that by increasing the proportion of female students relative to the male students in the study population, the likelihood of return home of the students on the overseas scholarships programme would decrease. This expected likelihood of rate of return home is supported by the actual findings of the rate of return home of 39% males to 33% females (Table 7.1).

The policy decision implication of this is that, depending on whether the objective is to marginally increase or decrease the likelihood of return home, the male and female proportions of the population can be adjusted accordingly. The emphasis is on marginal increase or decreases in the likelihood of return home because gender is not statistically significant in the likelihood of return home and should not form the focus of the decision making. Paradoxically however, the female students graduated at a higher rate than the male students but they are less likely to return home. So it raises the question of striking a balance so that those who graduate at a higher rate can also return home at a higher rate or incentivising those who return at a higher rate to also graduate at a higher rate.

7.5.1.2 The Age (AG) Factor

Age was found to be a statistically significant factor in influencing the likelihood to return home or not from abroad. The findings showed that the younger students were .0465 times less likely to return home than the older students. Younger and Older were categorised as up to 27 years (average age of the study population) and over respectively. This finding supports Bijwaard and Wang (2016) who found that older students (over 30 years) were more likely to return home than younger students. The descriptive statistics showed that 66% of older students returned home compared with 20% of the younger students (Table 7.1). Thus
there is substantial difference in the rates of return home between the younger and older groups sufficient to warrant a closer examination of the reasons responsible for it.

This finding would suggest that if the decision makers of the overseas scholarship programme are desirous of an increase in the likelihood of return home of students from abroad (i.e. a policy target goal that is higher than the 37% rate of return home in this study), then because age is a statistically significant factor, more of the older age group should be awarded overseas scholarships than the younger students because of their tendency to return home. Incidentally, the older students also successfully graduated at a higher rate than the younger students. Thus, they are more likely to graduate and return home at a higher rate than the younger students. This policy suggestion could however have broader ramifications than just the award of the scholarships. The older students, by definition and life expectancy status, have shorter working lifespan than the younger students – all other things being equal (ceterus paribus). As such, they would have relatively shorter period to contribute their developed human capital to the economy than the younger students even though they are more likely to return home to do so than the younger ones who would train and acquire the requisite high skills but are less likely to return to contribute at all to the manpower pool for the State.

7.5.1.3 The Selection Criteria (SC) Factor

The model predicts that the mode of selection (selection criteria) of a candidate is not statistically significant and so it is not associated with the likelihood of a student returning home from study abroad. However to the extent that it is considered, the students selected under the merit criterion were .138 times more likely to return home than protocol students. The policy implication is that if the policy goal is to increase upon the current 37% rate of
return home, then the proportion of the merit students should be increased in relation to their protocol counterpart.

In terms of the actual return home rates in Chapter 6, 42% of protocol students returned home compared with 39% of merit students. These return rates are at variance with the model prediction of likelihood of return home for these category students. The difference in the rates of return is only 3% and the model has already predicted that the selection criteria, as a factor, are not statistically significant to associate with the likelihood of return home. In terms of policy implication, the suggestion would be that the policy decision makers need not make any changes to the current mode of selection with regard to the likelihood of return home from study abroad as it would matter very little or not on the overall likelihood of return home outcome.

7.5.1.4 The Successful Graduation (SG) Factor

The findings in Chapter 6 showed that successful graduation is statistically significant as a determinant predictor of the likelihood of return home from study abroad. Those who had successfully graduated were 1.292 times more likely to return home from abroad than those who had not successfully graduated. However the graduation status of an overseas scholarship beneficiary can only be ascertained on completion of the studies. As such it cannot be an input in the decision at the time of award. This and other studies, have highlighted factors such as gender, age, selection criteria and level of award that affect rates of successful graduation (see section 7.2 on research Objective 2 above). These factors can therefore be used as a guide to determine which candidates are more likely than others to successfully graduate and thus increase their likelihood of return home at the end of their studies abroad. In addition, incentives could be used to lure successfully graduated students
to return home at the end of their studies if the policy goal is to increase likelihood and the rate of return of successfully graduated recipients.

7.5.1.5 The Immigration Policy of Study Destination Country (IPDC) Factor

As a factor accounting for the likelihood of return home of students from abroad, the immigration policies of the study destination countries were found to be statistically significant. This is as expected because each country’s visa regulations determine the conditions of entry and residency status of a student studying in that country. For example, the F-1 Visas in the USA allow students into the USA to study but not for employment purposes. A different type of visa (J-1) is needed to stay back after studies. In India and Singapore, the visas issued to the students required them to unconditionally return at the end of their studies and indeed they needed to have nominated “Guardians” in the study destination country throughout the duration of their studies. Also, with reference to immigration policy, Bijwaard and Wang (2016) citing Mahroum, 2000; Vertovec, 2002; Tremblay, 2005; argued that some major host countries, like Australia have benefited from their strategy of using special migration policies aimed at university graduates to attract specific human resources in demand. And so their immigration policies are much more liberal than others.

The prediction of the model is supported by the descriptive statistics findings of the rate of return home of the students from study abroad where all the students (307 at 100%) from all the three (3) countries with the lowest tolerance levels for immigrants (India, Singapore and Thailand) returned home. All (100%) of the students that did not return home (803 at 62% of 1298) studied in the five (5) liberal immigration policy countries of Canada, Ireland, Switzerland, UK and USA.
The immigration policy of the study destination country is a continuous independent variable in the study. In accounting for its effect on return home, it showed that the lower the index (stricter immigration policy), the higher the likelihood of return home. Conversely, the higher the index (more liberal immigration policies) the lower the likelihood of the students returning home. The implication is that sponsoring countries should consider sending more of their students to stricter immigration policy study destination countries in order to increase the likelihood of return home of their scholarship beneficiaries.

This consideration should however include other factors that may affect the final outcome. For example, the findings regarding rate of successful graduation showed that female students graduated at a higher rate than the male students but they returned home at a lower rate and are predicted to be less likely to return home from studying abroad. In order to counter their likelihood of not returning home, female students could be sent to study in countries where the immigration policies force them to return home. This should however be balanced against other considerations such as the quality and standards of the education in those study destination countries and the availability of the courses of study. There are also other factors such as racial and cultural discrimination and violence against minorities where they also had higher indices for these stricter immigration policy study destination countries that need to be considered as discussed in Objective 4 above. For example, Talburt and Stewart (1999) cited racism and sexism as factors that could affect students studying abroad. The countries with low tolerance for immigrants are more likely to be affected as indicated in the Social Progress Index (2015).

7.5.1.6 The Level of Development (LDDC) Factor

The level of development of the study destination country was found not to be a statistically significant factor in estimating the likelihood of return home from studying
abroad. This means that neither the high nor the low level of development of a study destination country materially affected the likelihood of returning home for the students on the overseas scholarship programme in this study. Bijwaard and Wang (2016) also found that international students’ non-return home intentions are not associated with the level of development of the country in which they studied.

The theoretical expectation, however, was that developed countries should have more employment opportunities and infrastructure to “pull” the students to stay back after their studies (Altbach and Ma, 2011; Mazzarol and Soutar, 2002; Li and Bray, 2007; Gross and Connor, 2007; Cheung and Xu, 2015). Conversely, the less job opportunities and infrastructure of the developing countries such as India, Thailand and Nigeria would act as a “push” factor in deterring them from returning home (Han et al., 2015). The findings matched the theoretical expectations because students returned home at a lower rate from developed countries than from the developing study destination countries.

Furthermore, because the level of development of a study destination country is a continuous variable in the conception of this model, the higher the level of development, the lower the likelihood of return home from abroad. Conversely, the lower the index (developing) the higher the likelihood of return home. India and Thailand had the lowest indices and all (100% of their 183 student population) returned home. The 183 students from the stricter immigration policy countries represented 37% of total return home whereas the 6 developed countries of Canada, Ireland, Singapore, Switzerland, UK and USA contributed only 312 (28% of their student population of 1115) to the return home. The implication would therefore suggest more students to be sent to the developing countries as they are more likely to return home from studies abroad. However, policy and decision makers need to weigh the benefits to be gained by studying in developed economies against the consideration of the less likelihood of their return home.
7.5.1.7 The Level of Award (LA) Factor

As a predictor factor, the influence of level of award (LA) on the likelihood of return home after studying abroad was found to be statistically significant. This means that any decisions taken on the level of PG or UG awards are likely to impact on the overall rate of return home of the beneficiaries of the overseas scholarship. The PG’s were 0.294 times more likely to return home from study abroad than the UG’s. The study found and the predictive model confirmed that the rate of successful graduation of postgraduate (PG) students was higher than for undergraduate (UG) students and they were also more likely to return home after studying abroad than the undergraduate (UG) students. The implication of this would ordinarily be that the postgraduate awards should have a larger proportion of the total awards if the target policy goal is to increase the likelihood of return home from studying abroad.

However, as discussed under Objective 4, because of the age restrictions on these awards, the postgraduate students are likely to be the older students and thus have a shorter working life after graduation. Also, attention needs to be paid to the industry skills gap in the home country to determine exactly what skill sets are needed and at what level. Furthermore, in general, PG’s are more likely to go into academics and research and could therefore form a basis for capacity building of lecturers and researchers at home.

7.6 Summary of the Discussions

The highlights of the discussions of the findings of this research are as follows:

a) The review of the extant literature in Objective 1 found that overseas scholarships is a targeted education tool for the development of human capital. The findings of this study show that the education of the beneficiaries through this overseas scholarship programme has developed their skills and thus the 89% rate of successful graduation achievement is in line with the human capital theories of human capital development.
b) By developing human capital through the implementation of this overseas scholarship programme, the outcomes of the programme were aligned with its policy goal but the extent of the alignment could not be definitively determined as there were no quantifiable policy goals of outcome targets.

c) The findings confirmed the results from previous studies that, in common with other government-funded overseas scholarship programmes, all the overseas scholarship programmes reviewed in the extant literature did not have pre-set quantifiable and measurable output or outcome targets and therefore difficult to assess their success or failure and suggests that policy goals should include quantifiable and measurable outcome targets.

d) Overseas scholarship programmes would benefit from setting quantifiable outcome targets. Furthermore, with respect to the likelihood of return home from studies abroad for a government-funded overseas scholarships with similar characteristics as the RSOSP, an innovative binary outcome model conceptualised in this research, would assist in setting quantifiable SMART policy goals using the seven (7) predictor factors identified in this study. These are gender, age, selection criteria, successful graduation, immigration policy of the study destination country, level of development of the study destination country and the level of award.

e) Two new concepts of development of human capital “of the state” and “for the State” were introduced into the literature. The “of the State” concept refers to the total human capital developed (89% successfully graduated) as a result of implementing the overseas scholarship programme although the majority of them did not return home. However this successful graduation was a necessary but not sufficient condition for making the developed human capital available at home “for the State”. Only 37% of the students met this sufficient condition.
f) With reference to Objective 2 - analysing the rate of successful graduation, the overall successful graduation rate was 89% of all the students expected to have graduated within the period. Although there were no set measurable policy targets for successful graduation, this achievement is considered to be very good. A detailed breakdown of the rates showed higher rates of achievement by females, older, merit, stricter immigration policy countries, developing countries and postgraduates. The implication would be that these higher achievers should be awarded more overseas scholarships as a proportion of the total population to improve upon the overall rates of successful graduation. However these suggestions need to be weighed against workplace demographic balance and the skills needed and at what level in the home country economy. More importantly, if they need to return home to add to the manpower pool then their individual category of rate of return home needs to be weighed against their successful graduation rates.

g) In identifying the factors that accounted for the success or not of the programme under Objective 3, the study found seven factors (7) of gender (GD), age (AG), selection criteria (SC), successful graduation (SG), immigration policy of the study destination country (IPDC), the level of development of the study destination country (LDDC) and the level of award (LA). The extent to which they accounted for the return home of the recipients was discussed later under Objective 5.

h) The policy goal of the RSOSP identified human capital development “for the state” as the policy goal (target). As such, the combination of successful graduation and return home (SGRH) overrides successful graduation (SG) alone (human capital development “of the State”) in the assessment of the relative success of the RSOSP in aligning its policy goal with the outcomes.

i) In ascertaining the rate of return home, the study found that the overall rate of return
home was 37% of the study population. An analysis of this result showed that the higher rates of return home were recorded by males, older students, protocol, stricter immigration policy countries, developing countries and postgraduates. As with successful graduation, the implications and suggestions would be that these categories are awarded more scholarships than the others in order to increase the rate of return home. However, the same argument would apply about the demography of the workforce balance and the needs of the home country economy to identify the skills gap needed at home and decide which factors best fulfil those specific needs.

j) The study further found that paradoxically, in the cases of gender and selection criteria, females and merits were higher achievers by rates of successful graduation but lower achievers in terms of return home from abroad. Female students graduated at a higher rate but males returned home at a higher rate. Similarly, merit students graduated at a higher rate but protocol students returned home at a higher rate. The suggestions for increasing the proportion of the awards would therefore be conflicting depending on what policy goal took precedent. Policy makers need therefore to identify which of these take precedence or how to achieve an equitable balance in the workforce.

k) To achieve and improve upon this policy goal, the binary logit regression testing of the null hypotheses showed the following factors to be statistically significant in determining the likelihood of return home from study abroad:

   i. Age
   ii. Successful Graduation
   iii. immigration policy of the study destination country
   iv. Level of Award
These are the factors that require more focus and attention of the policy makers in formulating policies and strategies for the successful graduation and return home of beneficiaries of the overseas scholarship programme.

The following factors were found not to be statistically significant and as such they would not materially impact on the likelihood of return home from study abroad.

i. Gender

ii. Selection Criteria

iii. level of development of the study destination country

Chapter 8 is the final chapter of this thesis. It consists of the summary of the study, implications of the findings – theoretical, methodological and policy, conclusion, recommendations for policy actions, study limitations, and suggestions for further research and contributions of this research to knowledge.
CHAPTER EIGHT

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The aim of this study was to examine the alignment of policy goals and outcomes in developing human capital using the findings from an assessment of the relative success of the Rivers State Overseas Scholarship Programme (RSOSP); and in so doing make a contribution to knowledge through the research. The RSOSP is a targeted education intervention policy, wholly funded by the Rivers State Government of Nigeria to train suitably qualified students at the tertiary education level in selected disciplines and study destination countries abroad.

This final chapter of the study presents the summary of the report, the implications of the major findings of the study and the conclusion. It also contains the recommendations, limitations of the study and suggestions for further research as well as the contributions to knowledge of this research.

8.1 Summary of the Study

The report of this study is summarised in eight chapters. Chapter 1 provided an introduction to the research with the general background and context on human capital theories and the use of education as an approach in developing human capital. The emphasis was using overseas scholarships as a targeted education approach in filling skills gaps, deficiencies and needs of the home country. The development of human capital is recognised as being important for the growth and development of both the individual and nation and it is acknowledged that overseas scholarships can lead to the development of human capital. However, there is a dearth of data, information and knowledge on the success or otherwise of these overseas scholarships programmes and this has necessitated the motivation for this study. In order to contribute to filling this yearning gap in knowledge and extant literature, this study aimed to analyse the relative success of an overseas scholarships programme fully
funded by the Rivers State Government of Nigeria to develop human capital for the State. To achieve this aim, the study set five specific research objectives to guide it using the database of RSOSP for the first time to elicit an understanding of the experience and to assess the effectiveness of this government-funded overseas scholarship programme in developing human capital for the State.

Chapter 2 dealt with the review of extant literature from theoretical and empirical viewpoints. The review of the theoretical framework covered the human capital theories and definitions. It went further to look at the importance of human capital development for the productivity of the individual and for national economic growth as well as its development through investing in education. It specifically reviewed the use of overseas scholarships in developing human capital. The literature review of government-funded overseas scholarship schemes revealed a noticeable gap in the use of both descriptive statistics and binomial econometric methods to assess the efficacy of using overseas scholarship programme to develop human capital. This study attempts to address some of these issues by using the RSOSP dataset with emphasis on successful graduation and return home as outcomes for measuring success.

Chapter 3 reproduced the documented processes and procedures of the Rivers State Overseas Scholarship Programme (RSOSP) which highlighted the policies, context, operational processes and administration. The chapter contained the objectives of the scholarship programme (policy goals), the categories of the awards and courses, destination countries of study, the selection process and criteria for the award, responsibilities of the agency (RSOSP) and the eligibility of applicants. It revealed a rigorous process of administration, documentation, selection and verification of the awards.
Chapter 4 contained the design and development of the conceptual framework of the study and identified the dependent and independent variables. It modelled the study equation indicating the likelihood of the operational association between the independent and dependent variables. This framework conceptualised that the dependent variable was the likelihood of return home from study abroad and identified seven (7) predictor variables (with their justifications) that could influence the likelihood of returning home (RH). These factors were gender (GD), age (AG), selection criteria (SC), successful graduation (SG), immigration policy of study destination countries (IPDC), level of development of study destination countries (LDDC) and level of award (LA). It went further to formulate seven null hypotheses based on these predictor variables which were tested and reported in Chapter 6.

Chapter 5 noted that the dataset was numerical in nature and so easily lends itself to statistical analysis to achieve the findings needed for the study. It therefore adopted a quantitative research methodology on ex-post facto data. The chapter also contains the research design, population of the study, total population purposive sampling technique, secondary data sourced from internationally recognised publications, such as the United Nations Development Programme Reports, and the published annual reports and documentation of Rivers State Sustainable Development Agency (RSSDA – administrators of the programme). It adopted both descriptive statistics and binary logistics regression analytical methods; and the model specification of the equation that was conceptualised in Chapter 4 that captured the theoretical and functional relationships between the variables.

Chapter 6 was the data analysis and findings using both descriptive statistics and regression analyses. The descriptive statistics consisted of tables, charts for trend analysis, frequencies, percentages and proportions to ascertain the rates and common functional relationships that could exist between the variables. Also, the binary logistic regression
analysis was undertaken using SPSS version 23 on Windows 8.1 (64 bits) to test the tenability of the seven (7) null hypotheses.

From the data analysis, the study findings were summarised as follows:

i) The RSOSP successfully graduated (SG) 89% (1,152) of the qualifying 1,298 awardees with 37% (485) of them successfully graduating and returning home (SGRH). But, 667 (58%) of all the successfully graduated students did not return to their home country from their study abroad.

ii) The factors that determined the success or not of the programme were successful graduation (SG) and return home (RH) from study abroad. These factors were further categorised into gender (GD = Male or Female), age (AG = Younger or Older), selection criteria (SC = Merit or Protocol), successful graduation (SG = Graduated or Not Graduated), study destination country comprising - their Immigration Policy (IPDC) and their Level of Development (LDDC), and the level of award (LA = Undergraduate or Postgraduate).

iii) Using descriptive statistics of cumulative frequencies and percentages of the student population of their individual categories, females, older, merit and postgraduates successfully graduated at a higher rate than their male, younger, protocol and undergraduates counterparts. Also, the stricter immigration policy countries and the developing study destination countries recorded higher successful graduation rates than their more liberal immigration policy and more developed countries counterparts.

iv) With respect to returning home from study abroad, the males, older, protocol, successfully graduated and postgraduates returned home at a higher rate by their individual population categories than females, younger, merit, not successfully graduated and undergraduate students. Again, the stricter immigration policy
countries and the developing study destination countries recorded higher rates of return home from study abroad than the more liberal immigration policy and more developed countries.

v) Paradoxically, females and merit students successfully graduated at higher rates by their study populations but they recorded lower rates of return home than the males and the protocol students.

vi) The predictive model for the regression analysis was tested for goodness of fit, validity and accuracy and was found to be 85.7% accurate in predicting the actual observations in the dataset and explained 62.5% of the quantifiable variations that may occur in the interactions of the independent variables. This is considered to be a very satisfactory goodness of fit for the regression analysis.

vii) The binary logistic regression analysis found that age (AG), successful graduation (SG), Immigration policy of study destination country (IPDC) and level of award (LA) were statistically significant in predicting the likelihood of return home from study abroad; with AG, IPDC and LA joint first and SG coming fourth.

viii) Within these categories, the older, successfully graduated, stricter immigration policy countries and postgraduate students were more likely to return home from studying abroad than the younger, not successfully graduated, more liberal immigration policy countries and the undergraduates.

ix) The regression analysis also revealed that gender (GD), selection criteria (SC) and level of development of the study destination countries (LDDC) were not statistically significant as predictors of likelihood of return home from study abroad. However, to the extent that they contributed to the likelihood of return home males, merit, and students from the developing destination countries of
study were more likely to return home than females, protocol and students from the more developed destination countries of study.

Chapter 7 was the discussion of the findings of the study. The discussion was undertaken under the headings of the research objectives and explained how the study objectives were met. Accordingly, the discussions covered: (i) the review of the extant literature on human capital theories, human capital development through education and in particular using overseas scholarships; (ii) analysis of the rates of successful graduation (SG) of the recipients; (iii) identification of the factors that accounted for the success or not of the programme from the perspectives of global and localised outlooks; (iv) ascertaining the rate of return of the successfully graduated beneficiaries from study abroad to their home country; and finally (v) accounting for the factors that influenced the rate of return home of Rivers State scholarship beneficiaries from overseas studies.

Chapter 8 is the concluding chapter of this thesis and it provides details on the summary of the report, implications of the major findings, conclusion, recommendations, limitations and suggestions for further research. It ends with the contribution of this research to knowledge.

8.2 Implications of the Findings

8.2.1 Theoretical Implications

The theoretical expectation from the literature reviewed is that human capital is important at the micro level; that is, for an individual because it affects his/her productivity and earning ability and also important for a nation at the macro level as it impacts national productivity, economic growth and development. It is therefore important to develop human capital and investing in education and training is one way of doing so. Individuals and nations
have therefore been investing in education over the years with varying degrees of effectiveness and success in developing their human capital.

In line with this argument of individual and national human capital development framework, the Rivers State Government of Nigeria invested in an overseas scholarship programme as a targeted education intervention to develop human capital for the State. The two outcomes of this wholly funded government education policy scheme were (i) the human capital developed of 1152 (89%) individual citizens of the State (as proxied by the successfully graduated beneficiaries of the programme); and (ii) the 485 (37%) stock of developed human capital that has been contributed to the manpower pool for the State (as proxied by their return home after graduation from study abroad).

These achievements would seem to be grounded in and also conform to the human capital development theoretical expectations with the theoretical implication that investing in overseas scholarships (a targeted education programme) does actually lead to human capital development as posited in the human capital theories (Schultz, 1961; Becker, 1994; Mincer 1975) and the RSOSP programme has been successful in achieving this. The theoretical implication of these achievements is that the human capital theories have real life implications for the development of human capital in the forms of successful graduation and return home in the case of this study.

8.2.2 Methodological Implications

Methodologically the study used descriptive statistics and binary logistics regression analysis in ascertaining the rates of successful graduation and accounting for the success or not of the programme. The descriptive statistical analysis revealed that 89% of the total awardees graduated while 11% had not graduated. Furthermore, it also revealed that 37% of them had returned home as against 63% that had not returned home over the period covered by this study.
The findings of this study, particularly in testing of the hypotheses, also revealed that the model that was designed and used for the binary logistic regression explained 62.5% of the variation in the likelihood of students to return home after their studies and was 85.7% accurate predicting the actual observations in the dataset. This was used to predict the likelihood of students to return home following the study abroad. Therefore, the methodological implication of the use of binary logistic regression model in accounting for success or not of RSOSP is that for this and other overseas programmes, with similar characteristics to the RSOSP, this binary outcome model can be used to predict the likelihood of return home from study abroad and indeed by varying the various independent (variables) factors, it can assist in setting measurable policy outcome targets for these government-funded overseas scholarships programmes. Also, binary logistic regression analytical technique is suitable in predicting the likelihood of an event occurring, in our case, the likelihood of returning home from an overseas scholarship programme.

8.2.3 Policy Implications

i) As with other reviewed government-funded overseas scholarship programmes, the RSOSP did not have measurable quantified outcome targets for the programme. The policy implication of this is, that it is difficult to assess whether or not the policy goals and expectations of the programme have been met because there is no quantified benchmark for measurement. As such, as a matter of policy, decision makers should consider appropriate mechanisms to enable the setting and measurement of policy goals and therefore able to assess the success or otherwise of the overseas scholarships programmes. This is because a well-defined policy outcome targets would lead to proper assessment of the scholarship programme.

ii) The RSOSP successfully graduated 1152 (89%) of the total qualifying 1298 awardees. Although it did not have a quantifiable outcome target for successful graduation, this
would appear to be a very good achievement. The policy implication therefore is that the programme has been successful in developing human capital (as proxied by the successfully graduated students) and so sending students to those destination countries with good and high quality education would encourage success in academic endeavours and develop the human capital of the State.

iii) As a percentage of their individual categories, the females, older, merit and postgraduates successfully graduated at a higher rate than their male, younger, protocol and undergraduate counterparts. Also, the stricter immigration policy countries and the developing study destination countries recorded higher successful graduation rates than their more liberal immigration policy and more developed countries counterparts. The policy implication of these findings would be to encourage and increase the proportion of the higher rate achievers in order to increase the overall rate of development of human capital. A complementary policy implication would be to review the reasons for the lower rates of successful graduation by the males, younger, protocol and undergraduates with a view to improving them.

iv) With regard to return home from study abroad, the findings also showed a rate of return home of 37% at 485 successfully graduated students from all those who travelled. This represents 42% of all the students who successfully graduated. Again it did not have a policy outcome target for the rate of return home of successfully graduated beneficiaries even though they represent the most important category in terms of adding to the manpower pool available for the State in the home country. The policy implication is that the current rate of return home is likely to have been below the expectations of the policymakers and therefore requires attention to address the underlying factors that are responsible for the low rate of return home.
v) Males, older, protocol, successfully graduated and postgraduates returned home at a higher rate by their individual population categories than females, younger, merit, not successfully graduated and undergraduate students. The rates of return home from the stricter immigration policy countries and the developing study destination countries were higher than the rates of return home from the liberal immigration policy and more developed study destination countries. The policy implication of these rates of return home would be that by increasing the proportion of the higher achievers relative to the lower achievers, the overall rate of return home would increase and therefore this should be the focus of the attention of the policy makers.

vi) With respect to likelihood to return home from study abroad, the binary logistics regression analysis found that four (4) of the seven (7) factors that accounted for returning home following studies abroad were statistically significant. These were age (AG), successful graduation (SG), immigration policy of the study destination country (IPDC) and level of award (LA). Furthermore, age, immigration policy of study destination country and level of award were jointly more statistically significant than successful graduation. In other words, they should be prioritised higher than successful graduation in any rankings of the factors. In particular, older, successful graduates, students in stricter immigration policy countries and postgraduates were more likely to return from study abroad than their counterparts. This has a major policy implication because in prioritising the factors that influence the likelihood of return home from study abroad, the model predicts that these four factors have the highest influence and so should be prioritised ahead of all others.

vii) The other three (3) factors of gender (GD), selection criteria (SC) and level of development of the study destination country (LDDC) were not statistically significant in influencing the likelihood to return home from study abroad. The policy
implication therefore is that time and resources allocated to them will not materially influence positively or negatively on the likelihood of return home from study abroad.

8.3 Conclusion of the Study

Based on the findings, the study concluded that the outcomes of the RSOSP scholarships programme were aligned with its policy goals because it was relatively successful in developing human capital of the State but not so successful in returning the successfully graduated students home to add to the manpower pool available for the State.

8.4 Recommendations

In view of the policy implications of the major findings in 8.3.2 above and the conclusion, the following recommendations for improvement are advanced for consideration by the relevant authorities responsible for implementing overseas scholarship programmes with similar characteristics as the Rivers State Overseas Scholarship Programme (RSOSP).

i) The overseas scholarship programme has been relatively successful and should therefore be continued with some improvements as recommended below.

ii) Increase the proportions of females, older, merit and postgraduate students and send them to stricter immigration policy and developing countries of study in order to increase the rates of successful graduation.

iii) Increase the proportions of males, older, protocol and postgraduate students and send them to stricter immigration policy and developing countries of study in order to increase the rates and likelihood of return home from study abroad.

iv) Concentrate on age, successful graduation, postgraduates and the immigration policies of study destination countries because they are the statistically significant factors that influence the likelihood of return home from study abroad.
v) Set quantifiable, specific, measurable, achievable, realistic and time-bound targets for successful graduation and return home as key success factors.

vi) Deploy the binary choice regression model as a forecasting tool to set the outcome targets.

vii) Create incentives such as improved job opportunities and attractive remuneration packages to entice successfully graduated students to return home from study abroad. Also, consider legally binding agreements to return home with the students and study destination countries.

8.5 Contributions to knowledge

8.5.1 Theoretical Contribution

i) This is a baseline study that used the dataset of the Rivers State Overseas Scholarship Programme (RSOSP) for the first time to analyse the relative success of achieving its policy goal of creating a skilled manpower pool (a developed human capital stock) for Rivers State in particular and Nigeria in general. This was an investment in education for the development of human capital. The achievement of developed capital from the implementation of this government-funded overseas scholarship programme is in line with extant human capital theories which posit that investing in education is a form of human capital development.

ii) Also, using the dataset and findings of the RSOSP for the first time in academic research, the study now offers a useful foundation for developing cross-national and cross-programme understanding of the most appropriate theoretical and policy design in implementation of such government-funded overseas scholarship programmes. The findings could provide comparison yardstick for other studies and become
theoretical expectations for other and future studies of overseas scholarships with similar characteristics.

iii) For a government-funded overseas programme there is always the fear of brain drain which is understandable because the educated and now highly-skilled personnel from usually developing countries often stay back in the host study destination countries. This study has raised a policy concern for the first time regarding successful graduation which is a necessary condition precedent before the secondary concern of whether they return home or not to add to the manpower pool (home labour force). There is no known reference to it in extant literature but it is very important necessary condition for human capital development for the home country. This distinction is highlighted in this study and termed human capital development of the State representing a broader human capital development perspective. When eventually the successfully graduated students return home it then fulfils the sufficient second condition of human capital development for the State meaning that they have returned home to add to the manpower pool. The emphasis in the current extant literature on brain drain is only on return home with little or no concern on the intermediary necessary condition of successful graduation before the secondary and sufficient condition of returning home to become developed human capital available at home.

8.5.2 Methodological Contribution

i) The study successfully combined descriptive statistics and binary logistic regression methods to create an understanding of the experience of using RSOSP database to analyse the alignment of policy goal and outcome of this human capital development initiative. It thus has confirmed that these are valid methodological tools that can be deployed in other studies of similar characteristics when assessing the success or not of overseas scholarship programmes.
ii) The study has also laid the groundwork to specify a model for the assessment of the probability (likelihood) of return home (RH) of students from study abroad. The determinant factors that were identified in the study that may influence the return home or not of the beneficiaries are gender (GD), age (AG), selection criteria (SC), successful graduation (SG), immigration policy of destination countries (IPDC), level of development of destination countries (LDDC) and level of award (LA). The model is specified as follows:

\[
\text{Prob. (RH)} = \frac{\pi}{1-\pi} = b_0 + b_1GD + b_2AG + b_3SC + b_4SG + b_5IPDC + b_6LDDC + b_7LA + U
\]

This binary outcome probability predictive modelling is new and novel and is therefore an addition to the tools that could be used to assess the effectiveness or success of a government-funded overseas scholarship programme. It is also capable of being used to set policy outcome targets because the factors in the equation could be varied in line with their statistical significance to achieve a predictive likelihood of rate of return home from studying abroad.

8.5.3 Empirical Contribution

i) This empirical study using the RSOSP data for the first time in academic research has revealed that age, successful graduation, immigration policy of the study destination country and the level of award are statistically more significant than gender, selection criteria and level of development of the study destination country in predicting the likelihood of return home from studying abroad of students on this government-funded overseas scholarship programme.

ii) The study also revealed that, empirically, the human capital development rate (proxied by rate of successful graduation) of this RSOSP programme was 89% and the rate of return
home was 37% representing a “brain drain” rate of 67%. These would be useful statistics in practice and also for research purposes as benchmarks for other similar programmes.

8.6 Limitations of the Study

This study has addressed a number of issues pertaining to the alignment of policy goal and outcome in developing human capital using Rivers State Overseas Scholarship programme (RSOSP). However there were some limitations in undertaking the research. These are highlighted as follows:

i) This was a specific study of an overseas scholarship programme wholly funded by the Rivers State government of Nigeria. It did not include other overseas scholarships such as those funded by other organisations and private individuals. Consequently the generalisation of the findings of the study is limited to the Rivers State Overseas Scholarship programme (RSOSP) and other overseas scholarships with similar characteristics.

ii) This was a quantitative study of the numerical facts using statistical tools for the analysis of the observations of the secondary dataset obtained from the books and records of the administrators of the programme. It addressed the after events position such as successful graduation and return home of the beneficiaries (ex-post facto). As such it dealt with what happened and used the findings to explain why they happened. It did not address the behavioural and attitudinal attributes of the students. For example, while it answered the question of why the rate of return home was low because less merit students returned home as a proportion of their numbers, it did not answer the behavioural question of why they did not return home. To answer the question of why they did not return home would have required obtaining perception
variables such as job and security fear factors at home from them. This was not included in this study.

iii) Complete information and data on two potentially important determinant factors of "courses of study" and "family status" were not available for most of the students in the study population. The analysis of these factors could potentially have reduced the 37.5% variation in the variables not included in the study and so reduce the stochastic error factor in the model.

These limitations notwithstanding, the findings of the study are still valid and reliable for policy and practical applications and can be used to generalise the development of human capital using an overseas scholarship programme with similar characteristics as the RSOSP.

8.7 Suggestions for further research

Based on the research limitation, further research in the following areas would build upon and add value to this research:

i) Expansion of the study to include other overseas scholarship programmes to examine how the factors identified in this study will behave using their own peculiar study populations. For example, how would the rates of successful graduation and return home change if there were no age restrictions on the awards or if uncertainty of source of funding was a constraint?

ii) What were the reasons for contrary expectations between the theory and actual observations of higher rates of successful graduation in stricter immigration policy countries and also in the developing countries where the literature would point to a lower rate of successful graduation in those circumstances? And what are the implications for policy decisions on the study destination countries as a consequence?
iii) A complementary qualitative research into the behavioural aspects, perceptions and reasons for the successfully graduated students who did not return home from study abroad. What factors influenced them and why? Could these factors be linked to the “Push” and “Pull factors” or other variables? This would involve surveys and interviews to obtain primary data unless verifiable secondary data is already available.

iv) A follow up tracking study could be useful in ascertaining what the successfully graduated students who returned home are doing now (employment status). Are they actually contributing to the national economic growth and development as envisioned by the policy makers in setting up and implementing the overseas scholarship programme? If they are not contributing, for example if they are still unemployed, then why? Has this capital development increased their earning potential? The findings from this further research may have implications for the emphasis of the programme such as the courses of study, age, level of award, or indeed the quality of the education and relevance for the home market and industries upon return home.

v) There were 2,118 scholarships in total awarded on the programme and this study only covered 1,298 of them due for graduation between 2008 and 2015. There are no more new awards. This was therefore an interim study. It would be of research interest to study the entire programme at the end of the period when all the beneficiaries were meant to have graduated and returned home to see if this interim position still holds.
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<table>
<thead>
<tr>
<th>ACRONYM / TERMINOLOGY</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AG</td>
<td>Biological age of the student - Old or Young</td>
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<tr>
<td>BCP</td>
<td>Becas Chile Scholarships Programme</td>
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<td>CBN</td>
<td>Central Bank of Nigeria</td>
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<td>CIA</td>
<td>Central Intelligence Agency</td>
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<td>CSC</td>
<td>Commonwealth Scholarships Commission</td>
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<td>DAAD</td>
<td>The German Academic Exchange Services</td>
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<tr>
<td>ED/CEO</td>
<td>Executive Director / Chief Executive Officer</td>
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<tr>
<td>GCE</td>
<td>General Certificate of Education</td>
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<tr>
<td>GD</td>
<td>Gender of the student - male or female</td>
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<tr>
<td>GHOP</td>
<td>Greater Horizon Opportunities Programme (a post primary scholarship Programme)</td>
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<td>GM</td>
<td>General Manager</td>
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<td>GPA</td>
<td>Grade Point Average</td>
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<td>HCD</td>
<td>Human Capital Development</td>
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<td>Human Capital Theory</td>
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<td>HDI</td>
<td>Human Development Index as published by the United Nations</td>
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<td>HDR</td>
<td>Human Development Report that publishes the HDI</td>
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<td>HOU</td>
<td>Head of Unit</td>
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<td>HRM</td>
<td>Human Resource Management</td>
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<tr>
<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
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<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>IPDC</td>
<td>Immigration Policy of Destination Country of study</td>
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<tr>
<td>ITLI</td>
<td>Immigrants Tolerance Level Index as published by the Social Progress Index</td>
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<tr>
<td>KSF</td>
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<td>Level of Award - undergraduate or postgraduate</td>
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<td>LGA</td>
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<td>LPM</td>
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<td>NUFFIC</td>
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<td>Description</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<td>OLS</td>
<td>Ordinary Least Square</td>
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<td>Extent of alignment of the policy goals and outcomes</td>
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