

Africa's Most Wanted? Examining predictors of return migration among highly skilled education migrants from Sub Saharan Africa

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ABSTRACT

Governments, donor agencies and private corporations invest in the expatriate education of the most talented individuals from various Sub-Saharan African countries. These investments are expected to reap benefits for the countries of origin when these individuals, after acquiring knowledge and skills abroad, return to their home countries. Most of them are expected to rise to leadership positions in industry, academia and government. However, few return, bringing into question whether the investment of state resources in the education of these individuals is justified. In this thesis, I examine predictors for return migration in a population of highly skilled education migrants using logistic regression models. I look at the impact of preference variables, wage variables, wealth variables, bondage variable and family variables on the likelihood of being a return migrant controlling for age, region fixed effects and gender. I find strong evidence of a negative association between preference variables and the likelihood of being a return migrant. The likelihood of being a return migrant also exhibits a weak positive association with construction work and a weak negative association with possessing a graduate degree. Bonded scholarships have no statistically significant association with return migration.

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1. INTRODUCTION

Annually, Lesotho, a tiny country completely landlocked by the Republic of South Africa, finances the education of the top ten candidates in the national O-level examinations. Most of these candidates pursue higher education in South Africa and the best are sent to United World Colleges overseas where they will continue their education and eventually enrol into universities in North America or Europe. In 2010, the government of Botswana restarted its scholarship program for all top performers in the IGCSE examination that gain admission into undergraduate programs overseas. This kind of investment in the education of the most talented individuals is not unique to these two countries alone. Many countries, companies, and scholarship foundations in Africa practice it. The rationale behind these investments in education of talented individuals abroad is that they will enjoy a greater calibre of instruction and training overseas than they would in tertiary institutions in their home countries. Eventually these students are expected to return to their home countries to reinvest these skills and knowledge. However, very few of these individuals return to their home countries upon completing their education abroad². If analysed using the terms of Bhagwati (1974), their choice to remain migrants upon completing their education constitutes a loss to the society from which they hail. This is because when states finance the education of skilled workers, they lose the potential return on their investment from taxation on the wages of these skilled workers when said individuals emigrate, worsening the welfare of those left behind. How do states ensure that they get returns on investment from funding the education of these talented individuals abroad?

² Interview with Director of the National Manpower Development Secretariat, 2015

Countries like Botswana and Mali use bonded government scholarships as an attempt to keep these talented students from deciding to not return after their education is completed, but results from this study show that these bonded scholarships do not have a significant effect on the high-skilled individual's likelihood to return. This may be the case because in most Sub-Saharan countries there is a deficiency in the state capacity to ensure that these contracts are upheld. For these governments it may be important to understand why talented education migrants do not return to their home countries at the end of their education abroad. Part of the process of answering that question involves working to understand why some return while others do not. In this thesis I explore the predictors of return migration among highly skilled education migrants.

Results from this study show that preference variables are stronger predictors of return migration than economic incentives. Specifically, weather sensitivity and personal value alignment are stronger predictors of return migration than occupation, education or wealth variables. Having no graduate education is also emerges as a good predictor of return migration, while studying law or business (which are graduate degrees in the US) negatively impacts the probability of being a return migrant. Law is also largely country-specific, so individuals who study it outside of their home country could also find it difficult to practise in their home country, resulting in a lower likelihood of return. The significance of these variables is not as high as that of the preference variables. Being in construction is also associated with increased chances of return migration, which could be explained by the availability of infrastructure development projects in developing countries in Sub Saharan Africa. Being away from home for up to two years is a strong predictor of return migration, but beyond that there is no significant association with

return migration, suggesting that two years may be a ceiling of the time away for which individuals may decide to return to their home countries. Individuals' perception of bribery or nepotism and being on a bonded scholarship are not significantly associated with return migration.

These results complicate the idea of return migration incentivisation suggested by the current literature and suggest that perhaps income maximization is not the entire preoccupation of education migrants. The research also provides quantitative evidence that for the sample of individuals used for the study, bonded scholarships are not effective means to reduce emigration of highly skilled education migrants. For education migrants in this study, choice of undergraduate degree course is not associated with return migration in either direction. This result differs from other studies that have looked at highly skilled migrant flows of individuals who completed their education in their home countries. This indicates that for this particular population, selecting into programs is not a pathway to remaining in destination countries.

The rest of the thesis will lay out the conceptual framework of the study and situate the discussion in this thesis within the larger context of the literature on highly skilled migrant flows. After this, I shall describe the creation of the data set and some descriptive statistics of the sample before moving to the modelling and data analysis portion of the paper. I follow that with results, then a discussion of the results and a final conclusion.

2. CONCEPTUAL FRAMEWORK

Much of the literature on migration has focused on aspects of the migration process, from initial departure, the journey, arrival, settlement and integration, but return migration remains relatively understudied. Scholarly work on return migration to the African continent is even more lacking, which is detrimental because return migration has important implications for both source and destination countries alike. Migrants have significant fiscal impact since they contribute to productive labour, pay taxes and partake in market processes. Return migration may be an important area of study for source countries having an interest in utilizing return migrants to replenish the human capital lost through initial emigration.

When it has been studied, return migration is often analysed through the lens of neoclassical economics of incentives. Yang (2006) notes that return migration is a ‘puzzle to exclusively income-maximizing models of migration.’ He summarizes motives of return using two modes. The first is the assumption that migrants prefer consumption in their home country to consumption overseas, and thus choose to return when the marginal lifetime benefit from additional income being earned overseas falls below the marginal cost of being away from their home country. The second motive he suggests is that there are liquidity constraints and minimum investment levels in the home country, which cause migrants to return once they reach a certain target-earnings level. Borjas and Bratsberg (1996) discuss a third motive for return, which is that immigrants return if they experience outcomes that are worse abroad than they would experience at home. Gibson and McKenzie (2009) summarized these motives as preference, wealth and wages respectively. To these explanations of return migration, I add non-voluntary motives in

the form of bonded scholarships as a fourth class of motives for return migration and family structure variables as a fifth.

To study the impact of these five motives of return migration, I collected survey data from a population of education migrants from sub Saharan Africa between September 2015 and April 2016. This survey captures the outcome variable of interest, which is whether the respondent is a return migrant or not. This outcome variable is a binary 'yes' or 'no' variable determined by the response that an individual gives to the survey question about whether he or she is a return migrant or not. I operationalize the five motives by obtaining education information and family socioeconomic status to capture wealth, sensitivity to weather and alignment of current location with respondent's values as preference variables, sensitivity to salary when making migration decisions and occupation as wage variables, and the type of scholarship to provide the bondage variable. Lastly I use questions about family demographics both about parents and the respondent's own family to get the family variables that could be associated with a greater or lower instance of return migration. I run a series of logistic regressions with the marginal effects at means in order to get an estimate of the association between the independent variables and the outcome variable, and I make comments on the economic significance of the associated effect by comparing percentage point changes reported on the marginal effect tables. In my regression analyses, I am controlling for destination country, age group, gender and source country.

According to the current literature on migration flows, I should expect to get more significant associations between wage and wealth variables and return migration. Theories of migration posited by economic literature operate under the assumption that

migration decisions are motivated by utility maximization, but most of the results reported, such as those in Yang (2006), represent utility maximization as the ability to command a higher monetary premium from migrating, which my preliminary qualitative work refutes. In my in-depth interviews with returnees, it became clear that individual preference played a significant role in the decision to repatriate—preference for the pace of life, the culture, et cetera. These preference variables are part of the utility maximization function as well, but cannot be monetized, which has led to their exclusion from prior econometric analysis models. I hypothesize that preference variables will play a greater role in determining return migration than wage or wealth variables for my specific sample of respondents.

The reasoning behind this is that unlike their unskilled or semi-skilled counterparts, highly skilled migrants, especially those who receive an abroad education, are likely to face a different set of choices. For instance, there is a perceived additional value to being educated abroad, mostly arising from the fact that the most highly competent individuals are offered opportunities to study abroad. This means that for most highly skilled individuals, the choice to return home could, and in some cases does, present a greater income after PPP adjustments to potential earnings. This is corroborated in John A. Arthur and Thomas Yaw Owusu's book *Africans in Global Migration: Searching for promised lands* where they write:

Returning migrants from abroad are well positioned to become middle or upper class upon return. Most adopt and import the lifestyles they are accustomed to while living in the West...A growing number of [return migrants] live in gated

communities and drive imported SUVs. Their children, if any, attend private schools where tuition is paid in foreign currency as well. (Page 296)

What John Arthur and his colleague highlight is an observation that I also made during my qualitative interviews, both with highly skilled Africans in the diaspora, and those who returned to South Africa. From these sources, it becomes apparent that the decision to expatriate or repatriate are not driven only by income incentives, since this effect could work both ways. This then begs the question of which factors predict return migration for highly skilled Africans who studied abroad for their education.

3. CONTEXT

The question of brain drain has been a persistent one in the dialogue about development in Sub Saharan Africa since decolonization happened in the region. Skilled human capital is invaluable for both the socio-political and economic development of the region, so it is no wonder that the subject remains contentious and important today. According to Beine et al (2008), there was a 63.7% increase in the number of highly skilled immigrants residing in OECD countries in 2007, which signals a striking growth in international migration flows. This extraordinary trend brings renewed interest to the old brain drain debate, especially for developing regions such as Sub-Saharan Africa. The forces of globalization and technological and infrastructural achievements that make cross-continental movement possible and safe have made migrant flows inevitable. If this intra- and interstate movement is inescapable, then it is surprising that the rhetoric around this mobility remains largely negative. The term brain drain is still used to describe these movements of highly educated individuals from developing countries to more resourced and developed ones. This term suggests a loss incurred by the developing country.

Recent research, however, points to the possible advantages of this freedom of labour movement today.

The perception of migration as detrimental persisted in the literature until the 1900s, when scholars subverted this literature by hypothesizing and demonstrating (albeit quite inconclusively) mechanisms through which emigration of skilled labour could result in a net brain gain for source countries. The four main mechanism through which this happens are the incentive effect of migration on educational achievements in the source countries, the capital flows (remittances) from migrants who remit to source countries at significant rates, the transfer of technology arising from migrants connecting source countries with new technology, and lastly, the foreign direct investments that source countries receive through connections that emigrated skilled labourers foster with developed economies in which they work (see Appendix C for further discussion on research on these brain gain mechanism).

Even with these perceived benefits of migration, most developing countries, international development agencies and philanthropic bodies still hold on the rhetoric of emigration as a loss. In fact, with the recent shift of international donor funding from primary education to secondary and tertiary education, many agencies and governments are using bonded scholarships and forgivable loans as a means to quell the high numbers of education migrants who decide to stay abroad when their education programs are completed. The assumption underlying the implementation of bonding policies is that these highly educated individuals would be natural leaders in their home countries, and would bring with them the desire to build institutions and reform parts of the public sector.

Even when formal bonding is not instituted, various scholarship bodies like

Rhodes Scholarship, the Chevening Scholarship and the Gates Scholarship still require students to make oaths to either return or pledge a certain portion of their wealth to the countries they come from. This model has been so compelling in fact, that between 2010 and 2015, donors and foundations such as the Master Card Foundation have pledged upwards of 600 million dollars to programs such as the Master Card Foundations Scholarship, the African Leadership Academy, and more recently the African Leadership University³. All these programs believe that providing high quality education opportunities to young African students can be used as a means to reverse the trend of poor leadership and corruption on the continent. As such, these organisations send hundreds of students to the US or Europe annually, and expect them to spend anywhere between 5 and 10 years living on the African continent upon their return. Their endeavour relies on the narrative of mobility as loss. While these programs have been successful at procuring students, whether these students will return or not remains to be seen. It is in this current context of ‘talented tenth’ models of human capital development and leadership development that this thesis is undertaken.

3.1 LITERATURE REVIEW ON RETURN MIGRATION

Many papers have observed the macroeconomic determinants of the disparity in the levels of brain drain across countries (Docquier, Lohest and Marfouk, 2007). They find country size to be an important determinant, with much higher emigration (and thus lower return migration) from smaller states than from larger states. Work by Belot and Hatton (2008) also considers country-level determinants such as income level, distance to

³ Master Card Foundation Scholars Program Report

major destinations, colonial region, language and political environment to explain the variances in brain drain across different regions. My study captures the political environment through the usage of indices for perception of the prevalence of nepotism or bribery in the judiciary and in political processes, but I find no significant correlation between higher scores on these indices and whether respondents remain immigrants or become return migrants. I was also not able to use macroeconomic data to perform country level comparisons since I did not have access to data from different countries.

Micro-economic perspectives on return migration have been provided as well. Massey and Lindstrom (1994) argue that human capital differentials distinguish return migrants from ones that are on going. In their argument, return migrants are failures, whose low skills (lower educational attainment and little work experience) prevent them from succeeding in the destination. Alternatively, Stark and Galor (1990) suggest that return migrants can also be seen as successes whose high skills allow them to save enough money to return to origin after meeting some pre-arranged earnings. For my study, education migrants are always either successes or on the path to becoming successes, so their migration decisions would be dependent on wage potential or wealth. Wage potential, as measured by the pursuing and gaining a graduate degree, is a predictor not of return migration but of migrants staying overseas, which runs counter to what the literature suggests. The theory could potentially hold because my result could indicate that individuals may have not reached their earning limits, but I could not test or determine this from the survey data.

There has also been literature on non-economic factors that affect return migration. The literature makes the case that the economic ‘success-failure’ dichotomy is

insufficient for understanding return, which needs to be understood in the larger institutional context of family (Dustman, 2003). Most papers written on the developing world argue that prospective migrants face difficult choices to leave children with parents when they pursue better work opportunities far from home. Dreby (2007) suggests that this migrant work poses difficulties because separation may weaken parent-child relationships, causing migrant parents to return. My results do not align with these observations, possibly because my sample includes middle-income education migrants, most of whom meet their partners while studying or working abroad. As such the population in my survey may face few difficulties with childcare since they can afford to have their children migrate with them if necessary.

4. DATA

4.1 Qualitative Interview: In depth interviews and Participant observation

This study employs a mixed methods approach to explain the variation in migration decisions for highly skilled education migrants from Sub Saharan Africa. First, I carried out qualitative interviews and participant observation in San Francisco, London, Johannesburg, Cape Town and Maseru between June and August 2015. My interviews targeted expatriates from Sub Saharan Africa who had completed their education outside of their home countries, and either stayed abroad or repatriated to their home countries. I conducted a total of 45 interviews with 25 South Africans, 5 Basotho, 2 Namibians, 4 Zimbabweans, 5 Kenyans and 5 Nigerians, living in the 5 cities. These interviews were recorded, transcribed and analysed to understand common narrative threads in the stories

of expatriation or repatriation for this population. The qualitative data was also used to construct questions that I would follow up on later in the survey design process, and it also helped orient my interests, by assisting in the formulation of a working hypothesis that I went into the project hoping to prove or disprove. For this thesis, the qualitative data is used only to reinforce, complicate or texture the results that I have found from quantitative analysis, but is not used to make any claims of associations, unless it corroborates the quantitative analysis.

In addition to the interviews, I also frequented African diaspora community centres and congregation points in London, Johannesburg and Cape Town in an attempt to understand the social composition of these places. I was specifically interested in the ways that individuals living outside their home countries perform their nostalgia, if they have any at all, and how they continue to relate to their home countries in a foreign place. An understanding of the lived reality of expatriate life was essential in gaining a sensitivity of the multiplicity of factors, both pull and push, that affect migration decisions for individuals, especially highly skilled individuals, 's migration decisions. This qualitative research was invaluable for grounding the thesis and keeping me interested in the subject matter through the difficulty of the surveying process.

4.2 Survey Data for Quantitative Analysis

4.2.1 Defining the Sample Frame and Creating the survey

In order to perform a person-level analysis of the determinants for return migration for highly skilled individuals, I had to get comprehensive data on both highly skilled individuals who decide to remain abroad and those who return to their home countries. Standard surveys, however, do not provide this information, since many

studies done in the past have relied on nationally representative surveys in the migrant origin country. It is customary for households surveyed in this manner to request members to report on behalf absent migrant members. These nationally representative surveys have a drawback of providing little, if any, information on the most highly skilled education migrants from a country. An additional data source which could have a good representation of highly skilled migrants could be specialized census micro-data sources from both source and destination countries. These surveys, while likely to represent highly skilled migrants, do not have enough detailed information on these individuals to examine the determinants of migration. As a result, a new specialized survey approach is required.

For the quantitative analysis used in this thesis, I created and distributed a survey to Africans who completed their undergraduate or postgraduate or undergraduate and postgraduate degrees at a university outside of their country of birth. This sample included individuals born to African parents, who stayed in their country of birth until the completion of their primary school education. In addition, these respondents also had to have completed their bachelor's degree abroad.

4.2.2 Reasoning for chosen sample frame

The assumption behind this requirement is that the sample of Africans educated outside their home countries is likely to also capture the individuals with high ability. For a majority of Africans who study outside of their home country for their university education, high ability is more often than not a requirement for their admission to those education institutions. For this study, I focus on people's ability and not their specific occupations because to quantify brain gain, concerns about the extent

to which individuals self-select into occupations based on the ease of emigration in that occupation is limiting for analysis. Individuals who migrated out of their home countries without having completed any part of their education outside their home countries are not included in this survey because the factors motivating their decisions to emigrate are possibly different from the motivating factors for this particular set of highly skilled education migrants. All the migrants considered for the study have an 'abroad' education, and this can be considered as a possible pathway for migration regardless of what their areas of study is, making it easier to make comparisons between them.

The rationale behind the decision to only include individuals who had completed at least one degree at an institution outside their country of birth is that these individuals would have exercised their choice to return to their home countries or to stay away upon completing their programs of study. For individuals who only studied abroad only for their graduate degree, they would have to have completed that graduate study to be considered as part of the population of interest, since it is only after completing their graduate education that they are able to exercise their choice to repatriate or not. Individuals who completed their bachelor's degree outside of their country of birth, but who were enrolled in a graduate program at the time of completing the survey were considered to as part of the population of interest because between their bachelor's course and graduate course, they exercised a decision to remain outside their home country for further education. Indeed a choice to complete a second degree may be seen as an attempt to strengthen the likelihood of eventual highly-skilled migrant worker status in the country where they received their education or a different country altogether.

The population of Africans who completed their university education outside their home country represents highly academically competent students who eventually make up part of the highly skilled human capital for their respective home countries. It is these individuals who are the major focus for the study on brain gain that this thesis attempts to undertake, and about whom much of the conversation around brain gain are had. The shortage of local talent for jobs in industry, medicine, academia and state affairs is seen as detrimental for most developing countries (Bhagwati 1974). It is therefore important to not only understand how these people make decisions about expatriation and repatriation, but how important different factors are for predicting any individual's likelihood of return.

4.2.3 Survey creation and distribution

The respondents completed a 75 question electronic Internet survey that captured demographic data, education history (including programs of study, and countries and universities of study), individual characteristics of respondents and respondents' perceptions about public service provision, democracy and the rule of law apparatuses in their countries of birth. The mode of delivery of the survey restricts the external validity of any results acquired from it because it was only accessible to individuals with an Internet connection and those with a certain level of computer literacy. To identify the population of interest, I employed the snowballing technique, starting with the Stanford database and my immediate social networks as my first respondents. The people I reached out to were instructed to reach out to others as well, resulting in an expanding circle of respondents. This was intended to approximate randomness because when ripple

effect of transmission occurred, the degrees of separation from the original contact (in this case myself) to the respondents eventually would increase. The representation of respondents reveals some of the shortcomings of this method of respondent recruiting. Although the higher education African diaspora in the United States and the United Kingdom predominantly consist of students from East and West Africa, my sample has a disproportionate Southern African overrepresentation, which may reflect a selection bias arising from my personal networks.

In addition to email distribution, the link to the survey was posted on social networking platforms and passed on to embassy representatives for Lesotho and South Africa as an attempt to reach as many respondents as possible. These platforms have a mix between migrants and return migrants who lived in the diaspora represented by the page that they are on, so it could be used to capture responses for both returnees and expatriates. In order to get unbiased responses from these platforms the survey was posted on the walls on Facebook groups, or distributed on electronic mailing list as a survey of migration and education, and described as a survey on migration and education. The reasoning behind this is that when people fill out a survey about brain gain or brain drain, they take on nationalistic positions when responding to the questions, and are more likely to give biased responses. This was discovered upon interviewing four separate groups of people who took the pilot survey before it was hosted online.

Another avenue for sending surveys was through recruiting contacts from universities in South Africa, UK, and USA, who would circulate the survey within their networks. A strategy I used to increase response rates was to ask contacts to circulate the survey to same-nationality prospective respondents, and to market it as a survey for the

“top students” in their particular countries. This was reported to have a positive impact on response rates in general.

The survey captures multiple factors that could affect the decision to repatriate among people who studied outside of their countries of birth for their bachelor’s degree, graduate degree or both. Factors such as sex, length of program of study, marital or relationship status, program of study and relative family socioeconomic status are a few of the variables that are captured by the questions in the survey. In addition to these, there are questions about individual characteristics of the respondents, such as reported patriotism, sensitivity to weather and job market incentives et cetera. There are also questions that identify the means by which each of these individuals finances their education outside their home country. The last collection of questions addresses a few perceptions that the respondents have about the transparency and fairness of healthcare, education, government tender awards and justice systems in their individual countries, as well as their beliefs about democracy and governance. The survey is meant to cover the economic, personal and socio-political factors that affect an individual’s decision to return to their home country or not, after the completing their education abroad. An additional consideration that this survey captures, that is lacking in the brain gain and brain drain literature, is the role of intra-continental migration in questions of brain gain and brain gain. Specifically the survey reveals complexities that arise from intra-continental brain gain, which accounts for the highest amount number of skilled human capital movements in Southern Africa, where South Africa is the recipient of skilled labour from surrounding regions.

In the pilot survey, questions about race, reports of income by the respondents were not usually answered and when interviewed about the survey, most participants indicated that those questions dissuaded them from wanting to answer many of the other questions on the survey as well. The question about race was dropped from the survey and information on compensation for different interests was not asked either. I wanted to use data from the National Income studies for source and destination countries to obtain salaries for people in industries identified on the survey, both at home and abroad. This data would be matched to respondents by age and educational attainment, and adjusted for purchasing power parity in order to allow for meaningful comparison to be made. This would then be used to regress for the income effect in these regions. The process of finding credible sources of average compensations by industry for all the countries proved extremely difficult, so instead I incorporated a question on respondent's sensitivity to salaries when making migration decisions to capture this 'income effect'. For future studies, finding the expected premium for return migration could provide more robust results.

While the survey provides a basis for quantitative modelling of decisions for skilled migration, it suffers from sampling challenges arising from the medium of distribution and the lack of randomization, which raises a few questions about replicability, causal inference and generalizability. Given the small sample size, and the unorthodox distribution and recruitment model, it is hard to say whether results drawn from this analysis can be useful outside the strict confines of the population being studied. Sampling is an important facet that limits generalizability of any results made from the data gathered for this survey. The survey nonetheless offers insights that if

extended beyond the confines of this specific dataset, could provide revealing data that can affect education policy and human capital development strategy in the developing world. For future work, financial incentives could be given to individuals to encourage participation, and perhaps a few countries can be selected for study for micro-level assessment. This was not possible in this project due to funding constraints.

5. DESCRIPTIVE STATISTICS

Appendix 1 outlines the descriptive statistics for both the current migrant and return migrant populations. These statistics highlight similarities and disparities that could explain the difference in decisions to repatriate for highly skilled African education migrants. A key limitation of these statistics is small number of observations for each of the populations. A total of 200 respondents completed the survey, 157 of whom were current migrants and 43 who were return migrants. The small number of return migrant respondents may not provide an adequate representation of the entire return migrant population, but these statistics are nonetheless important in understanding this particular population. Insights from this study could be used for a more robust and well-funded project on understanding motivations for the return migration among highly skilled education migrants going forward.

5.1 Demographics of respondents

The 200 observations represents a diverse collection of respondents. The respondents come from 26 African countries from North, East, West and Southern Africa. Of these regions, North Africa (represented by Morocco, Egypt and Algeria)

reports the lowest representation at three per cent of the sample. In the analysis observations are clustered by region (with the exception of South Africa which is used as a region of its own) since some countries have observations that would predict success or failure perfectly. The country with the most respondents is South Africa, with 37% of the respondents, followed by Lesotho and Zimbabwe with 11% and 9% of the respondents respectively. Table 1.1 shows the details of all the countries represented by the 200 respondents.

64.5% of the 200 respondents are females, while 33% are males. 5 respondents did not indicate their gender on their survey responses. 47.00% of the respondents are between the ages of 19 and 25 inclusive, 27.5% are between the ages of 26 and 35 inclusive and 22% are 35 years old or older. 3.5% of the respondents did not fill out their age in the survey. The youngest person in the sample is 19 years old, and the oldest is 72 years old, giving a 53-year age range for the sample. Of all the respondents in the survey, 27.5% completed their pre-tertiary (primary and or high school) education outside their home countries. Of these, 40% completed their pre-tertiary education in South Africa, 14.54% in Swaziland and 12.72% in the United States of America, representing the three most popular destinations for respondents to complete pre-tertiary education. South Africa has a number of international high schools, which may be the draw for educational migrants at the high school and primary school levels. The country also hosts ten of the top higher education institutions on the continent, so talented and able individuals could be moving to South African high schools as a means to get admission into South African universities later on. Swaziland is also highly represented possibly because it is the home

of the only United World College (UWC) on the African continent. UWCs are often seen as a pathway to education in South Africa or outside the African continent.

71.5% of the respondents completed their undergraduate education outside their home country. A majority of the respondents pursued their undergraduate degree in the United States of America, with 42% of the 200 respondents citing a US institution as their alma mater. 11.5% of the respondents completed their education in South Africa, and 5% in the UK. The USA's allure for undergraduate education may be explained by the financial aid programs that most top tier US colleges and Universities have for talented individuals. It must be noted that of the students who studied outside of their home country for their undergraduate degree, 28.5% cited non-bonded and non-government scholarships (grants) as a source of funding, and in the US these usually come in the form of financial aid. 15.5% funded their education completely from parental support, 11.5% from other bonded scholarships, 6.5% from bonded government scholarships, 5% from loans and 2.5% from non-bonded government scholarships. There is considerable variation in the chosen programs for study. 21.5%, 16.5%, 16%, 16% and 10.5% of the respondents report choosing the social sciences, engineering, math and science, business and humanities as a course of study respectively.

Many of the respondents were either working or studying, and some were doing both. 48.68% of the respondents reported that they had only one secure job, and 32.24% were studying (enrolled in graduate programs). Of the respondents in the survey, 21.72% were return migrants and 78.28% are current migrants. A greater share of the return migrants is female.

5.2 Family descriptive statistics

As the demographic information of the respondents suggests, this particular sample represents fairly well to do African migrants (15.5% could pay for their university education abroad). Most of them (70.40%) reported that they had at most 3 siblings, and 96.05% were raised by both or one biological parent. 41.45% of the respondent indicated that their female guardian had an undergraduate degree or more, with a majority (21.71%) reporting that their female guardian had an undergraduate education. The trend is similar for male guardians, where 49.34% of the male guardians are reported to have an undergraduate degree or more, with most reporting that their male guardian had a Masters degree (27.63%). It is also important to note that 48.03% of the respondents reported that one or both of their guardians had been educated outside their home country. It is possible that parents could model migration decisions for children, especially parents who returned to their home countries. An additional detail obtained from the survey was one regarding self reported socioeconomic status of the respondent. This was framed within the context of the respondent's country of birth. 32.24% of the respondent identified their family as upper middle class or higher, 46.71% as middle class, 15.79% as lower middle class and 5.26% as lower class.

5.3 Comparative Statistics

Comparing the descriptive statistics for current migrants and return migrants provides insights to some of the subgroup differences that could explain the difference in migration decisions. The average age of return migrants is 27.75 years, which is lower than the 30.46 years average reported for current migrants. This difference suggests that current migrants tend to be older than return migrants. Since the reported statistics are

snapshots instead of panel data, it is difficult to say whether young people are more likely to return than older education migrants.

58.1% of return migrants responded ‘yes’ to the question that asked whether they would self-identify as a patriot or not, compared to 72.0% of current migrants. This difference runs counter to what one would expect. Patriots would be expected to move back in greater numbers because of their nationalistic ties to their home countries, but the instance of patriotism is higher among current migrants than return migrants. This suggests that patriotism does not have any impact on migration decisions, and creates the need for further analysis of this observation.

The return migrant population tends to be more male than the current migrant population. In this sample, 40% of the return migrants are male, while 32.26% of current migrants are males. This could suggest the possibility of gender playing a role in migration decisions. The return migrant population also reported fewer individuals with graduate degrees than the current migrant populations. 62.4% of return migrants had graduate degrees compared to 50.5% of current migrants. This difference may signal that graduate degree holders choose to remain migrants at a higher rate than those without graduate education. This observation could be attributed to the availability of jobs for individuals with advanced skillsets in migrant destination countries. Additionally, it could be that individuals with graduate degrees can command higher salaries overseas than they can at in their home countries where they could be underemployed.

T-tests at the means are also carried out for the demographic details of return and current migrants, in order to ensure that reported differences or similarities between the two populations are statistically significant. Table 3 tabulated the differences in

means for each of the demographic variables, as well as the standard errors and an indicator of statistical significance. According to t-test analysis, the dummies for whether a respondent is a student or not, a healthcare worker or not and whether they do not have a graduate degree had differences in means that were statistically significant at the 5 per cent level. The dummy for whether an individual was from the BLMNS (Botswana, Lesotho, Malawi, Namibia and Swaziland) region also showed a statically significant difference in means at the 10 per cent level of significance, as did the dummy for unemployment. For rest of the variables, there is no reason to believe that there is any difference in means since the significance levels are not within 10 per cent level of significance.

6. MODELLING DETERMINANTS OF RETURN MIGRATION

6.1 ‘Push-to’ or ‘Pull-from’ Factors for return migration

For my analysis, I look only at return migration, defined as the choice made by an individual to return to their home country upon completion of their education abroad. Given the income gains from migration suggested by a vast majority of the literature on human capital migrant flows, one might question why any of the education migrants in this sample return after completing their education abroad. The respondents provided a variety of reasons, which could be categorized as ‘push-to’ or ‘pull-from’ factors for return migration. In this sample of 200 respondents, of the 43 return migrants, 10 indicated work as a primary reason for their return home. 3 listed family as a reason for their return, while 7 listed the requirement to serve a bonded scholarship as a reason for

their return. A majority of these respondents marked ‘other’ as a reason for their return, so the nature of their return is not understood completely.

From the qualitative interviews, reuniting with friends and family remains the strongest reason why expatriate interviewees return home. A majority of the respondents (27 out of 45) said friends and family are the key reason why they did or would make the decision to come home. Lifestyle also remains a trigger for Africans abroad, cited by 35% as a significant reason why they did or would move home. A sense of belonging is also a core reason why people decide to return, cited by 14 of the respondents as reason why they would or did move home. Making a difference (22%) and career opportunity (20%) are also important reasons why interviewees abroad did or would return. Other reasons cited include weather (14%), the people (11%), having kids (10%), food (7%) and culture (4%). These are all pull factors that impact return migration.

These push-pull factors from these interviews were then used to create preference variables that captured weather sensitivity, personal value alignment with their current community and levels of fulfilment. These variables are dummy variables that are either true or false, and they are used in the quantitative analyses that follow.

6.2 Predictors of return migration

To analyse return migration, I estimate a logistic regression with independent and dependent variables. Since I am not using panel data, there is no lag between my dependent and independent variables. The usage of snapshot data is a weakness of this mode of analysis, but it proved to be a valuable first parse of the study. This study

nonetheless provides an interesting set of results and observations that add to the literature on return migration and brain gain.

As independent variables, I include economic measures (education, occupation and self reported socioeconomic class), family factors (marital status, whether the respondent has children or not, and whether they have foreign partner or not), preference factors (weather sensitivity, value-place alignment and sense of fulfilment in current location), multivariate indices for the score on perception of the prevalence of bribery and nepotism in their home country, and controls for demographic characteristics and region fixed effects. I correct for clustering of regions using robust standard errors, and to determine the magnitude of effects of the main independent variables I use marginal effects at means.

6.3 Measures

My human capital measures include education and occupation variables. Occupation variables are a series of dummy variables for different occupations ranging from commerce to agriculture and industry. Education is captured in a dummy variable for whether the respondent has a graduate degree or not. This is because the whole sample has at least a Bachelor's degree, so the only variation comes from graduate study. Another education variable is a series of dummy variables for the undergraduate course that an individual graduates from. Since the sample is of highly skilled education migrants, I do not expect to see a huge effect reflected by these course-of-study variables, but on the naïve regression they are included.

Family measures include the marital status of the respondent, a dummy for whether they were raised by their biological parents, a dummy for whether they had met their life partner in at home or abroad, and a dummy for whether they were in a relationship with a foreign partner or not. The preference variables, likewise, are a series of dummy variables that represent whether a person is sensitive to weather, has values aligned with their current location, and is fulfilled or not in their current location. The perception indices for prevalence of bribery are multivariate indices constructed from principal factor analyses of each respondent's response to questions about the relative need for either bribery or nepotism in the provision of healthcare, justice, education and in bidding for government tenders (See Table 5).

The other set of variables not usually tested for in literature on return migration predictors are the variables for scholarship type. These variables are a series of dummy variables for whether an individual is on a bonded scholarship, non-bonded scholarship or paying for their undergraduate education out-of-pocket. In another regression, a dummy for whether the student is bonded or not is used to represent this scholarship type variable. If bonded scholarships were effective, then bonded scholarships should predict return migration perfectly. If this is were not the case, then further research could be conducted to understand why bonding fails to ensure the return of highly skilled education migrants.

7. Results

Table 4 presents the marginal effects from logistic estimation of the correlates of being a return migrant among a sample of education migrants. I pooled current and return migrants across sub-Saharan Africa, but included region fixed effects, since the sample sizes are small for each country and region, and the results from region by region estimation are qualitatively similar across regions. Approximately 23.08% of the combined sample are return migrants. Substantial item non-response on the online surveys means that not all variables are available for every returned or current migrant. For this reason, I investigate the role of various sets of variables, before combining them together in a naïve catch-all regression. I include age and gender, with return migrants being slightly younger on average than current migrants, as shown on Table 1 and Figure 1. According to the logistic regression, gender difference plays an insignificant role in whether migrants return or not.

Column 8 examines the role of parental education on the likelihood of return migration in the sample, holding constant age, gender and the region from which an individual comes. Specifically, the effect of having a mother or father with college education is tested. According to the logistic regression there is no statistically significant effect of parental education on the likelihood of return for education migrants in the sample. Column 7 looks at the effect of bonded scholarship agreements on the likelihood of return migration using the same controls as column 8. According to the regression, bonded scholarships do not have a statistically significant impact on the likelihood of return migration, although the marginal effect suggests a positive association. This result is interesting because bonded scholarships are supposed to serve as hard incentives for return migration for this population.

Column 6 looks at the role of salary sensitivity in explaining who returns. In this regression, similar controls were used as above, and people who indicated that they would not move to a place for a well paying job had a statistically significant 19.6 percentage point greater likelihood of being a return migrant than those that were salary sensitive. This is supported by the current literature that suggests that people choose to migrate or return based on income incentive. The association is significant at the 10 per cent level, indicating only a weak association.

Column 5 then examines whether the likelihood of returning varies according to partner choice. Specifically I look at whether individuals with foreign partners, individuals who met their partners at their country of birth, and those with foreign partners whom they met at their home country report are more or less likely to be return migrants. According to the logistic regression, there is no statistically significant effect of partner choice on return migration. It is important however to note that the marginal effect of having a foreign partner is negative, indicating that respondents with foreign partners are less likely to be return migrants. The marginal effects for partners who met in the home country of the respondents, whether they were foreign or not, are positive, indicating that these individuals would be more likely to become return migrants. These results in line with what one would expect even though they are not statistically significant.

Column 4 tests the role of education choices in the decision to return. Educational migrants who studied arts as their undergraduate degree are 32.1 percentage points less likely to return than those in other disciplines. This result is statistically significant at the 10 per cent level, and may be explained by the lack of opportunities for arts students in

most sub Saharan countries, where the creative industry is not well developed. Additionally individuals without a graduate degree are 17.5 percentage points more likely to return than those with graduate degrees, and this result is significant at the 5 per cent level.

The regressions in column 3 capture the effects of preference variables on return migration. Respondents who are weather sensitive are 18.9 percentage points less likely to return than those who are not. This result is significant at the 1 per cent level. The dummy for personal value alignment with the location also significantly affects the likelihood of returning. For this sample, individuals who felt personal value alignment with their current location were 13.2 percentage points less likely to be return migrants than those who did not. This highlights that most people choose not to return their home country because they feel that their destination countries are in line with their values. These values could encompass political, moral or lifestyle requirements. The dummy for whether an individual felt fulfilled or not and the indices for perception of bribery or nepotism did not significantly affect the likelihood of return migration in the population.

Column 2 examines the role that wealth plays in return migration decisions. One would expect wealth to be positively correlated with return migration since family wealth would increase the income opportunities available domestically, either directly through family social networks helping to arrange better paying jobs, but the results from this analysis indicates no statistically significant impact of wealth on return migration at all.

Column 1 is the catchall naïve regression that captures all the variables together for the sample that answered all of these questions. The point estimate are broadly similar to those in later columns, and return migration is found to be more likely for people who

are using loans to pay for their undergraduate education (19.4pp more), those who are in construction (38.1pp more) and those without a graduate degree (16.5pp). Those with a law degree, business degree, individuals who are weather sensitive and those who reported that their current location was in line with their values were significantly less likely to return with margins of 23.7pp, 24.2pp, 17.9pp and 7.19pp respectively.

These econometric results essentially match the responses I received from qualitative interviews with education migrants in the United Kingdom and South Africa. 5 or 6 former Rhodes Scholars I interviewed had gone on to pursue careers in higher education in Canada, the US and the UK after obtaining doctoral degrees from the University of Oxford, supporting the finding that individuals with advanced degrees are less likely to return upon completing their education. Most of the interviewees pointed to access to travel opportunities, liberal politics and functioning public transportation as reasons for remaining away from home, which could be captured in the ‘personal value alignment’ dummy. For those who returned, the desire to ‘be part of the solution’ was a popular response followed by the desire to be close to friends and family. 3 of the interviewees had returned non-voluntarily in order to serve bonded scholarship requirements from companies that had funded their education. A few had also returned because of a scholarship requirements, specifically the Chevening scholarship. An interesting observation from this, however, was the awareness that the interviewee had of the difficulty of enforcing this bonded requirement. He/she was quoted saying “*You know people only return if they want to because what can they do if I chose to stay in America? Take my property? They can take all my mother’s chickens [laughs].*” This perceived

state weakness in enforcing contracts could explain why bondage does not make a real difference in migration decisions.

8. DISCUSSIONS AND CONCLUSION

I did not use natural experiment, instrumental variable or regression discontinuity analysis for this study, so no causal interpretation can be made from the analyses. The estimates provide associations between the independent variables and the outcome variable, but cannot be assumed to show a direct effect on the outcome variable. Nevertheless, the analysis has utility, since these associations can help us understand some of the key factors that are correlated with return migration. The factors could be isolated in further study and tested for causality.

The results of the regressions reveal a very high likelihood of return migration within two years of migrating, and no significant differences beyond the 2-year mark. For decisions to return, economic incentives for migrating seem to play only a minor role in predicting which of the highly skilled education migrants return and which ones do not, whereas preference variables are stronger predictors. This leads me to conclude that an income maximization model is not most appropriate model for analysing the first-order predicting of return migration for highly skilled education migrants. More emphasis needs to be placed on other components of the utility maximization decisions instead of focusing on income as the prime motive.

Looking at the results, I am driven to conclude that in the absence of the ability to ensure that bondage contracts are not upheld, Sub-Saharan Africans can use non-income focused policies to attract their best and brightest individuals, instead of focusing on

marginal changes in tax rates or increasing salaries. In fact, responses to open-ended questions posed to interviewees about policies to encourage return pointed to the need for more challenging careers, and better transportation, neither of which are reflected in wage or wealth variables as the literature would suggest.

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Table 1: Descriptive Statistics for Current Migrant and Return Migrants

| RETURN MIGRANTS | | | | CURRENT MIGRANTS | | |
|----------------------------------|-----|-----------|---------|-------------------------|---------|---------|
| Demographics | Obs | Mean | Std Dev | Obs | Mean | Std Dev |
| Age | 40 | 27.75 | 9.08 | 153 | 30.46 | 9.39 |
| Female | 43 | 0.558 | 0.5 | 157 | 0.66879 | 0.47 |
| Has children | 43 | 0.16279 | 0.35 | 157 | 0.29299 | 0.46 |
| Patriot | 43 | 0.581 | 0.5 | 157 | 0.71974 | 0.45 |
| Occupation | | | | | | |
| Commerce | 43 | 0.09302 | 0.29 | 157 | 0.09554 | 0.29 |
| Student | | 0.09302 | 0.29 | 157 | 0.31847 | 0.47 |
| Agriculture | | 0.02326 | 0.15 | 157 | 0.00637 | 0.08 |
| Industry | 43 | 0.04651 | 0.21 | 157 | 0.05732 | 0.23 |
| Healthcare | 43 | 0.16279 | 0.37 | 157 | 0.04459 | 0.21 |
| Other Industry | 43 | 0.2093 | 0.41 | 157 | 0.1465 | 0.35 |
| Service Industry | 43 | 0.11628 | 0.32 | 157 | 0.11465 | 0.32 |
| Education | 43 | 0.04651 | 0.21 | 157 | 0.10828 | 0.31 |
| Unemployed | 43 | 0.06977 | 0.26 | 157 | 0.01274 | 0.11 |
| Construction | 43 | 0.04651 | 0.21 | 157 | 0.01911 | 0.14 |
| Female guardian Education | | | | | | |
| No School | 43 | 0 | 0 | 157 | 0.03822 | 0.19 |
| Primary School | 43 | 0.04651 | 0.21 | 157 | 0.03184 | 0.18 |
| High School | 43 | 0.37209 | 0.49 | 157 | 0.30573 | 0.46 |
| College | 43 | 0.27907 | 0.45 | 157 | 0.41401 | 0.49 |
| Masters | 43 | 0.1860465 | 0.39 | 157 | 0.12739 | 0.33 |
| PhD | 43 | 0 | 0 | 157 | 0.05096 | 0.22 |
| Male guardian education | | | | | | |
| No School | 43 | 0.02326 | 0.15 | 157 | 0.04459 | 0.21 |
| Primary School | 43 | 0.04651 | 0.21 | 157 | 0.04459 | 0.21 |
| High School | 43 | 0.27907 | 0.45 | 157 | 0.19108 | 0.39 |
| College | 43 | 0.39535 | 0.5 | 157 | 0.33121 | 0.47 |
| Masters | 43 | 0.13953 | 0.35 | 157 | 0.24841 | 0.24 |
| PhD | 43 | 0.02326 | 0.15 | 157 | 0.06369 | 0.16 |
| Family SES | | | | | | |
| Upper class | 43 | 0.02326 | 0.15 | 157 | 0.02548 | 0.16 |
| Upper middle class | 43 | 0.1860465 | 0.39 | 157 | 0.3121 | 0.46 |
| Middle class | 43 | 0.48837 | 0.51 | 157 | 0.43949 | 0.5 |
| Lower middle class | 43 | 0.2093 | 0.41 | 157 | 0.15924 | 0.37 |
| Lower class | 43 | 0.02326 | 0.15 | 157 | 0.05096 | 0.22 |
| Education details | | | | | | |

| | | | | | | |
|--------------------------------|----|---------|------|-----|---------|------|
| Primary school in home country | 43 | 0.90698 | 0.29 | 157 | 0.84713 | 0.36 |
| High school in home country | 43 | 0.74419 | 0.44 | 157 | 0.68153 | 0.47 |
| Government bonded scholarship | 43 | 0.09302 | 0.29 | 157 | 0.05732 | 0.23 |
| Non govt bonded scholarship | 43 | 0.13953 | 0.35 | 157 | 0.10828 | 0.31 |
| Non bonded scholarship | 43 | 0.32558 | 0.47 | 157 | 0.30573 | 0.46 |
| Completely from family income | 43 | 0.09302 | 0.29 | 157 | 0.17197 | 0.38 |
| Loan | 43 | 0.06977 | 0.26 | 157 | 0.04459 | 0.21 |
| Education course | | | | | | |
| Engineering | 43 | 0.13953 | 0.35 | 157 | 0.17197 | 0.38 |
| Social Sciences | 43 | 0.2093 | 0.41 | 157 | 0.21656 | 0.41 |
| Humanities | 43 | 0.09302 | 0.29 | 157 | 0.10828 | 0.31 |
| Maths & Sciences | 43 | 0.2093 | 0.41 | 157 | 0.1465 | 0.35 |
| Arts | 43 | 0.02326 | 0.15 | 157 | 0.06369 | 0.24 |
| Interdisciplinary Studies | 43 | 0 | 0 | 157 | 0.03822 | 0.19 |
| Law | 43 | 0.02326 | 0.15 | 157 | 0.03184 | 0.17 |
| Business | 43 | 0.13953 | 0.35 | 157 | 0.16561 | 0.37 |
| Source Region | | | | | | |
| Anlgo West Africa | 43 | 0.13953 | 0.35 | 157 | 0.14012 | 0.34 |
| South Africa | 43 | 0.32558 | 0.47 | 157 | 0.38217 | 0.49 |
| Zambia & Zimbabwe | 43 | 0.04651 | 0.21 | 157 | 0.11465 | 0.32 |
| BLMNS | 43 | 0.32558 | 0.47 | 157 | 0.15287 | 0.36 |
| East Africa | 43 | 0.13953 | 0.35 | 157 | 0.10191 | 0.3 |
| No Grad Degree | 43 | 0.49471 | 0.49 | 157 | 0.3758 | 0.49 |

Table 2: Respondents country of birth

| COUNTRY OF BIRTH | FREQ | PERCENT | CUM. |
|-------------------------|-------------|----------------|-------------|
| ALGERIA | 1 | 0.5 | 0.5 |
| BOTSWANA | 4 | 2 | 2.5 |
| BURUNDI | 1 | 0.5 | 3 |
| CAMEROON | 8 | 4 | 7 |
| CHAD | 1 | 0.5 | 7.5 |
| EGYPT | 2 | 1 | 8.5 |
| ETHIOPIA | 2 | 1 | 9.5 |
| GHANA | 4 | 2 | 11.5 |
| IVORY COAST | 2 | 1 | 12.5 |
| KENYA | 14 | 7 | 19.5 |
| LIBERIA | 3 | 1.5 | 21 |
| MALAWI | 4 | 2 | 23 |
| MALI | 2 | 1 | 24 |
| MOROCCO | 2 | 1 | 25 |
| NAMIBIA | 4 | 2 | 27 |
| NIGERIA | 13 | 6.5 | 33.5 |
| SENEGAL | 7 | 3.5 | 37 |
| SOUTH AFRICA | 74 | 37 | 74 |
| SWAZILAND | 4 | 2 | 76 |
| TANZANIA | 4 | 2 | 78 |
| TUNISIA | 1 | 0.5 | 78.5 |
| UGANDA | 1 | 0.5 | 79 |
| ZAMBIA | 2 | 1 | 80 |
| ZIMBABWE | 18 | 9 | 89 |
| LESOTHO | 22 | 11 | 100 |
| TOTAL | 200 | 100 | |

Table 3: T-test on the differences in means for returnee and current population

| | Diff. in means | Std Err |
|--------------------------------------|----------------|---------|
| Age | 2.714 | (1.64) |
| female | 0.111 | (1.34) |
| Patriot | 0.138 | (1.74) |
| Commerce | 0.00252 | (0.05) |
| Student | 0.225** | (3.00) |
| Agriculture | -0.0169 | (-0.98) |
| Industry | 0.0108 | (0.27) |
| Healthcare | -0.118** | (-2.73) |
| Other_industry | -0.0628 | (-0.99) |
| Service_industry | -0.00163 | (-0.03) |
| Education | 0.0618 | (1.22) |
| Unemployed | -0.0570* | (-2.14) |
| Construction | -0.0274 | (-1.02) |
| Female Guardian Education | | |
| No School | 0.0382 | (1.30) |
| Primary School | -0.0147 | (-0.46) |
| High School | -0.0664 | (-0.82) |
| College | 0.135 | (1.61) |
| Masters | -0.0587 | (-0.98) |
| PhD | 0.0510 | (1.51) |
| Male Guardian Education | | |
| No School | 0.0213 | (0.63) |
| Primary School | -0.00193 | (-0.05) |
| High School | -0.0880 | (-1.25) |
| College | -0.0641 | (-0.78) |
| Masters | 0.109 | (1.52) |
| PhD | 0.0404 | (1.03) |
| Socioeconomic Status | | |
| Upper Class | 0.00222 | (0.08) |
| Upper Middle | 0.126 | (1.62) |
| Middle Class | -0.0489 | (-0.57) |
| Lower Middle | -0.0501 | (-0.77) |
| Lower Class | 0.0277 | (0.77) |
| Has children | 0.130 | (1.72) |
| Primary Education in home country | -0.0598 | (-1.00) |
| High school in home country | -0.0627 | (-0.79) |
| Source of funds for undergrad | | |
| Bonded Govt Scholarship | -0.0357 | (-0.84) |
| Non-govt Bonded Scholarship | -0.0313 | (-0.57) |
| Non Bonded Scholarship | -0.0198 | (-0.25) |
| Family Income | 0.0790 | (1.27) |

| | | |
|---------------------------|----------|---------|
| Loan | -0.0252 | (-0.67) |
| Undergrad course | | |
| Engineering | 0.0324 | (0.51) |
| Social science | 0.00726 | (0.10) |
| Humanities | 0.0153 | (0.29) |
| Maths and Science | -0.0628 | (-0.99) |
| Arts | 0.0404 | (1.03) |
| Interdisciplinary Studies | 0.0382 | (1.30) |
| Law | 0.00859 | (0.29) |
| Business | 0.0261 | (0.41) |
| Anglo West Africa | 0.000593 | (0.01) |
| South Africa | 0.0566 | (0.68) |
| Zambia & Zimbabwe | 0.0681 | (1.32) |
| BoLeSwaNaMa | -0.173* | (-2.59) |
| East Africa | -0.0376 | (-0.70) |
| No graduate Degree | -0.229** | (-2.73) |
| Foreign Partner | 0.0649 | (0.80) |
| Foreign Mother | 0.0133 | (0.22) |
| Foreign father | 0.0178 | (0.26) |
| Domestic Partner | -0.0520 | (-0.73) |

N

200

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

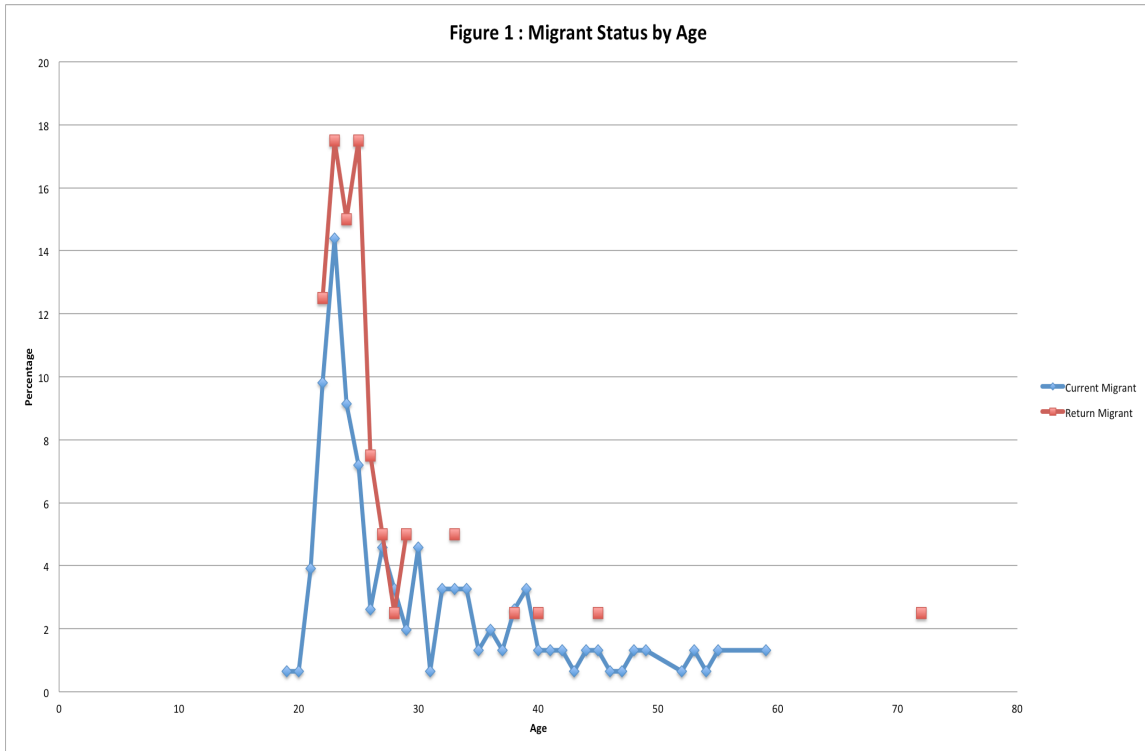


Table 4: What are Determinants of Return Migration Among Education Migrants?
Marginal Effects from Logit Estimation

| VARIABLES | (1) returnee | (2) returnee | (3) returnee | (4) returnee | (5) returnee | (6) returnee | (7) returnee | (8) returnee |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Demographics | | | | | | | | |
| Age | 0.00436 (0.00517) | -0.00737 (0.00634) | -0.00663 (0.00672) | -0.00579 (0.00636) | -0.00961 (0.00726) | -0.00868 (0.00689) | -0.00675 (0.00619) | -0.00788 (0.00624) |
| Female | -0.0149 (0.0631) | -0.0623 (0.0682) | -0.0212 (0.0696) | -0.0558 (0.0724) | -0.0542 (0.0667) | -0.0395 (0.0696) | -0.0529 (0.0689) | -0.0484 (0.0649) |
| Years Away from Home | | | | | | | | |
| Up to 2 years | 0.214** (0.103) | | | | | | | |
| 5 or more years | -0.0273 (0.0828) | | | | | | | |
| Dummy variables for Preference | | | | | | | | |
| Patriot | -0.0233 (0.0528) | | | | | | | |
| Weather sensitive | -0.179*** (0.0550) | | -0.189*** (0.0651) | | | | | |
| Values alignment with curr loc | -0.0719* (0.0427) | | -0.132** (0.0646) | | | | | |
| Fulfillment in curr loc | 0.00228 (0.0598) | | 0.0420 (0.0682) | | | | | |
| Family variables | | | | | | | | |
| Has children | -0.0717 (0.110) | | | | | | | |
| Foreign partner | -0.0134 (0.0444) | | | | -0.00192 (0.0747) | | | |
| Met partner in home country | 0.0319 (0.0736) | | | | 0.152 (0.0980) | | | |
| Foreign partner met at home | | | | | -0.124 (0.223) | | | |
| Mother is foreign born | 0.0560 (0.0805) | | | | | | | |
| Father is foreign born | 0.0715 (0.100) | | | | | | | |
| Both parents foreign | -0.158 (0.149) | 0.0583 (0.0989) | | | | | | |
| Occupation Variables | | | | | | | | |
| Commerce | 0.182 (0.147) | | | | | | | |
| Student | -0.0634 (0.123) | | | | | | | |
| Agriculture | 0.109 (0.172) | | | | | | | |
| Industry | 0.0538 (0.166) | | | | | | | |
| Healthcare | 0.162 (0.146) | | | | | | | |
| Other industry | 0.122 (0.116) | | | | | | | |
| Service industry | 0.101 (0.114) | | | | | | | |
| Education | -0.0898 (0.130) | | | | | | | |
| Unemployed | 0.162 (0.101) | | | | | | | |
| Construction | 0.381* (0.207) | | | | | | | |
| Childhood Socio Economic Class | | | | | | | | |
| Upper class | 0.0410 (0.128) | 0.196 (0.265) | | | | | | |
| Upper middle class | 0.0597 (0.100) | 0.132 (0.195) | | | | | | |
| Middle class | 0.0250 (0.100) | 0.235 (0.199) | | | | | | |
| Lower middle class | 0.104 (0.111) | 0.246 (0.197) | | | | | | |

| | | | | | | | | |
|--|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
| Lower class (Ref) | - | - | | | | | | |
| Source of funds for College Education | | | | | | | | |
| Government Bond | 0.149 (0.130) | | | | | | | |
| Private Bond | 0.114 (0.107) | | | | | | | |
| Non bonded scholarship | 0.0273 (0.103) | | | | | | | |
| Family income | 0.0213 (0.112) | | | | | | | |
| Loan | 0.194* (0.110) | | | | | | | |
| Undergraduate Degree | | | | | | | | |
| Engineering | -0.146 (0.128) | | | -0.168 (0.125) | | | | |
| Social sciences | 0.0173 (0.105) | | | -0.0965 (0.105) | | | | |
| Humanities | -0.103 (0.115) | | | -0.170 (0.121) | | | | |
| Maths & science | -0.115 (0.117) | | | -0.126 (0.112) | | | | |
| Arts | -0.0295 (0.123) | | | -0.321* (0.175) | | | | |
| Inter-disciplinary studies (Ref) | - | | | - | | | | |
| Law | -0.237* (0.133) | | | -0.156 (0.184) | | | | |
| Business | -0.242** (0.121) | | | -0.141 (0.108) | | | | |
| Dummy for no graduate Degree | 0.165* (0.0924) | | | 0.175** (0.0679) | | | | |
| Region of Origin | | | | | | | | |
| Anglo-west Africa | -0.0888 (0.0681) | -0.0110 (0.114) | -0.0367 (0.108) | -0.0258 (0.111) | -0.0361 (0.110) | -0.0314 (0.107) | | |
| South Africa | 0.157 (0.128) | 0.0181 (0.109) | -0.0301 (0.113) | 0.0817 (0.119) | -0.0207 (0.112) | 0.0171 (0.106) | 0.0388 (0.106) | 0.0354 (0.106) |
| Zambia & Zimbabwe | 0.0255 (0.0927) | -0.118 (0.151) | -0.163 (0.152) | -0.0371 (0.158) | -0.129 (0.147) | -0.130 (0.147) | -0.118 (0.150) | -0.112 (0.148) |
| BLMNS | 0.0357 (0.0710) | 0.110 (0.106) | 0.0326 (0.0972) | 0.125 (0.105) | 0.0589 (0.0981) | 0.0788 (0.0965) | 0.0918 (0.0972) | 0.0945 (0.0954) |
| Perception of bribery index | | | -0.0718 (0.0495) | | | | | |
| Perception of nepotism index | | | 0.0406 (0.0534) | | | | | |
| Dummy for not being salary sensitivity | | | | | | 0.196* (0.119) | | |
| Dummy for being Bonded | | | | | | | 0.0444 (0.0760) | |
| Parental education Variables | | | | | | | | |
| Mother at least college educated | | | | | | | | -0.0706 (0.0682) |
| Father at least college educated | | | | | | | | 0.0197 (0.0652) |
| Observations | 173 | 175 | 160 | 173 | 175 | 174 | 175 | 175 |

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

Table 5: Principal Factor Analysis for the creation of index

factor q50 q52 q54 q57 q61 q65 q69, pcf
(obs=181)

Factor analysis/correlation Number of obs = 181
Method: principal-component factors Retained factors = 2
Rotation: (unrotated) Number of params = 13

| Factor | Eigenvalue | Difference | Proportion | Cumulative |
|---------|------------|------------|------------|------------|
| Factor1 | 3.06296 | 1.95835 | 0.4376 | 0.4376 |
| Factor2 | 1.10460 | 0.29283 | 0.1578 | 0.5954 |
| Factor3 | 0.81177 | 0.23850 | 0.1160 | 0.7113 |
| Factor4 | 0.57328 | 0.03849 | 0.0819 | 0.7932 |
| Factor5 | 0.53478 | 0.04270 | 0.0764 | 0.8696 |
| Factor6 | 0.49208 | 0.07156 | 0.0703 | 0.9399 |
| Factor7 | 0.42053 | . | 0.0601 | 1.0000 |

LR test: independent vs. saturated: $\chi^2(21) = 310.73$ Prob> $\chi^2 = 0.0000$

Factor loadings (pattern matrix) and unique variances

| Variable | Factor1 | Factor2 | Uniqueness |
|----------|---------|---------|------------|
| q50 | 0.6425 | 0.5710 | 0.2611 |
| q52 | 0.5750 | 0.6498 | 0.2472 |
| q54 | 0.7509 | 0.0333 | 0.4350 |
| q57 | 0.6426 | -0.2851 | 0.5058 |
| q61 | 0.6749 | -0.4091 | 0.3771 |
| q65 | 0.7458 | -0.2756 | 0.3678 |
| q69 | 0.5753 | -0.1750 | 0.6384 |

. alpha q50 q52 q54 q57 q61 q65 q69 , item

Test scale = mean(unstandardized items)

| | | | | | | |
|-----------|-----------|------|-------------|-------------|------------|--------|
| average | | | | | | |
| item-test | item-rest | | interitem | | | |
| Item | Obs | Sign | correlation | correlation | covariance | alpha |
| q50 | 193 | + | 0.6821 | 0.5291 | 2.035445 | 0.7553 |
| q52 | 192 | + | 0.6355 | 0.4644 | 2.130528 | 0.7697 |

| | | |
|------------|----------|---------------------|
| Test scale | 2.074433 | 0.7848 ⁴ |
|------------|----------|---------------------|

Scoring coefficients (method = regression)

```
. factor q49 q53 q56 q64 q68, pcf
(obs=180)
```

| | | | |
|-------------------------------------|------------------|---|-----|
| Factor analysis/correlation | Number of obs | = | 180 |
| Method: principal-component factors | Retained factors | = | 1 |
| Rotation: (unrotated) | Number of params | = | 5 |

| Factor | Eigenvalue | Difference | Proportion | Cumulative |
|---------|------------|------------|------------|------------|
| Factor1 | 2.26451 | 1.39890 | 0.4529 | 0.4529 |
| Factor2 | 0.86561 | 0.12246 | 0.1731 | 0.6260 |
| Factor3 | 0.74316 | 0.12187 | 0.1486 | 0.7747 |
| Factor4 | 0.62129 | 0.11587 | 0.1243 | 0.8989 |
| Factor5 | 0.50542 | | 0.1011 | 1.0000 |

⁴ Cronbach's alpha is valid because it is greater than 0.65

APPENDIX A : Survey

Migration and Education Survey: CDDRL Senior Thesis

Q1 Where were you born/where did you grow up?

Q2 Do you currently live in the country where you were born/where you grew up?

☐ Yes (1)

☐ No (2)

Q3 if you answered yes to the previous, why did you return to your home country?

☐ Work (1)

☐ Studies (2)

☐ Birth in the family (3)

☐ Death in the family (4)

☐ Change in marital/relationship status (5)

☐ Family reunion (6)

☐ Serving the requirement for bonded scholarship agreement (9)

☐ Other (7)

☐ Not Applicable (if you answered no to the previous question) (8)

Q4 If you don't currently live in your home country, why do you not live there?

☐ Work prospects (1)

☐ Studies (2)

☐ Political climate (3)

☐ Human rights protection (including the lack of protection for LGBTQI people) (4)

☐ Lifestyle (5)

☐ Access to travel opportunities (6)

☐ Romantic relationship (7)

☐ Other (8)

☐ I live in my home country currently (9)

Q5 For how many years after completing your undergraduate education, did you live outside your home country?

☐ 0 (1)

☐ 1-2 (2)

☐ 3-4 (3)

☐ 5-6 (6)

☐ 7-8 (4)

☐ more than 8 (5)

Q6 What is your sex?

☐ Male (1)

☐ Female (2)

☐ Other (3)

Q7 What is your religion?

☐ Catholic (1)

☐ Evangelic (2)

☐ New Apostolic Adventist (3)

☐ Pentecostal (4)

☐ African Independent (5)

☐ Jehovah's witness (6)

☐ Muslim (7)

☐ Other (8)

☐ Non religious (9)

☐ Not Applicable (10)

Q8 How old are you?

Q9 Would you describe yourself as a patriot?

☐ Yes (1)

☐ No (2)

Q10 Do you feel socially and emotionally fulfilled in your current setting?

☐ Yes (1)

☐ No (2)

Q11 Is the society you are currently apart of in line with your value system?

☐ Yes (1)

☐ No (2)

Q12 Would you move to another country due to weather preference?

☐ Yes (1)

☐ No (2)

Q13 Would you move to another country if offered a well paying job?

☐ Yes (1)

☐ No (2)

Q14 Did you complete primary and high school education in your country of birth?

☐ Yes (1)

☐ No (2)

Q15 If not, where did you grow up/complete your pre-tertiary education? (Write NA if you answered yes to the previous question)

Q16 What is your main occupation?

☐ Agriculture (1)

☐ Industry (2)

☐ Construction (3)

☐ Commerce (4)

☐ Transports (5)

☐ Public Administration (6)

☐ Education (7)

☐ Health (8)

☐ Other Services (9)

☐ Housewife (10)

☐ Unemployed (11)

☐ Student (12)

☐ Other (13)

☐ Not Applicable (14)

Q17 How would you classify your work experience?

☐ I have one job only (1)

☐ I have several jobs (2)

☐ I have many unsecured jobs or part time jobs (3)

☐ I am unemployed (4)

☐ I am retired (5)

☐ I am studying (6)

☐ Not Applicable (7)

Q18 Do you have siblings?

☐ Yes (1)

☐ No (2)

Q19 How many siblings do you have? (write 0 if you answered no to the previous question)

Q20 Were you raised by at least one biological parent?

☐ Yes (1)

☐ No (2)

Q21 If not, who raised you? (write NA if you answered Yes to the previous question)

Q22 What does your female guardian do/what did she do when she worked?

☐ Agriculture Industry (1)

☐ Construction (2)

☐ Commerce (3)

☐ Transport (4)

☐ Public Administrators (5)

☐ Education (6)

☐ Health (7)

☐ Other Services (8)

☐ Housewife (9)

☐ Unemployed (10)

☐ Student (11)

☐ Other (12)

☐ Not Applicable (13)

Q23 What does your male guardian do/what did he do when he worked?

☐ Agriculture (1)

☐ Construction (2)

☐ Commerce (3)

☐ Transport (4)

☐ Public Administrators (5)

☐ Education (6)

☐ Health (7)

☐ Other Services (8)

☐ Stay-at-home guardian (9)

☐ Unemployed (10)

☐ Student (11)

☐ Other (12)

☐ Not Applicable (13)

Q24 What was your female guardian's highest level of education?

- ☐ No School (1)
- ☐ Primary School (2)
- ☐ Some High School (3)
- ☐ High School diploma only (4)
- ☐ Some college (5)
- ☐ Two year college (6)
- ☐ Four year college (7)
- ☐ Masters degree (8)
- ☐ PhD (9)

Q25 What was your male guardian's highest level of education?

- ☐ No School (1)
- ☐ Primary School (2)
- ☐ Some High School (3)
- ☐ High School diploma (4)
- ☐ Some college (5)
- ☐ two year college (6)
- ☐ four year college (7)
- ☐ Masters degree (8)
- ☐ PhD (9)

Q26 Was your female guardian born in the same country as you?

- ☐ Yes (1)
- ☐ No (2)

Q27 Was your male guardian born in the same country as you?

- ☐ Yes (1)
- ☐ No (2)

Q28 Did any of your parents/guardians study outside your country of birth/your country of origin?

- ☐ Yes (1)
- ☐ No (2)

Q29 How would you describe the socioeconomic status of your family (in the context of the country where you grew up)?

- ☐ Upper class (1)
- ☐ Upper middle class (2)
- ☐ Middle class (3)
- ☐ Lower middle class (4)
- ☐ Lower class (5)

Q30 Which of the following describes your relationship status

- ☐ Single (1)
- ☐ In a committed relationship (2)
- ☐ Married (3)
- ☐ In a civil union (4)
- ☐ Widowed (5)

Q31 Is your partner from the same country where you were born?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Applicable (3)

Q32 When did you meet your partner?

- ☐ High School at home (1)
- ☐ High School abroad (2)
- ☐ Undergrad at home (3)
- ☐ Undergrad abroad (4)
- ☐ Post grad at home (5)
- ☐ Post grad abroad (6)
- ☐ At work outside of my country of birth (7)
- ☐ At work in my country of birth (8)
- ☐ Not Applicable (9)

Q33 Do you have children?

- ☐ Yes (1)
- ☐ No (2)

Q34 Where are you located currently?

- ☐ Back at my country of birth/the country where I grew up (1)
- ☐ In the country I did my university education (2)
- ☐ In a different country from where I grew up and did my education (3)

Q35 Did you complete your primary school education in your country of birth?

☐ Yes (1)

☐ No (2)

Q36 Did you complete your high school education in your country of birth?

☐ Yes (1)

☐ No (2)

Q37 If you answered no to any of the above, in which country did you complete your pre-tertiary education? (put NA if you answered yes)

Q38 Did you complete your undergraduate education in your home country/country of birth?

☐ Yes (1)

☐ No (2)

Q39 If you answered no to the above question, where did you complete your undergraduate education? (put NA if you answered yes)

Q40 In what university in that country? (put NA if you studied in your home country for your undergraduate education)

Q41 How did you finance your pre-tertiary education outside your country?

☐ Government Scholarship (1)

☐ Bonded scholarship (bursary) from another organisation (partial or full) (2)

☐ Non bonded scholarship from government (partial or full) (3)

☐ Non bonded scholarship from non government agency (partial or full) (4)

☐ Completely from Family income/ Parental support (5)

☐ Loan (6)

☐ Not Applicable (7)

Q42 How did you finance your undergraduate education outside your country?

☐ Government Scholarship (1)

☐ Bonded scholarship (bursary) from another organisation (partial or full) (2)

☐ Non bonded scholarship from government (partial or full) (3)

☐ Non bonded scholarship from non government agency (partial or full) (4)

☐ Completely from family income/ parental support (5)

☐ Loans (6)

☐ Not Applicable (if you completed your undergraduate education in your country) (7)

Q43 What did you study for your undergraduate degree?

- ☐ ☐ Engineering field related courses (1)
- ☐ ☐ Social sciences (2)
- ☐ ☐ Humanities (3)
- ☐ ☐ Science and mathematics (physics, chemistry, biology and math) (4)
- ☐ ☐ Arts (5)
- ☐ ☐ Interdisciplinary studies (6)
- ☐ ☐ Law (7)
- ☐ ☐ Business (8)
- ☐ ☐ Medicine (9)

Q44 Did you complete your graduate education in your country of birth?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)

Q45 If not, where did you complete your graduate degree? (type NA if you answered Yes to the question above)

Q46 In what university in that country? (type NA if you answered Yes to the question above)

Q47 What did you study at graduate school?

- ☐ ☐ Engineering (1)
- ☐ ☐ Social Sciences (2)
- ☐ ☐ Humanities (3)
- ☐ ☐ Science and Mathematics (4)
- ☐ ☐ Arts (5)
- ☐ ☐ Interdisciplinary studies (6)
- ☐ ☐ Law (7)
- ☐ ☐ Business (8)
- ☐ ☐ Medicine (9)
- ☐ ☐ I didn't go to graduate school (10)

Q48 How did you finance your graduate education outside your country?

- ☐ ☐ Government scholarship (1)
- ☐ ☐ Bonded scholarship (bursary) from another organisation (partial or full) (2)
- ☐ ☐ Non bonded scholarship from government (partial or full) (3)
- ☐ ☐ Non bonded scholarship from non government agency (partial or full) (4)
- ☐ ☐ Completely from family income/ parental support (5)
- ☐ ☐ Loans (6)
- ☐ ☐ Not Applicable (if you did not complete a graduate degree) (7)

Q49 In your home country's reality of public health services, what has been the need to know someone who works there?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q50 In your home country's reality of public health services, what has been the need to offer bribes?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q51 In your home country's reality, when passing annual exams in primary and secondary schools what is the need for the student to have quality or merit?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q52 In your home country's reality, when passing annual exams in primary and secondary schools what is the need for offering bribes

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Not much necessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q53 In the reality of your home country, when allocating scholarships for higher education, what is the need to know someone?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q54 In the reality of your home country, when allocating scholarships for higher education, what is the need to offer bribes?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q55 Have you or a member of your family had contact with the court of law?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)

Q56 In the reality of your home country's processes in the courts of law, what has been the need to know someone important?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q57 In the reality of your home country's processes in the courts of law, what has been the need to offer bribes?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q58 Have you and your firm supplied or applied to supply your products or services to entities of the state?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)
- ☐ ☐ Not Applicable (3)

Q59 Have you or your firm received or applied for state subsidy?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)
- ☐ ☐ Not Applicable (3)

Q60 In the reality of your home country, in the choice of state suppliers and/or subsidy recipients, what has been the need for candidates to be competent?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q61 In the reality of your home country, in the choice of state suppliers and/or subsidy recipients, what has been the need to offer bribes?

- ☐ ☐ Not at all necessary (1)
- ☐ ☐ Not necessary a lot (2)
- ☐ ☐ Somewhat unnecessary (3)
- ☐ ☐ More or less necessary (4)
- ☐ ☐ Somewhat necessary (5)
- ☐ ☐ Very necessary (6)
- ☐ ☐ Extremely necessary (7)
- ☐ ☐ Not Applicable (8)

Q62 In the reality of your home country, in the choice of public infrastructure constructions, what has been the importance given by politicians to the needs of the population in general?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q63 Have you or an organisation where you worked tried to obtain from the state, any of type of license for the exercise of your professional activity?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)
- ☐ ☐ Not Applicable (3)

Q64 In the reality of your home country's public service of licensing and registration, what has been the need to know someone?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q65 In the reality of your home country's public service of licensing and registration, what has been the need to bribe someone?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q66 Have you or a member of your household tried to get a job in the state?

- ☐ ☐ Yes (1)
- ☐ ☐ No (2)
- ☐ ☐ Not Applicable (3)

Q67 From people who would like to have a job in the state, how many do you think have been accepted?

- ☐ ☐ Almost no one (1)
- ☐ ☐ Very few (2)
- ☐ ☐ Somewhat few (3)
- ☐ ☐ Some (4)
- ☐ ☐ Somewhat many (5)
- ☐ ☐ Surely many (6)
- ☐ ☐ Almost everyone (7)
- ☐ ☐ Not Applicable (8)

Q68 In the reality of your home country's allocation of jobs in the state, what has been the need to know someone important?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q69 In the reality of your home country, for the voting decisions, what has been the importance of gift/favours offered by politicians?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q70 In the reality of your home country, for the voting decisions, what has been the importance of electoral programs (promises in health, education, justice, etc)?

- ☐ ☐ Not at all important (1)
- ☐ ☐ Very unimportant (2)
- ☐ ☐ Somewhat unimportant (3)
- ☐ ☐ Neither important nor unimportant (4)
- ☐ ☐ Somewhat important (5)
- ☐ ☐ Very important (6)
- ☐ ☐ Extremely important (7)
- ☐ ☐ Not Applicable (8)

Q71 Democracy can make politicians:

- ☐ ☐ More concerned with welfare of the populations (1)
- ☐ ☐ More willing to please voters (2)
- ☐ ☐ Slightly more responsible (3)
- ☐ ☐ More willing to please their friends (4)
- ☐ ☐ More abusive of power (5)
- ☐ ☐ Not Applicable (6)

Q72 "As a common citizen, I think I should have an important role towards controlling the behaviour of the public officials of the country"

- ☐ ☐ Totally disagree (1)
- ☐ ☐ Strongly disagree (2)
- ☐ ☐ Slightly disagree (3)
- ☐ ☐ Neither agree or disagree (4)
- ☐ ☐ Slightly agree (5)
- ☐ ☐ Strongly agree (6)
- ☐ ☐ Totally agree (7)
- ☐ ☐ Not Applicable (8)

Q73 "I believe that the politicians should guide and the population follow"

- ☐ ☐ Totally disagree (1)
- ☐ ☐ Strongly disagree (2)
- ☐ ☐ Slightly disagree (3)
- ☐ ☐ Neither agree nor disagree (4)
- ☐ ☐ Slightly agree (5)
- ☐ ☐ Strongly agree (6)
- ☐ ☐ Totally agree (7)
- ☐ ☐ Not Applicable (8)

Q74 "I believe that the public officials who rule the public services (health centres, schools, courts, police) that are aimed at my needs know better what they should do than I know myself"

- ☐ ☐ Totally disagree (1)
- ☐ ☐ Strongly disagree (2)
- ☐ ☐ Slightly disagree (3)
- ☐ ☐ Neither agree nor disagree (4)
- ☐ ☐ Slightly agree (5)
- ☐ ☐ Strongly agree (6)
- ☐ ☐ Totally agree (7)
- ☐ ☐ Not Applicable (8)

Q75 "I believe I should expect competence in the public services that are aimed at my needs"

- ☐ ☐ Totally disagree (1)
- ☐ ☐ Strongly disagree (2)
- ☐ ☐ Slightly disagree (3)
- ☐ ☐ Neither agree nor disagree (4)
- ☐ ☐ Slightly agree (5)
- ☐ ☐ Strongly agree (6)
- ☐ ☐ Totally agree (7)
- ☐ ☐ Not Applicable (8)

Appendix 2: Qualitative Interview questions

Protocol Director: Tebello Qhotsokoane

Interview questions for the study (London South Africans (to be adjusted accordingly for nationality. Some questions to be omitted)

1. When did you first move to the United Kingdom?
2. Why did you decide to move to begin with?
3. How was the journey here itself? How were you able to make the move?
4. Did you have family left behind when you left? If you did how often do you communicate with them? Do you ever visit them?
5. Tell me about your transition to the life here? How did you come to a place where you felt like you belonged here, if at all? Do you feel like this place has become a home for you?
6. What do you miss most about South Africa?
7. What does being South African mean to you? How has this either changed or remained the same since you came?
8. Do you think of yourself as European now? If not, why do you think you don't?
9. How often do you keep in touch with the things that are happening in South Africa?
10. How do you feel about what you think is happening?
11. Do you ever think of returning? If you do why do you want to return? What do you see yourself doing when you return?
12. Describe the community that you are part of here, and possibly how it differs from the one you left behind?
13. What are two things that you believe to be the biggest challenges facing South Africa today? How do you think they can be solved, and how do you see yourself as being part of the solution to these if at all?
14. What is the greatest thing you think you've lost in your move here, if anything? How does that make you feel?

15. What does Nelson Mandela mean to you, and what feelings did his passing evoke if any?

16. How do you feel about the trend of repatriation of South Africans who emigrated or were exiled? Do you think that it is trend you have personally observed? Why do you think it might be happening?

Interview Questions for the study (Johannesburg South Africans)

1. When did you move back home?

2. Tell me about the decision to return? Why did you make it? How was the movement itself?

3. What is the thing that you find most different about the South Africa you returned to? What did you not expect to feel about the return?

4. Are you glad that you moved back home? What are you most delighted about? What is the most disappointing thing about being back?

5. Tell me a little about your transition back to life at 'home'. What has been the most difficult thing to get used to? How do you feel about the political climate now? Do you feel like you are home?

6. What is your biggest hope for being back? What do you think that the future of South Africa looks like?

7. How has your entire family reacted to the movement back? Do you think that the move meant the same thing to you as it does for your children?

8. How do you think that your national identity meant to you when you were in the UK? Do you think that it means something less when you are back?

9. What feelings have been evoked by your movement back home? What is the most difficult thing you've had to come to terms with since you came? What is the greatest gain from your journey back?

10. What does South Africa mean to you? What are your hopes for your move, and your hopes for the country you have returned to?

11. What does Nelson Mandela mean to you, and what feelings did his passing evoke if any?

12. How do you feel about the trend of repatriation of South Africans who emigrated or were exiled? Do you think that it is trend you have personally observed? Why do you think it might be happening?

Appendix 3: Extension of Literary review

LITERATURE REVIEW: A SHORT HISTORY ON PERSPECTIVES ON BRAIN GAIN

The earliest work on brain drain was work done by Grubel and Scott (1966). In their book *International Flow of Human Capital*, Herbert Grubel and Anthony Scott use neoclassical frameworks to think about the effects of brain gain on source countries. Their major conclusion is that when any worker is drained, they take with them the value of their marginal product of labour, which they earn themselves. From this they conclude that drained workers therefore, do not leave those left behind better or worse off. Bhagwati and Hamada of MIT resisted this claim. In 1974, they published a paper titled *The Brain Drain, International Integration of Markets for Professionals and Unemployment (a theoretical analysis)*, wherein they resist the aforementioned neoclassical framework. Instead, they acknowledge that highly skilled individuals like doctors and academics' social marginal product exceeds their private marginal product of labour, and as a result there is often a loss to those left behind when these individuals migrate. However, Bhagwati did not suggest cracking down on emigration, but rather the installation of migration taxes to reduce the loss in welfare from lost taxes from the skilled migrants. The US and Eritrea remain the two countries who have instituted a tax of this sort today.

The talk of 'brain drain' persisted until Mountford (1997), hypothesized that a benefit not considered in the traditional brain-drain literature is the brain drain-induced "brain gain". Because a brain drain implies that a share of skilled individuals will migrate and earn a higher wage abroad, he posits that brain drain raises the expected return on education, which in turn induces additional investment in education (a brain gain). This may result, he argues, in a beneficial brain drain or net brain gain, that is, a brain gain that is larger than the brain drain; and a net brain gain raises welfare and growth. This brain gain evidence has been expanded and tested using micro evidence and country applications through work like *Testing the 'Brain Gain' Hypothesis: Micro-evidence from Cape Verde* by Batista et al (2010) from CSAE University of Oxford, and various other cross sectional studies that observe qualify brain gain across countries and time, such as those of Beine et al (2007). From this work on the incentive effect, and indeed some of the earlier work done by scholars who argued for that brain drain was detrimental for developing source countries. All these studies suggest that work opportunities, or rather the income incentive, is a huge driver for emigration. This is intuitive of course, since people would make decisions about migration based on the likelihood of getting large pay-offs from the move. I identified one hypothesis for the determinants of emigration.

Remittances have also been the focus of a significant portion of the literature on high skilled migration. Remittances refer to the money and goods that are transmitted to households by migrant workers working outside their source countries. In 2006 official international remittances to developing countries were estimated at \$221 billion per year (World Bank, 2008), making them about twice as large as the level of official aid-related

flows to the developing world. To academics this constitutes a significant brain gain, especially if expatriate earnings are much higher than what highly skilled workers stood to make in their source countries, and if these remitted monies could be used toward long term investments like education and property. Remittances are generally thought to have positive effects, for instance they can contribute to poverty reduction in recipient countries (e.g. Adam 2006; Acosta et al., 2006, respectively for Guatemala and Mexico); they can be spent on consumption, but also invested in education, healthcare and physical assets alleviating liquidity constraints (Cox and Ureta, 2003). Their effect, however, is not clear, since some studies show that some of the positive effects are counter balanced by ambiguous effects. For instance, work by Larrey et al (2012) indicates that remittances lead to a phenomenon similar to the “Dutch Disease”. This strain of the literature, while not explicitly assessing the determinants or drivers for migration, do rely on the assumption that income differentials are big predictors of emigration from developing source countries to developed destination countries. This supports the assumption that economic factors, or income incentives, are the biggest drivers for return migration.

Much less empirically investigated however, are the other positive externalities of brain drain, namely technology diffusion and the foreign direct investment externality. Kerr (2008) for example focuses on patent-citation data in the US community of research and finds that a larger ethnic research community in the US improves technology diffusion to less advanced countries of the same ethnicity. Using patent citation data from Indian investors, Agrawal et al. (2008) show that spatial and social proximity increase the probability of knowledge flows between individuals. Similar to the technology effect, foreign direct investments flows are hypothesized to increase with high skilled migration. This effect arises from the observation that highly skilled migrants may offer market information regarding their source countries, and that these migrants create the trust in a weak international legal environment. Javorcik et al. (2011) study the relationship between the presence of migrants in the US and the US’ FDI in migrants’ source countries, and their study finds positive correlations between FDI to countries and the presence of migrants from those source countries, even after accounting for endogeneity. These mechanisms provide a basis to rethink the negative image cast upon brain drain, but they are relatively understudied and require more rigorous methodology to substantiate.

While the literature on brain drain has been extensive, there is a lot of room for research specifically on the question of the motivators for migration or return migration, especially as these relate to individuals who are educational migrants. The current literature on brain gain fails to offer any meaningful micro evidence on the mechanisms of brain gain (i.e remittance, incentive effect, technological diffusion, and FDI externality), especially in countries in Sub-Saharan Africa where the outcomes of these theories may not be observed on the ground. Countries like Lesotho, Swaziland, South Africa and others have experienced highly skilled emigration without the positive externalities associated with such movements, and yet some of these countries continue to invest in migrant education programs. In these micro-cases, it would be important to look at alternative methods of brain gain, specifically ones geared towards the provision of incentives for physical return migration of highly skilled labour force in which governments invest. It is with this gap in the literature that this thesis is concerned.

Specifically, I am interested in finding out not just that migration happens, or that it has some effect on economies both of source countries and destination countries, but why some migrants, upon getting an education abroad, return to their source countries, and why others choose to pursue work and education opportunities elsewhere. Understanding these motivators for migration could reveal possible policy incentives that governments can introduce to increase levels of retention or return migration of those who have already migrated. It could also provide insights into possible incentives that can be used in tandem with bonded scholarships to increase the likelihood of retention in countries where there is not enough state capacity to ensure that contracts are upheld.

The earliest scholar on the incentive effect was Mountford (1997), who hypothesized that a benefit not considered in the traditional brain-drain literature is the brain drain-induced “brain gain”. Because a brain drain implies that a share of skilled individuals will migrate and earn a higher wage abroad, he posits that brain drain raises the expected return on education, which in turn induces additional investment in education (a brain gain). This may result, he argues, in a beneficial brain drain or net brain gain, that is, a brain gain that is larger than the brain drain; and a net brain gain raises welfare and growth. This brain gain evidence has been expanded and tested using micro evidence and country applications through work like *Testing the ‘Brain Gain’ Hypothesis: Micro-evidence from Cape Verde*” by Batista et al (2010) from CSAE University of Oxford, and various other cross sectional studies that observe qualify brain gain across countries and time, such as those of Beine et al (2007). From this work on the incentive effect, and indeed some of the earlier work done by scholars who argued for that brain drain was detrimental for developing source countries. All these studies suggest that work opportunities, or rather the income incentive, is a huge driver for emigration. This is intuitive of course, since people would make decisions about migration based on the likelihood of getting large pay-offs from the move. I identified one hypothesis for the determinants of emigration.

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