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Foreign aid, human capital accumulation and the potential implications for growth

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Abstract

Previous research has explored various channels in the aid-growth relationship such as the real exchange rate, changes in manufacturing output, institutional capacity, and governance. This paper puts forward a new mechanism: human capital accumulation. International organizations financially support and/or directly collaborate with educational institutions to establish courses. The development sector, borne out of aid, demands skilled workers. The workforce in turn develops human capital to meet this demand. There is a consequent change in the skills composition in the host country, and thus the types of skills available to employers in the labor market. This may have implications for long-run growth. These mechanisms are explored through mixed-methods analysis of human capital accumulation at the tertiary level in Sierra Leone, a small low-income, aid-dependent country. The data show that post-war interventions have given rise to courses that develop skills that are demanded by local and international non-governmental organizations, but not the formal private sector. This shift toward development-type qualifications has led to excess supply of these graduates, alongside a shortage of graduates with training in science, technology, engineering, and mathematics. The latter are highly demanded by the private sector.

JEL Codes: F35 J24 O19

Keywords: Foreign aid, human capital, skills, economic growth, Sierra Leone

1. Introduction

Foreign aid has become ubiquitous in many developing countries, especially the least developed countries. The reasons for such flows are multifaceted and range from foreign policy objectives and commercial interests, to moral imperatives and colonial legacies (Radelet 2006; Heckelman and Knack 2009). Irrespective of the motives, foreign aid has become influential in several aspects of the economy and society of recipient countries. This paper is concerned with the effects of aid on human capital accumulation, and how this in turn has implications for economic growth.

Debates in the economics literature have attempted to quantify aid effects. Aid sceptics highlight that the aid-growth relationship has not materialized, which signals a quintessential failure of aid to deliver on a core objective (Easterly 2002). Others have argued that donors have contributed to the proliferation of market-oriented reforms which are favorable to growth (Heckelman and Knack 2009). A recent meta-analysis of aid effectiveness posits that assessments

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of the effects of aid on growth are ambiguous pre-2007, but after this period, there has been convergence toward a positive assessment of the aid-growth relationship (Mekasha and Tarp 2019).

Several channels have been identified as mechanisms in the aid-growth relationship. Hussain et al. (2009) and Rajan and Subramanian (2011) look at the real exchange rate and the manufacturing sector. With this channel, aid leads to an overvaluation of the real exchange rate, which adversely affects the competitiveness of export-oriented industries (like manufacturing). Others have assessed the effects of aid on governance and institutional capacity (Bourguignon and Sundberg 2007; Bräutigam and Knack 2004; Knack 1999; Rajan and Subramanian 2007), acknowledging that continued aid can help, but also potentially weaken institutional capacity. Recent evidence shows that some technical assistance initiatives circumvent established government institutions, thus limiting their reform capacity (Yanguas and Bukenya 2016). Others have argued that sudden cutbacks and donor preference for international non-governmental organizations have weakened the capacity of civil society organizations (Kanyako 2016). A third likely channel stems from moral hazard issues (Radelet 2006). For instance, continued aid to a country may limit government efforts to generate tax revenue. The government may also spend less on “donor priorities” such as health and education, unless incentivized to make counterpart commitments. On the other hand, donor-spending in these areas have been beneficial to non-monetary development outcomes. In the development studies discourse, it has been argued that aid can target either the incumbent government or challenger, thereby giving legitimacy to a particular group and affecting political settlements (Yanguas 2017). Large flows to governments may also encourage rent-seeking behavior among political elites who compete for power and access to these funds (see Radelet (2006) for an overview).

This article contributes to the literature on foreign aid and growth, by conceptualizing a new channel: human capital accumulation and the consequent changes in the skills composition. This area of enquiry has received little attention in the literature to date. International organizations fund, support and/or implement training programs and promote policies which impact on human capital development in host countries. This in turn influences the types of skills available to employers in the labor market. Depending on how the skills composition changes, this can be either helpful or harmful to long-run growth.

To further explore these issues, this article focuses on human capital development at the tertiary level that has been influenced by the ongoing presence of a development sector. Throughout the paper, the development sector is defined as the externally funded segment of the economy working toward developmental priorities. The development sector comprises non-governmental organizations (NGOs), international NGOs (INGOs), and bilateral and multilateral donors. The study uses a mixed-methods approach and draws on both quantitative and qualitative data from Sierra Leone - a small low-income, aid-dependent West African country. Secondary quantitative data on tertiary-level skills across countries is limited, and as such the study uses primary and secondary data collected from fieldwork in Sierra Leone to explore the issues at hand.

The paper focuses on tertiary-level education for three reasons. First, the pedagogical content of primary and secondary education in Sierra Leone is largely governed by the West African Examinations Council and is less likely to be influenced by development partners in the country. Second, previous studies have already assessed vocational training policies in West Africa – see for example Matsumoto (2018) and Palmer (2009). And third, development sector organizations mainly hire those with tertiary-level training. Thus, focusing on the tertiary level allows the effects from development organizations demanding certain types of human capital to be assessed.

The paper makes both an empirical and theoretical contribution to the literature. Empirically, new analysis on the role of international organizations in human capital accumulation in post-war Sierra Leone is assessed. Based on the empirical findings, a new channel in the aid-growth relationship is proposed.

The data show that interventions at the tertiary level in post-war Sierra Leone have given rise to courses such as Development Management, Conflict Analysis and Conflict Resolution, Mass Communication, Peace and Conflict Studies, and Social Work (among others). These courses develop skills that are demanded by local and international NGOs, but not the formal private sector. This shift toward development-type qualifications has led to excess supply of these graduates, alongside a shortage of graduates with training in science, technology, engineering, and mathematics (STEM). STEM graduates are highly demanded by the private sector. Such a shortage affects the private sector's ability to expand output and has potential implications for economic growth.

The rest of the paper is structured as follows. Section two reviews the literature on donor policies related to skills development in developing countries. Section three presents the case study, followed by the data collection and analytical methods in section four. Section five analyzes tertiary-level human capital accumulation in Sierra Leone. Section six discusses the role of the development sector in human capital accumulation, followed by the implications for growth in section seven. Section eight concludes.

2. Skills development as a directed donor policy in developing countries

From the 1950s up to the late 1980s, skills development was integral to development cooperation and the promotion of modernization and economic development in newly independent countries (McGrath 2002). Filling the skills gap, was seen as a complement to addressing the capital gap (Browne 2006). Similar to other forms of foreign aid at that time, skills training and technical assistance were influenced by ideological disputes linked to the Cold War (Browne 2006).

The types of skills targeted were broad, capturing many levels and sectors from artisanal to semi-professional and professional areas (McGrath 2002). With respect to the latter, higher education institutions were highlighted as pivotal for capacity development of the contemporary labor force, and for cultivating local capacity to train the future workforce (Buchert and King 1995). Thirty-four percent of all education aid to Africa went to higher education between 1981-1983, in an effort to build centers of excellence in Dakar, Ghana-Legon, Ibadan and Makerere (Saint 1992, 113).

From the late 1980s into the 1990s, with structural adjustment at work in much of the developing world, and increasing concerns for the needs of the poorest, focus shifted to basic education (Saint 1992). Spending on technical and vocational education and training (TVET) was one of the biggest casualties during this period. Though interest in higher education also dwindled, the African Virtual University (AVU) was nonetheless set up by the World Bank in 1997 as a Pan-African university, with financial support from Canada, the UK and Australia (Bloom et al. 2014). It has trained 74,073 students since inception, and now exists as an international NGO under a charter agreed by several African countries.²

² See the AVU website for more details: <https://avu.org/avuwweb/en/>

The mid-2000s saw a renewed interest in tertiary education at the policy level. A 2005 Commission for Africa report recommended that donors increase spending on tertiary education in Africa, particularly in areas of science and technology. In 2008 and 2010, the World Bank emphasized their interest in tertiary education with two key publications: ‘Accelerating Catch-Up: Tertiary Education for Growth in Sub-Saharan Africa’ and ‘Financing Higher Education in Africa’ (Bloom et al. 2014). Between 2009 and 2018, developed countries spent US\$126 billion (in 2017 prices) on education-related activities in developing countries (OECD 2020). Of this, an estimated 16.3 percent was spent on higher education interventions.

Scholarship assessing the effects of foreign involvement in higher education broadly fits into a critical discourse focusing on the neo-imperial effects of aid policy. Saint (1992) argues that support has been biased toward university departments favored by some donors, and failed to focus on institutional needs like libraries, staff development, planning and strategy. Policies and interventions have also been supply-driven (by donors) rather than being based on local demands and realities (Browne 2006). Others have found that not only was aid misaligned with local needs but bordered on being harmful. According to Samoff and Carrol (2004, 68), *“by framing, organizing, and orienting the academic enterprise and thus ways of knowing and validating knowledge, partnerships threaten to reintroduce, in both explicit and subtle ways, the external direction of the earlier era.”* Similar conclusions were made by Banya and Elu (2001) and Brock-Utne (2003) who analyze World Bank policies on higher education in Africa.

The literature thus far has provided little evidence on how specific development policies/interventions have affected human capital accumulation and the skills composition. This is an important question as previous studies have shown that higher education is associated with growth, and importantly, training in specific disciplines (engineering and natural sciences) are more consequential to growth than other areas (Lin 2004). The changes in the skills composition thus has potential growth implications.

3. Sierra Leone as a case study

Sierra Leone has a population of 7.5 million, GDP per capita of US\$500 and a Human Development Index (HDI) ranking of 181 out of 189 countries (UNDP 2019; World Bank 2020). Like many countries in Sub-Saharan Africa, Sierra Leone is resource-rich but economically poor, has experienced conflict in its post-independence history (between 1991 and 2002), has a young population and is largely agrarian in economic structure. The formal private sector is relatively small, mainly operates in services, and accounts for about 17 percent of formal employment (Statistics Sierra Leone (SSL) 2015). Specific to the present research, Sierra Leone is an appropriate case study given the size of aid flows and the influence of international organizations in several parts of the economy and policy space. It is one of an estimated 25 aid-dependent least developed countries (UNCTAD 2019, 19).

The aid sector and development organizations have been a permanent feature in post-independence Sierra Leone. The sector expanded significantly in the past two decades after the civil war ended in January 2002. As an example of share size, Official Development Assistance was an estimated 130 percent of government spending and 25 percent of Gross National Income in 2014 (World Bank 2020). In the immediate post-war years, assistance was targeted at infrastructure projects, government ministries, the justice sector, and social services (Kanyako 2016). Kanyako (2016) argues that the government was unable to absorb such large inflows, which led to the development of the NGO sector. Estimates suggest that in the four years following the war, 26 percent of total support to the country was channeled

through NGOs (Kanyako 2016, 27). The development sector was thus instrumental in post-war rebuilding and recovery.

NGOs remain important actors in the economic, political and social landscape of Sierra Leone. They are now commonplace in both rural and urban areas and have become instrumental to delivery of services such as health, sanitation and vocational training. The most recent publicly available NGO-specific data from SSL indicate that 96 international NGOs and 231 national NGOs were operating in Sierra Leone in 2013 (SSL 2014, 8). Based on SSL's classifications, their activities span agriculture (nine percent), communications (one percent), microfinance (nine percent), governance and public administration (seven percent), legal and social services (10 percent), education (19 percent), health (42 percent), water (one percent) and construction (two percent). Of the registered NGOs, 63 percent registered in the post-war years between 2002-2013 (SSL 2014, 14).

Importantly, NGOs are also employers that demand skills and hire workers. The NGO sector employed an estimated 15,482 workers, of which 13,535 were local staff - 8,125 males and 5,410 females (SSL 2014, 16). When donor organizations are also included, 18,596 Sierra Leoneans were employed in the development sector according to the 2014 labor force survey – approximately 10 percent of formal employment (SSL 2015).

4. Data collection and analytical methods

Data for this study were collected during fieldwork in Sierra Leone between August and December 2017, and again in August 2018. Three main qualitative data sources are utilized: interviews, focus group discussions, and donor and government reports.

Forty-six interviews were conducted with staff in the public, private and development sectors. Interviews spanned 39 organizations – five from the public sector, 15 from the formal private sector, 14 development sector organizations and five categorized as other (representing universities, workers unions and employer groups). Interviews averaged one hour, were semi-structured and tailored to the organization. On many occasions, a follow-up interview with the same respondent was conducted; or a second or third person interviewed from the same organization in order to record multiple perspectives. Interviewees were contacted using a mix of snowball sampling and “cold calling” from a list of companies provided by the Ministry of Trade and Industry. A deliberate effort was made to capture a wide selection of organizations. For instance, at least one private company from each of the main economic sectors, a range of local NGOs, INGOs and donor organizations, and both central government and line ministries were interviewed. Appendix 1 provides an anonymized list of interviewees.

Twenty-nine university finalists who were about to enter the labor market were randomly selected based on their participation in a previous survey by the author.³ In addition to this, 24 graduates were randomly contacted based on previous links with the National Youth Commission (NAYCOM). NAYCOM offers entrepreneurship/business support services and runs a national internship program. A list of 318 youths who had interacted with NAYCOM formed the sampling frame from which 24 were selected. This subset of 24 had between one- and ten-years' labor market experience. Both employed and unemployed participants were included. Eleven focus group discussions with these 53 respondents were conducted. Discussions centered on student experiences, skills, search experiences, desired

³ The survey sought to explore occupational choice of graduates about to enter the labor market. 392 students were selected (out of final year cohort of 1000) using stratified random sampling. Harris (2019) describes the survey and results.

employment and challenges faced in the labor market. Appendix 2 provides an anonymized list of focus group participants. As suggested in methodological papers such as Guest et al. (2006), recruitment of research participants for qualitative interviews and focus group discussions ceased when saturation was achieved and there was little variation in additional data collected.

Most textual data used in the analysis were acquired either during an interview or sourced online after being mentioned in an interview. This was complemented by targeted searches of websites of the main development partners and key government ministries.

In addition to qualitative data, quantitative data on graduates by degree type were collected from the University of Sierra Leone (USL) and the Tertiary Education Commission. The USL is the largest and oldest university in the country. It accounts for approximately 60 percent of university enrollment and 30 percent of all tertiary enrollment when non-degree awarding institutions are included (World Bank 2013, 11-12). It is also the only university to offer courses across all disciplines. This includes Arts and Humanities, Education, Health, Law, Social Sciences, and Science, Technology, Engineering and Mathematics (STEM). Each year the USL publishes a list of all graduates by qualification type. These reports were collected for the years 1985 to 2017, and the data extracted and coded. The USL data were triangulated with national data from the Tertiary Education Commission. The latter was only available for the 2012-2016 period. And finally, data from the OECD World Indicators of Skills for Employment dataset (2003-2013) and the UNESCO Institute for Statistics database (2014-2017) have been used to compare the case study to global experiences.

Analytically, a mixed-methods approach has been applied to the data to explore the role of the development sector in human capital accumulation in post-war Sierra Leone. Qualitative data were primarily analyzed using thematic analysis, where common themes, topics, and ideas have been extracted and coded. In addition, documents have been read with and against the grain to consider included content, and importantly what has been excluded from the text. Texts have been interpreted within the wider economic and policy context. Anonymized quotes are presented throughout to give voice to the respondents and substantiate arguments made. And finally, basic descriptive statistics are used to convey key stylized facts emerging from the quantitative data. From the qualitative and descriptive evidence, a new framework for assessing the impact of the development sector is proposed using methods of grounded theory.⁴ This is then linked to economic growth in a theoretical discussion framed around endogenous growth models.

The data sources and subsequent analysis are limited to the highest skilled – university level. This is not to discount the role of the development sector in areas like TVET, nor the importance of these skills in the development process. Instead, the intention is to shed light on skills development at the tertiary level as a potential channel in the aid-growth debate.

5. Data analysis and main findings

There are two main findings that emerge from the quantitative and qualitative data: (i) there has been an increase in the number of graduates obtaining qualifications that are more marketable in the development sector – these are termed

⁴ See chapter 4 of Gibbs (2007) for a discussion on thematic analysis and grounded theory.

“NGO courses” throughout the rest of the paper, and (ii) though the number of graduates has been increasing, employers in the private sector continue to report skills shortage.

5.1. The rise of “NGO courses” in post-war Sierra Leone

The demand for tertiary education increased significantly in the first post-war decade, with enrollment more than trebling from 8,900 in 2001 to 31,100 in 2011 (World Bank 2013, 12). In addition to this, the number of courses on offer increased at the main university, the USL (Table 1). Table 1 collates data from graduation booklets from the USL. Records date back to 1985 but are incomplete during the 1991-2001 civil war. Table 1 therefore shows ‘new courses’ by qualification type. ‘New courses’ are defined here as courses where the first cohort of graduates were recorded after 2001 and said course did not exist before the war began in 1991. A course is deemed to be ‘discontinued’ (marked by an asterisks) if there are no graduating cohorts for at least three years.

At the degree level, courses in Accounting and Finance/Applied Accounting are reincarnations of pre-war courses and are therefore not new courses as such. New courses were created in engineering (for example Mining Engineering) and management-related ones in the Social Sciences (for example Mines Management, Business Administration, and other business-related courses). These courses were oftentimes created in consultation with the private sector.⁵

A second group of new courses include Gender Studies, Development Management, Governance and Leadership, Conflict Analysis and Conflict Resolution, Mass Communication, Peace and Conflict Studies, Adult Education and Community Development, Social Work, and Population and Development Studies. These were commonly referred to as “NGO courses” by both employers and graduates as such courses are perceived to be developing skills for the development sector.⁶ According to one graduate: *“I did Peace and Conflict Studies. They consider us an NGO course. So, it’s difficult to get funding. We don’t get government sponsorship because they think we will go to the NGOs.”*⁷ Recruitment companies interviewed also reported that students with these qualifications were more difficult to place as private sector companies viewed them as having unsuitable skills.⁸ This was corroborated by private sector staff interviewed.⁹ NGO courses were often created in collaboration with development sector organizations.¹⁰

The number of graduates with a bachelor’s degree steadily increased in the post-war period. Alongside this, the number graduates with a degree in an “NGO course” progressively increased, and the share more than doubled from 5.7 percent in 2006 to 12.3 percent in 2017 (Fig. 1a). NGO courses are popular among both males and females, and a test of association between gender and taking an NGO course is not significant at conventional levels. The Peace and Conflict Studies degree is one of the main contributors toward the increasing numbers and share of graduates from an NGO course. This was also the degree program most cited by research participants as an example of a course designed for employment in the development sector.

⁵ Interview 22 (September 22, 2017); Interview 41 (November 21, 2017)

⁶ See online appendix for data extracts from interviews and focus group discussions.

⁷ Participant 21, Focus Group 5 (October 21, 2017)

⁸ Interview 31 (October 2, 2017); Interview 34 (October 5, 2017)

⁹ Interview 20 (September 20, 2017); Interview 28 (September 29, 2017); Interview 40 (October 13, 2017); Interview 42 (November 23, 2017)

¹⁰ Interview 22 (September 22, 2017); Interview 41 (November 21, 2017)

Table 1: Courses for which the first cohort of graduates were recorded since 1985 by the USL^a

Year	Masters	Postgraduate Diploma/Certificate	Bachelors	Diploma	Certificate
2002	Accounting and Finance (185)				
2003			Applied Accounting (1382)		
2006	Education Administration (7) Gender Studies (105)	Mass Communications (25)*	Mass Communications (557) Business Administration (1803) Biological Science (39)	Business Administration (450)***** Information Systems (140)***** Financial Services (396)*	Cultural Studies (51)* Local Governance Studies (11)* Peace and Conflict Studies (130) Population Studies and Social Statistics (466) Social Development (25)*** Stores Management (48)***
2007	Population Studies (7) Sociology (6)		Library Archive and Information Systems (253) Marine Science (84)		Community Medicine and Health (Tropical) (65)*****
2008	Development Management (202)	Procurement (101)	Sociology (58)	Local Government (4)* Mass Communication (273) Medical Laboratory Services (88) Public Sector Management (84)***	
2009	Governance and Leadership (73) Mass Communication (32)			Youth in Development Work (20)*	
2010			Public Sector Management (243) Peace and Conflict Studies (860)		
2011	Marine Science (4)	Mines Management (29)		Nursing Education (32)	Early Childhood Care and Education (8)*
2012	Statistics (8)			Early Childhood Care (121)	Mental Health (19)**
2013			Adult Education and Community Development (54)	Mathematics and Statistics (34) Mental Health (10)*	English (13)* Trade Union (1)*
2014	Pharmacy (7)	Statistics (2)			
2015	Diplomacy and International Relations (14) Energy Studies (2)		Mining Engineering (54) Social Work (246)		
2016	Conflict Analysis and Conflict Resolution (1)		Population and Development (20)		
2017					Mass Communication (2)

^a Figures in brackets give the total number of graduates since the first cohort graduated up to 2017. The number of asterisks (*) indicate the number of cohorts that graduated before the course was discontinued. For the analysis, a course is deemed to be 'discontinued' if there are no graduating cohorts for at least three years. For example, from column six of the table, 51 students graduated with a Certificate in Cultural Studies in 2006, but there was only one cohort as no other graduates were reported since 2006. Absence of an asterisks indicates that the course was still in existence at the time of data collection in 2018.

Source: University of Sierra Leone graduation data, 2018.

In 2010, the first cohort of 124 Peace and Conflict Studies students graduated. This was an initial shock and the share of graduates with an NGO course increased significantly in that year (Fig. 1a). Since 2010, 860 have graduated with a bachelor's degree in this course. The annual average over the eight-year period (2010-2017) is 108, the highest average for a single degree program. Other NGO courses that have had a noticeable effect on the skills composition of graduates entering the labor market are Mass Communications (557 graduates since 2006 and yearly average of 47) and Social Work (246 graduates since 2015 and yearly average of 82).

The trend in NGO courses is also present at the certificate level as certificates are often used to gain entry to degree programs. The only two certificate courses offered by the University of Sierra Leone that survived since their introduction in 2006 are courses in Peace and Conflict Studies, and Population Studies and Social Statistics. The former is often used to progress to the diploma and/or degree in Peace and Conflict Studies. The latter is a common qualification among enumerators working in the development, private and public sectors.¹¹

At the postgraduate level, the number of graduates and those graduating with degrees in NGO courses fluctuated over the 2006-2017 period (Fig. 1b). The two main NGO courses at the postgraduate level are Gender Studies (105 graduates between 2006-2017) and Development Management (202 graduates between 2008-2017). Though the introduction of these (and other NGO courses) increased the numbers graduating with degrees in NGO courses at the postgraduate level, the period also saw an increase in postgraduates with other qualifications. Still, the share with an NGO course increased from 18 percent to 26 percent between 2006-2017. Though this share is larger compared to the statistics for bachelors, total graduates from postgraduate courses are a mere 12.5 percent of undergraduates over the period.

Fig. 1: Share of USL graduates with an undergraduate degree (a) and postgraduate qualification (b) in an 'NGO course'

Data source: University of Sierra Leone graduation data, 2018.

The rise of NGO courses since 2010 has been accompanied by little growth in the number of STEM graduates over the period, and a decline in the share (Fig. 2). In comparison to the five-year average just after the war, the current

¹¹ Anecdotal evidence suggests that most enumeration work is funded by development partners, even if conducted by the public or private sector.

average share is 6.3 percentage points lower, and 2.7 percentage points lower when compared to pre-war shares (1985-1989). In absolute terms, the five-year average at USL increased during the 2000-2015 period but has remained constant over the past three years. According to staff, USL enrollment remains below capacity for several Engineering and Pure and Applied Sciences degrees.¹² At the national level, the absolute number of STEM graduates has fluctuated over the 2012-2016 period, and the share has declined from 12.3 percent in 2012 to 9.1 percent in 2016 (Fig. 3). The decline in Sierra Leone does not conform to the global trend where the share of STEM graduates has remained around 22 percent since 2013 (UNESCO 2020).

Fig. 2: Five-year average share of STEM graduates 1985-1989 and 2000-2017⁺

⁺The data for the period of the civil war are incomplete.
Data source: University of Sierra Leone graduation, 2018.

Fig. 3: Graduates by national development categories⁺

⁺ The six categories are government defined. NGO courses are included in the category “Administrative, Information and Social Services.” National data were only available for the five-year period 2012-2016.
Data source: Tertiary Education Commission

¹² Interview 41 (November 21, 2017)

5.2. Skills shortages alongside an expanding skilled workforce

As shown, there is an increasing number of graduates entering the labor market, and an increasing share with NGO courses. However, many employers reported that qualifications in NGO courses were less desirable,¹³ and these graduates find it more difficult to obtain employment outside the NGO sector.¹⁴ Of the focus group participants that were active in the labor market, those with NGO courses were more likely to be unemployed (Appendix 2). Private sector employers expressed preferences for “*T-shaped individuals*,” who have a breadth of general knowledge and transferable skills (such as analytical skills, communication skills, team working, etc.), while simultaneously having deep technical expertise.¹⁵ From interviews, most graduates are seen to lack many of the soft skills (across all degree types), but NGO courses in particular are viewed as lacking technical skills.

It is therefore unsurprising that the tertiary-educated workforce has been increasing in Sierra Leone, but employers continue to report skills shortages. The African Development Bank (AfDB) conducted a skills gap analysis in 2012 and found that there was insufficient supply of skills to meet demand by employers across all economic sectors. This was particularly acute for technical skills, with a gap of at least 50 percent of reported employment (Table 2). A more recent study by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) does not quantify unmet demand in terms of personnel numbers but highlights similar unmet demands for technical and soft skills (Darwich 2018).

Similar to previous studies by the AfDB and GIZ, the majority of private sector employers interviewed for the present study cited insufficient access to the right types of skills and issues with the quality of skills available as constraints to their production processes.¹⁶ Quality issues were usually overcome by internal training programs, but insufficient graduates with technical skills remain an issue.

Table 2: Estimated skills gap by sector

Sector	Positions demanded but unfilled due to lack of skilled personnel (share of reported employment in brackets)		
	Managerial	Professional	Technical
Agriculture	356 (39.3%)	325 (31.4%)	2491 (52.1%)
Mining	589 (77.5%)	795 (67.7%)	3704 (59.2%)
Tourism	289 (49.9%)	412 (30.8%)	683 (50.8%)
Banking	No reported shortages based on interviews conducted by AfDB		

Source: Author calculations using data from Mannah and Gibril (2012, 26-30)

¹³ Interview 20 (September 20, 2017); Interview 28 (September 29, 2017); Interview 31 (October 2, 2017); Interview 34 (October 5, 2017) Interview 40 (October 13, 2017); Interview 42 (November 23, 2017)

¹⁴ Participant 6, Group 2 (October 10, 2017); Participant 26, Group 6 (October 12, 2017); Participant 41, Group 9 (November 28, 2017)

¹⁵ Interview 34, (October 5, 2017)

¹⁶ Other factors cited include import liberalization policies which resulted in lower demand for some locally produced goods, macroeconomic uncertainties from government policies, and high electricity costs.

6. Emerging hypotheses: the development sector's role in observed changes in human capital accumulation in Sierra Leone

The quantitative evidence on the increasing numbers and share of graduates entering the labor market with training in NGO courses is likely indicative of the strong presence of the development sector in Sierra Leone. Based on the qualitative data, there are two explanations that likely drive this trend (i) direct influence of development partners through interventions, and (ii) indirect influence from the development sector's role as an employer of skilled workers.

6.1. University courses and the development sector – a direct driver in human capital training

Shortly after the war ended in 2002, the Department of Peace Studies at the University of Bradford (UK) worked with Fourah Bay College, University of Sierra Leone, to establish the Centre for Peace and Conflict Studies (Africa Centre 2004). This was achieved with financial assistance from the Department for International Development (DFID) through the British Council in Sierra Leone. The main objective was for the University of Bradford to assist the USL with curriculum and staff development, and to develop a viable long-term strategy for peace. Various United Nations organizations and civil society groups were also involved in the process (Africa Centre 2004).

The Africa Centre (2004) chronicles curriculum contents, strategies for implementation and the importance of the course in the peace process, but is silent on the employability prospects of graduates with training in Peace and Conflict Studies and the effects on the skills available in the economy more generally. The University of Bradford also conducted curriculum development and review workshops with other tertiary institutions such as Njala University (for a Diploma and MA degrees in Peace and Development Studies) and Milton Margai College (for a Diploma and BA degrees in Peace Education) (Omeje 2015, 42). Outside of Peace and Conflict Studies qualifications, there was active collaboration to strengthen existing degree courses like Political Science, Sociology, and History to include stand-alone peace related modules (Omeje 2015, 43).¹⁷ Other examples of interventions by development partners noted by university staff include the MSc. in Public Policy, which was sponsored by the Partnership for African Social and Governance Research (PASGR), and the resource center at Fourah Bay College which was established with the support of the International Growth Centre.¹⁸

It is believed that without donor/development partner assistance, these courses may not have existed given the resource constraints of the University.¹⁹ Hence, it can be argued that without these interventions, the number of graduates in total and those with NGO courses would be fewer, and all else constant, the share of graduates with NGO courses would be lower. These direct interventions are initial shocks which begin to change the skills composition of the tertiary-educated workforce. The effects are then reinforced as the development sector demands these NGO courses.²⁰

¹⁷ Examples of these modules include (Omeje 2015, 43): "The Sociology of Peace & Conflict in International Relations," "The African Practices and Mechanisms of Conflict Management," "Methods of Conflict Analysis," "Peace and Security Issues in Africa," "Leadership and the Culture of Peace," "Conflict Prevention, Peacekeeping, and Peace Consolidation," "Humanitarian Interventions and Conflicts in Africa," and "Conflict Resolution and Development: Applied Skills."

¹⁸ Interview 22 (September 22, 2017); Interview 41 (November 21, 2017)

¹⁹ Interview 22 (September 22, 2017); Interview 41 (November 21, 2017)

²⁰ There are likely other factors that reinforce the upward trend in NGO courses after the initial development intervention. It was reported that some NGO courses (such as Sociology) have lower entry requirements, and that Arts/Social Science degrees are cheaper to run relative to STEM courses which require laboratory equipment. That said, there is still spare capacity for some STEM courses (Interview 41, November 21, 2017). Thus it is possible that if some NGO courses had not been introduced through development cooperation, some students studying NGO degrees may have taken a vocational path or re-done subjects to be accepted to more economically valuable STEM degrees that are below capacity.

6.2. The development sector as employer – an indirect driver in human capital accumulation

Given the size and proliferation of the development sector as discussed in section three, it is expected that human capital accumulation decisions are made around the existence of the sector. Van Wijnbergen (1986, 5-7) postulated that one implication of large aid inflows would be a reallocation of labor away from rural agriculture to urban services in the African context. What is observed in Sierra Leone is not simply a movement of the current labor force from other sectors to the development sector, but a systematic phenomenon where the future labor force develops skills and is trained for employment in the development sector. Development sector organizations interviewed reported a high demand for the NGO courses named above, as well as some non-NGO courses such as Accounting and Finance, Economics, Procurement, Project Management, and Monitoring and Evaluation.²¹ The labor force then acquires these qualifications for employment.

The development sector as a preferred option among those enrolled in NGO courses

Of the 53 focus group participants, 22 (41.5 percent) reported aspirations to work in the development sector.²² This is similar to previous experimental results which show that 44 percent of Sierra Leonean graduates opt for development sector employment (Harris 2019, 14). Of the 15 participants enrolled in NGO courses, 12 (80 percent) wished to work in the development sector. In contrast, 10 of the 38 participants in non-NGO courses opted for the development sector (26.3 percent). There is therefore a stronger preference for development sector employment by those enrolled in NGO courses. The null hypothesis of no association is rejected using a Fisher's exact test (Table 3). If course enrollment and career choice were independent, six students of NGO courses would be expected to select the NGO/development sector for employment. Instead, the observed number is 12.

Table 3: Sector choice versus course of study^a

	Development Sector	Private Sector	Public Sector	Total
NGO course	12 (6.2)	0 (4.8)	3 (4)	15
Other course	10 (15.8)	17 (12.2)	11 (10)	38
Total	22	17	14	53
Pearson Chi2(2) = 14.5035 Pr = 0.001				
Fisher's exact = Pr = 0.000				

^a Expected values based on relative frequencies are shown in parentheses, and are calculated as: $\frac{(\text{row total} \times \text{column total})}{\text{total observations}}$

Source: Author-collected focus group data

²¹ Interview 15 (September 13, 2017); Interview 16 (September 13, 2017); Interview 22 (September 22, 2017); Interview 23 (September 22, 2017); Interview 25 (September 26, 2017); Interview 26 (September 26, 2017); Interview 31 (October 2, 2017)

²² Appendix 2 provides the raw data.

Mechanisms driving the demand for development sector employment

The data show two mechanisms that drive demand for development sector employment, and therefore, the skills mismatch observed. The first is a direct effect of the existence and proliferation of the development sector and the second is an indirect effect related to imperfect information.

First, the development sector is an attractive option for those wishing to contribute to society. According to one respondent: “*I want to work for a charity/NGO to help children. That is why I took Peace and Conflict Studies.*”²³ Similar sentiments were shared by approximately two thirds of those taking NGO courses as the NGO/development sector is perceived as a bigger contributor to society relative to the public and private sectors. The desire to “contribute,” and possibly do so through the development sector, is expected to be strong in a post-conflict setting like Sierra Leone. Other pull factors cited that incentivize choosing the development sector include perceived access to training and the status associated with working for an NGO, INGO or donor organization. And particularly for donor organizations, remuneration packages are relatively generous. It was also reported that perceived fairness and relatively more transparent recruitment practices in the development sector incentivize both those trained in NGO courses and non-NGO courses to apply for development sector jobs.

An indirect effect arises from misinformation about skills demanded in the labor market and the employability of graduates with NGO degrees. This is not directly linked to development organizations in the country but is a wider problem of imperfect information in the labor market. About a third of participants who had enrolled in an NGO course, had not fully understood the qualifications demanded by employers *ex ante*, and upon graduation realized that: “*your degree is not marketable*”²⁴ and “*My field is mainly for NGO jobs and the UN. I applied for many jobs at the NGOs. The jobs are at the banks.*”²⁵ Limited demand for these qualifications therefore pushes some graduates into the NGO sector, though they may have had other aspirations initially. This likely explains why none of the graduates with an NGO degree opted for private sector employment (Table 3).

Fig. 4: Aid and human capital development – a conceptual framework

In sum, the qualitative evidence suggests that the development sector shapes the types of human capital available in the labor market directly through interventions and indirectly as an employer (Fig. 4). It follows that these graduates,

²³ Participant 26, Group 6 (October 12, 2017)

²⁴ Participant 6, Group 2 (October 10, 2017)

²⁵ Participant 41, Group 9 (November 28, 2017)

when employed in the NGO sector, further develop NGO-specific skills through learning by doing. Such changes in human capital accumulation and the resultant skills composition have potential implications for economic growth.

7. The development sector, changes in human capital accumulation and the implications for growth

7.1. Human capital as a necessary condition for growth

The standard Solow model considers labor measured in effective units (Solow, 1956 cited Mankiw et al. 1992). In this classical set-up, labor (L) is modified by an exogenously determined level of technological progress (A) and together with the capital stock (K), contribute to the level of output produced in the economy (Y). In the Cobb-Douglas formulation this is given by $Y = K^\alpha (AL)^{1-\alpha}$, where AL is effective labor. As effective labor increases, output should increase. Mankiw et al. (1992, 416) augment the Solow Model, adding human capital accumulation such that $Y = K^\alpha H^\beta (AL)^{1-\alpha-\beta}$. In this set-up, it is analytically clear that investments in human capital and subsequent improvements in the human capital stock (H) are good for economic growth.

Beyond the effects of the human capital stock on growth as in the formulation above, endogenous growth theories argue that there are also accumulation effects of human capital that can lead to self-sustaining growth (Romer 1990). Romer (1990) recognizes that the stock of scientific knowledge is not tied to any one individual, and hypothesizes that the creation of new designs (through applied knowledge) is a function of the human capital stock, as well as the growth of human capital.²⁶ In addition to being an input into the production function as in Romer (1990), a skilled and educated workforce can facilitate improvements in total factor productivity in cases where technology is imported from more advanced countries (Gemmell 1996). In contrast to Romer (1990) some types of scientific knowledge can be imported (and is thus exogenous), but the level of human capital available to absorb, utilize and build on imported technology matters for growth in this framework.

Romer's (1990) conceptualization of the stock of scientific knowledge as being distinct from the schooling of any one individual in its ability to generate growth is useful for the present analysis. Moreover, it has been empirically shown that the composition of the tertiary-educated workforce matters for growth, and there are higher returns to STEM training (Lin 2004). The question that follows is: what are the potential implications for economic growth from development sector-influenced changes in human capital accumulation in countries like Sierra Leone?

7.2. The aid, human capital, growth nexus

As shown, there has been a significant increase in the numbers and share of graduates with NGO courses, and at the same time, little growth in the number of STEM graduates (in recent years) and a declining share - dissimilar to global trends (UNESCO 2020). Qualitative data suggest that the shift in the skills composition is partly due to direct interventions and the employer role of the development sector. In assessing the potential growth implications from these changes, it is important to evaluate the usefulness of the resultant human capital stock to the economy.

Graduates trained in NGO courses are demanded by NGOs, INGOs and donor organizations when vacancies arise. At the individual level, some workers gain employment. At the aggregate level, total jobs created may even be higher because of development sector employment. However, this may or may not be good for growth in the aggregate. The

²⁶ The Mankiw-Romer-Weil model presented immediately above [$Y = K^\alpha H^\beta (AL)^{1-\alpha-\beta}$] would be an endogenous growth model if $\alpha + \beta = 1$ so there was no longer diminishing marginal returns (Mankiw et al. 1992, 421).

ability of employment in the development sector to generate growth depends on the propensity of development organizations to contribute to growth through their activities. Evidence from Sierra Leone suggests that grants to the government have been good for pro-poor growth, but there is no evidence to suggest technical and non-technical assistance contribute to growth (Kargbo and Sen 2014). Though the impact on economic growth may be limited, the development sector has contributed to broader development goals such as security in the immediate post-war years, basic education, and health (Kanyako 2016).

The second criterion is to consider if NGO courses develop human capital that is useful and transferable to non-development sectors. In the terminology of Becker's (1964) framework, skills training can be dissected into general and specific human capital. Some training acquired for working in (or through working with) a development sector organization may be general training, which contributes to the stock of general human capital and increases the marginal product of labor across many sectors. Examples of this include training in Finance, Procurement, Project management, and Monitoring and Evaluation. On the other hand, many NGO courses such as Peace and Conflict Studies, Sociology and Social Work, Development Management, Conflict Analysis and Conflict Resolution, and Population and Development offer specific training and cultivate specific human capital that increases marginal productivity in the development sector primarily, with little productivity gains to other sectors of the economy. This is reflected in the low demand reported by private sector companies.

Taking the production function from Mankiw et al. (1992), aggregate output is given by $Y = K^\alpha H^\beta (AL)^{1-\alpha-\beta}$. Based on the two mechanisms discussed (Fig 4), human capital can be modelled as a function of both donor interventions in courses/curriculum development (δ) and the strong presence of a development sector which shapes human capital investment decisions through labor demand (γ). It follows that: $H = H(\delta, \gamma)$.

A rough assessment of the potential impact on output (and subsequently growth) is dependent on how human capital is measured in the production function. In Mankiw et al. (1992) human capital was measured using average schooling. Using this metric, the human capital stock in Sierra Leone has unequivocally increased because of the direct involvement of development partners in establishing courses (δ). These interventions increased the number of graduates in the labor market in fields that may have otherwise not existed. *Ceteris paribus*, this should be good for growth. If the human capital stock is measured by translating trained workers into "unskilled worker equivalents" by summing the country's skilled workforce weighted by their wages relative to unskilled workers (Jones 2014, 3752-3753), the expected results would be significantly different as many of these graduates are unable to find employment because of skills mismatch, and resort to informal employment similar to the unskilled. Other human capital measures which consider the probability of being employed and expected wages when calculating human capital productivity, would also suggest limited impacts on growth (Liu and Fraumeni 2020).

The ongoing presence of the development sector also incentivizes some students to develop skills for the sector instead of other sectors in the economy (γ). This is seen in Sierra Leone as enrollment in NGO courses steadily increased as the development sector became more established in the post-war years. There is now an excess supply of these workers (but a shortage of other skills), as the creation of development sector jobs has not kept up with the pace of graduates

with NGO courses entering the labor market.²⁷ There is also evidence to suggest that jobseekers with higher cognitive ability opt into the development sector (Harris 2019).

A potential long-run implication of the changing skills composition may be that some sectors are non-starters. In standard Dutch disease models an extractive boom leads to a resource movement effect as the boom increases the marginal product of mobile factors in the extractive sector, and draws resources from other sectors giving rise to what the authors called “direct de-industrialisation” (Corden and Neary 1982, 827-830). In the present analysis, if skills are not developed for other sectors of the economy to begin with (such as agriculture, manufacturing and services) in favor of the development sector, it then becomes increasingly difficult for such sectors to establish and operate in a viable way. The process is a movement in human capital investment which affects the future labor force, rather than a resource movement of the current workforce. The accumulation effects of human capital that Romer (1990) hypothesized to be associated with self-sustaining growth may also be lower.

In sum, *ceteris paribus*, the contribution to growth is contingent on whether (or not) interventions develop general human capital that is economically useful and transferable to growth-generating sectors of the economy once demand for workers has been met in the development sector. The transferability of skills to the formal private sector is crucial, as this sector has traditionally been the main driver of economic growth (Khan and Reinhart 1990; La Porta and Shleifer 2014), and in particular the manufacturing sector (Szirmai and Verspagen 2015).

8. Conclusions

This paper has put forward a likely new channel in the aid-growth nexus: human capital accumulation that is influenced by the development sector. The development sector undoubtedly contributes to host-countries in many positive ways. In Sierra Leone, this has been in areas related to peacekeeping after the war, and more recently, health and poverty interventions. On the other hand, there are also distortions and likely harmful effects. The ongoing presence of a large development sector has the potential to change human capital accumulation decisions and the resultant skills composition in the labor market. The mechanisms through which this can occur includes interventions at tertiary institutions, and importantly, individual decisions to train for employment in the development sector. These effects are often not considered, and likely harder to respond to as it is the ordinary day-to-day operations of development partners as employers that can impact on the skills composition in the aid-receiving country.

From the Sierra Leonean data, the change in the skills composition has been a gradual shift toward development sector-oriented skills at the degree level, which has been associated with a smaller share of STEM graduates in the labor market. As a case study, Sierra Leone provides lessons that may be applicable to other small, low-income countries that are heavily aid dependent, and the employment role of the development sector is likely significant – for example, Liberia, Central African Republic, Guinea Bissau, to name a few (UNCTAD 2019, 19); and those which are a larger, but have had similar direct interventions at the tertiary level – for example Rwanda, Burundi, Democratic Republic of Congo, Kenya, Uganda, Nigeria, and South Sudan (Omeje 2015). Liberia also belongs to the latter group.

Responding to these issues requires critical reflection on how the development sector operates, and what its operations mean for human capital decisions, skills, and the labor market. At the policy formation and implementation levels,

²⁷ Specific to peace related training, employment opportunities significantly reduced as the international peacekeeping mission withdrew from Sierra Leone in 2014.

there are some adjustments that can be made. For example, in introducing new NGO courses, donors could agree enrollment limits with partner universities. Limits should be aligned with job creation in the development sector as this sector absorbs most NGO graduates. In addition to this, donors should work with universities to ensure that the skills generated through these degrees are well-communicated to students before they enroll. In so doing, issues related to unemployability from misinformation would be reduced. As a final point, donor organizations are often involved in several aspects of the economy. In terms of consolidating efforts and ensuring synergies, human capital interventions at the highest level should also complement domestic and international efforts which seek to boost growth sectors such as agriculture and mining (in Sierra Leone). Such a strategy for human capital would complement investments in physical capital and infrastructure.

The hypothesis presented here that changes in the composition of the human capital stock can be a channel in the aid-growth nexus has been informed by qualitative data. Further research can formally test this hypothesis. This has not been possible using Sierra Leonean data as university-level data available during the civil war are poor quality, and thus the dataset reduces to a 23-year period only (1985-1989 and 2001-2017). This is too small for robust statistical analysis. A cross-country panel data analysis would therefore be more appropriate. In terms of cross-country evidence, there are no rigorous studies (to the best of the author's knowledge) that have explored the relationship between aid and STEM graduates, either testing association or causation. This article therefore provides preliminary evidence that such a relationship can exist, which is a fruitful avenue for future research. Such research is likely a large endeavor as secondary data on skills at the tertiary level from established sources (such as UNESCO and the OECD) are sparse for the countries that are most aid dependent. Similarly, country-level data on the estimated skills gap and aid to the education sector are limited for these countries. An important first step in this area of research and better understanding these issues would involve compiling a database on human capital accumulation by type of training and education-related aid-spending in low-income countries.

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Appendix 1: List of Interview Participants²⁸

Interviewee number	Role	Activities/Operations	Organization number	Sector	Ownership	Date
1	Permanent Secretary	Ministry of Labor and Social Services	1	Government	Local	07 August 2017
2	Labor Officer	Ministry of Labor and Social Services	1	Government	Local	09 August 2017 06 October 2017 22 November 2017 01 December 2017
3	Program Officer	National Youth Commission	2	Government	Local	18 August 2017
4	Program Specialist	Donor/Development Partner	3	Development	International	08 September 2017
5	Program Officer	Donor/Development Partner	3	Development	International	08 September 2017
6	Deputy Program Coordinator	Donor/Development Partner	4	Development	International	11 September 2017
7	Advisor	Donor/Development Partner	4	Development	International	11 September 2017
8	Supervisor	Ministry of Finance	5	Government	Local	11 September 2017
9	Officer	Ministry of Finance	5	Government	Local	11 September 2017
10	Officer	Ministry of Finance	5	Government	Local	11 September 2017
11	Manager	Ministry of Finance	5	Government	Local	11 September 2017
12	Officer	Ministry of Finance	5	Government	Local	11 September 2017
13	Director	Local NGO	6	Development	Local	12 September 2017
14	HR Manager	Manufacturing	7	Private	Local	13 September 2017
15	Director	Local NGO	8	Development	Local	13 September 2017
16	Advisor	Donor/Development Partner	4	Development	International	13 September 2017

²⁸ Some interviewees represented multiple organizations.

Interviewee number	Role	Activities/Operations	Organization number	Sector	Ownership	Date
17	Secretary General	Sierra Leone Employers Federation	9	Other	Local	18 September 2017
18	Project Manager	International NGO	10	Development	International	18 September 2017
19	Labor Officer	Sierra Leone Labor Congress	11	Other	Local	19 September 2017
20	HR Manager	Banking	12	Private	Local	20 September 2017
21	Head HR	Banking	13	Private	International	21 September 2017
21	CEO	Operations and Services	14	Private	Local	21 September 2017
22	President	Local NGO	16	Development	Local	22 September 2017
22	Lecturer	University of Sierra Leone	17	Other	Local	22 September 2017
23	Field Officer	International NGO	18	Development	International	22 September 2017
24	HR Manager	Banking	19	Private	Local	22 September 2017
25	Director	International NGO	20	Development	International	26 September 2017
26	Director	International NGO	21	Development	International	26 September 2017
26	Director	Consulting Services	22	Private	Local	26 September 2017
27	Economist	Donor/Development Partner	23	Development	International	27 September 2017
28	HR Manager	Logistics	24	Private	International	29 September 2017
29	Chief Financial Officer	Construction	25	Private	Local	30 September 2017
30	Head	Agriculture	26	Private	Local	30 September 2017
31	Managing Director	Recruitment	27	Private	Local	02 October 2017
32	HR Director	Telecommunications	28	Private	International	03 October 2017
33	HR Manager	Audit Services Sierra Leone	29	Government	Local	03 October 2017
34	Managing Director	Recruitment	30	Private	Local	05 October 2017
35	Advisor	Donor/Development Partner	4	Development	International	05 October 2017
36	HR Manager	Manufacturing	31	Private	International	09 October 2017

Interviewee number	Role	Activities/Operations	Organization number	Sector	Ownership	Date
37	Deputy Manager, HR	Manufacturing	31	Private	International	09 October 2017
38	Principal Country Economist	Donor/Development Partner	32	Development	International	11 October 2017
39	Economist	Donor/Development Partner	33	Development	International	13 October 2017
40	HR Manager	Energy	34	Private	International	13 October 2017
41	Consultant	Donor/Development Partner	35	Development	International	21 November 2017
41	Head of Department	University of Sierra Leone	17	Other	Local	21 November 2017
42	Founder and CEO	Mining and Construction	36	Private	Local	23 November 2017
43	Human Resource and Corporate Affairs Director	Mining	37	Private	International	24 November 2017
44	Consultant	Donor/Development Partner	35	Development	International	04 December 2017
45	Project Officer	Donor/Development Partner	38	Development	International	04 December 2017
46	Director, Compliance	Corporate Affairs Commission	39	Government	Local	05 December 2017

Appendix 2: List of Focus Group Participants²⁹

Participant Number	Focus Group Number	Course of Study	University	Graduation Year	Gender	Preferred Job	Preferred Sector	Employment Status	Date
1	1	Civil Engineering	USL	2018	Male	Architect	Public	Final-year Student	10 October 2017
2	1	Commerce	USL	2018	Female	Marketer	Public	Final-year Student	10 October 2017
3	1	Linguistics	USL	2018	Male	Teacher	Private	Final-year Student	10 October 2017
4	1	Economics	USL	2018	Male	Policy Practitioner	NGO/ Development	Final-year Student	10 October 2017
5	2	Linguistics	USL	2018	Female	Researcher	NGO/ Development	Final-year Student	10 October 2017
6	2	Sociology	USL	2018	Male	Counsellor	NGO/ Development	Final-year Student	10 October 2017
7	2	Electrical and Electronic Engineering	USL	2018	Male	Electrical Engineer	Public	Final-year Student	10 October 2017
8	2	Adult Education and Community Development Studies	USL	2018	Female	Community Outreach	NGO/ Development	Final-year Student	10 October 2017
9	2	Civil Engineering	USL	2018	Female	Engineer	NGO/ Development	Final-year Student	10 October 2017
10	3	Geology	USL	2018	Male	Exploratory Geologist	Private	Final-year Student	11 October 2017

²⁹ Preferred job and current employment frequently differ as many graduates are part-time employed while searching for other jobs.

Participant Number	Focus Group Number	Course of Study	University	Graduation Year	Gender	Preferred Job	Preferred Sector	Employment Status	Date
11	3	Mass Communications	USL	2018	Male	Human Rights Advocate	NGO/ Development	Final-year Student	11 October 2017
12	3	History and Politics	USL	2018	Male	Administrator	Public	Final-year Student	11 October 2017
13	3	Political Science	USL	2018	Male	Educator	NGO/ Development	Final-year Student	11 October 2017
14	3	Geology	USL	2018	Male	Geologist	Private	Final-year Student	11 October 2017
15	4	History and Politics	USL	2018	Female	Administrator	Public	Final-year Student	11 October 2017
16	4	Economics	USL	2018	Male	Economist	Public	Final-year Student	11 October 2017
17	4	Mass Communications	USL	2018	Female	Public Relations	Public	Final-year Student	11 October 2017
18	4	Law	USL	2018	Male	Lawyer	Private	Final-year Student	11 October 2017
19	4	Law	USL	2018	Male	Human Rights Lawyer	NGO/ Development	Final-year Student	11 October 2017
20	5	Mathematics and Statistics	USL	2018	Male	Statistician	Public	Final-year Student	12 October 2017
21	5	Peace and Conflict Studies	USL	2018	Female	Outreach Worker	Public	Final-year Student	12 October 2017
22	5	Philosophy	USL	2018	Male	Administrator	Public	Final-year Student	12 October 2017

Participant Number	Focus Group Number	Course of Study	University	Graduation Year	Gender	Preferred Job	Preferred Sector	Employment Status	Date
23	5	Social Work	USL	2018	Male	Counsellor	NGO/ Development	Final-year Student	12 October 2017
24	6	Social Work	USL	2018	Male	Community Outreach	NGO/ Development	Final-year Student	12 October 2017
25	6	History and Politics	USL	2018	Male	Administrator	NGO/ Development	Final-year Student	12 October 2017
26	6	Peace and Conflict Studies	USL	2018	Male	Advocacy	NGO/ Development	Final-year Student	12 October 2017
27	6	Political Science	USL	2018	Female	Administrator	Public	Final-year Student	12 October 2017
28	6	Philosophy	USL	2018	Female	Personnel Officer	Public	Final-year Student	12 October 2017
29	6	Accounting and Finance	USL	2018	Female	Accountant	Private	Final-year Student	12 October 2017
30	7	History and Politics	USL	2017	Female	Officer	NGO/ Development	Unemployed	27 November 2017
31	7	Human Resource Management	UNIMAK	2016	Male	Personnel Officer	NGO/ Development	Casual worker	27 November 2017
32	7	Economics	USL	2014	Male	Project Coordinator	NGO/ Development	Employed	27 November 2017
33	7	Mass Communications	USL	2018	Female	Field Officer	NGO/ Development	Employed	27 November 2017
34	8	Environmental Science	Njala	2012	Male	Entrepreneur	Private	Employed	27 November 2017

Participant Number	Focus Group Number	Course of Study	University	Graduation Year	Gender	Preferred Job	Preferred Sector	Employment Status	Date
35	8	Banking and Finance	Njala	2015	Male	Entrepreneur	Private	Employed	27 November 2017
36	8	Social Work	Njala	2015	Female	Outreach Worker (Children)	NGO/ Development	Unemployed	27 November 2017
37	8	Procurement	IPAM	2016	Male	Entrepreneur	Private	Employed	27 November 2017
38	9	Law Political Science	USL	2013	Male	Lawyer	Private	Unemployed	28 November 2017
39	9	B.A. General	USL	2017	Male	Musician	Private	Employed	28 November 2017
40	9	Commerce	USL	2017	Male	Officer	NGO/ Development	Self-employed	28 November 2017
41	9	Peace and Conflict Studies	USL	2017	Female	Research Officer	NGO/ Development	Unemployed	28 November 2017
42	9	Sociology	Njala	2013	Female	Field Officer	NGO/ Development	Unemployed	28 November 2017
43	10	Financial Services	IPAM	2014	Female	Finance Officer	Private	Employed	29 November 2017
44	10	Information Systems	IPAM	2017	Female	Public Relations	Private	Unemployed	29 November 2017
45	10	Politics	USL	2013	Female	Banker	Private	Employed	29 November 2017
46	10	MSc Entrepreneurship BSc. Economics	Nigeria	2017	Male	Entrepreneur	Private	Self-employed	29 November 2017

Participant Number	Focus Group Number	Course of Study	University	Graduation Year	Gender	Preferred Job	Preferred Sector	Employment Status	Date
47	10	Peace and Conflict Studies	USL	2015	Male	Human Rights	NGO/ Development	Unemployed	29 November 2017
48	10	English	USL	2013	Male	Lecturer	Public	Employed	29 November 2017
49	11	History and Politics	USL	2016	Male	Entrepreneur	Private	Unemployed	29 November 2017
50	11	Economics	USL	2014	Male	Entrepreneur	Private	Unemployed	29 November 2017
51	11	Peace and Conflict Studies	USL	2010	Male	Police Officer	Public	Employed	29 November 2017
52	11	History and Politics	USL	2016	Male	Sales and Marketing	Private	Employed	29 November 2017
53	11	History and Sociology	USL	2012	Female	Outreach Worker	NGO/ Development	Employed	29 November 2017