Understanding the Effects of a Large Development Sector on the Labour Market of a Small Low-income Country: Evidence from Sierra Leone

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by

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ABSTRACT

This thesis examines the effects of a large and ever-present development sector on the labour market of aid-dependent low-income countries, using Sierra Leone as a case study. The thread that connects the substantive chapters of this thesis is the positioning of the development sector as a third sector in the labour market. Alongside the public and private sectors, the development sector is also an employer and skills developer in host-countries. Embedding the development sector as a sector in itself, makes apparent a channel of aid transmission in the domestic economy, via the labour market - a channel that is often overlooked in both academic and policy discourses. This in turn brings to the debate the short-term and the long-term effects on the labour market of host-countries. The thesis is novel as it applies analytical methods that are primarily used in the economics discipline, to the types of questions which sit within critical development studies.

The main findings are that the presence of a large development sector affects occupational choice of graduates and the skills available in the labour market. These effects interplay with: (i) cognitive ability of graduates – higher ability graduates are more likely to choose employment with a donor organisation, non-governmental organisation or international non-governmental organisation; (ii) patronage in the labour market – in low trust environments where patronage exist in the labour market the development sector emerges as a more transparent recruiter and thus attracts talent; and (iii) skills training programmes at vocational and university levels have been directly affected by donor policies and actions. This process of change in the labour market and skills composition is important in itself; but there are also potential implications for sustainable home-grown growth and continued aid dependence.

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LIST OF ACRONYMS

AfDB	African Development Bank
AME	Average Marginal Effects
APC	All People's Congress
BMZ	Federal Ministry of Economic Cooperation and Development
DAC	Development Assistance Committee
DDR	Disarmament, Demobilisation and Reintegration
DFID	Department for International Development
EU	European Union
FBC	Fourah Bay College
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GNI	Gross National Income
GoSL	Government of Sierra Leone
GPA	Grade Point Average
ILO	International Labour Organisation
IMF	International Monetary Fund
INGO	International Non-governmental Organisation
IRT	Item Response Theory
LIC	Low-income Country
MCA	Multiple Correspondence Analysis
MEM	Marginal Effects at the Mean
MLSS	Ministry of Labour and Social Security
MNC	Multi-national Corporation
MNP	Multinomial Probit
MOF	Ministry of Finance

MPB	Marginal Private Benefits
MPC	Marginal Private Costs
MPL	Multiple Price List
MSB	Marginal Social Benefits
MSC	Marginal Social Costs
NAYCOM	National Youth Commission
NCTVA	National Council for Technical, Vocational and Other Academic Awards
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PRSP	Poverty Reduction Strategy Paper
RUF	Revolutionary United Front
RUM	Random Utility Model
SLL	Sierra Leonean Leone
SSL	Statistics Sierra Leone
SLPP	Sierra Leone People’s Party
STEM	Science, Technology, Engineering and Mathematics
TVET	Technical Vocational Education and Training
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Cultural and Scientific Organisation
USL	University of Sierra Leone
US	United States
USAID	United States Agency for International Development

CHAPTER 1 – THESIS INTRODUCTION

> "In poor countries today, aid is in the civil service, aid is in the political institutions, aid is in the military, aid is in healthcare and education, aid is in infrastructure, aid is endemic."
>
> Moyo (2010, p.37)

Poor countries, the developing world, the global south, low- and middle-income countries. These are various terms used to describe a group of countries that are less developed based on various economic and social metrics. These countries are a diverse group spanning resource endowment, institutional structures, cultures and languages, and geographical areas (Africa, Asia, Latin America, the Middle East, and the Pacific). One commonality across the least developed countries or low-income countries (LICs) is aid. As Moyo (2010) notes, aid has become ubiquitous in poor countries.

This thesis examines the labour market effects of the enduring and persistent presence of aid in LICs. In particular, the thesis explores the effects on the labour market and skills composition that is driven by direct interventions by development sector organisations; and importantly, the unintended consequences which result from their role as employers in the labour market.

The impact of foreign direct investment (FDI) on production, exports, earnings and employment on the economies of recipient countries is not contested. The extractive sector is a common example used to highlight changes to the local economy resulting from FDI. Take for instance a small resource rich country which attracts foreign capital to extract natural resources leading to an increase in extractive sector outputs and economic growth. Such investment-led growth in the natural resource sector – which generates an inflow of export earnings – has been shown to increase employment, creating both direct jobs within the sector and indirect jobs that form around the sector (Weber, 2014; Fleming and Measham, 2014). Another example is that of the tourism industry. Garsous et al. (2017) show that an investment boom in the tourism sector leads to an expansion in employment. In addition to employment-effects, there are likely impacts on skills development as the labour force acquires skills for fast-growing sectors. Kar (2013) explore the link between foreign direct investment and skills development, arguing that expected direct effects include training of employees and suppliers in the multi-national corporations' (MNCs) supply chain, and indirect effects include incentivising the labour force to obtain new skills and training for employment in MNCs.

Foreign aid, and the development sector that results, is in many ways similar in form to FDI as it relates to flow of funds, transfer of technologies and knowledge, and exerting foreign influence in the local context.

Firstly, there is a similar flow of funds from foreign to host-country. Funding to local offices of donor organisations such as the World Bank and other United Nations (UN) organisations, as well as bilateral donors such as the Department for International Development (DFID) and United States Agency for International Development (USAID), government institutions, private companies involved in aid delivery services, international non-governmental organisations (INGOs) and local NGOs largely flow from foreign aid-giving countries either bilaterally, through multilateral organisation or through private philanthropy (for example the Gates Foundation). Approximately US$147 billion flowed from Development Assistance Committee (DAC) countries to aid-receiving countries in 2018 (OECD, 2020a).

Secondly, FDI often brings new technologies, skills and organisational practices. With foreign aid, NGOs and INGOs are often the conduit for the globalisation of managerialism, facilitating the transfer of managerial and administrative practices to developing countries (Roberts et al., 2005).

Thirdly, FDI establishes foreign interest in a local context, either through direct control or substantial influence in daily operations and management. Similarly, the development sector has exerted its influence directly on political processes where aid can be used to add legitimacy to a particular political group (Yanguas, 2017) and by using NGOs and local agents as brokers and extensions of foreign interests in order to diffuse ideas of foreign best practices (Mosse and Lewis, 2006; Hearn, 2007).

Given such parallels, we expect analogous effects of the development sector on the labour market and skills development to that of FDI. Yet these effects have not been fully explored. It is thus the primary focus of the thesis.

This thesis studies the labour market in Sierra Leone, a small low-income country (LIC), and explores how the ongoing presence of a development sector affects the functioning of the labour market. In so doing, the thesis makes both a theoretical and empirical contribution to the discourse which critically looks at the role of aid/the development sector on economic and social outcomes of host-countries.

The main findings of the thesis are that the presence of a large development sector affects occupational choice of jobseekers, as well as the skills that are available in the labour market. I show that these effects interplay with cognitive ability of graduates, patronage in the labour market, and skills training programmes/courses at tertiary institutions that are on offer. This process of change in the labour market is important in itself; but there are also potential implications for sustainable home-grown growth for three reasons.

Firstly, the evidence shows that graduates with higher cognitive ability opt for employment in the development sector instead of the public and private sectors (where, arguably, the long-run social returns are higher); thus implying both an internal brain drain and a welfare loss for the society as a whole. Secondly, as the development sector becomes more attractive, skills are developed for this sector and through employment in the sector. And thirdly, the development sector funds and/or provides skills development programmes which change the skills composition in host-countries.

Ultimately if skills acquired through donor influence, provision or employment are not transferable to other sectors, some industries will experience skills shortages which may limit their growth. It follows that changes in the skills composition which result from donor involvement in the labour market can have potential implications on overall economic growth and development, and can possibly result in a situation where host-countries continue to be aid-dependent and trapped in a cycle of dependency.

1.1. DEFINITION OF CONCEPTS AND STATEMENT OF RESEARCH QUESTIONS

There is an extensive literature on the impact of aid in developing countries, some of which is reviewed in section 1.2.2. Proponents of aid argue that without development spending, observed economic outcomes could have been much worse in developing countries, while opponents point to no/low growth outcomes, continued imperialism through aid, and potential negative impacts on institutions that may lead to a cycle of dependency. The louder voice in this debate has yet to emerge as both sides suffer from an inability to define a credible counterfactual and hence assign causation.

This thesis fits into the body of work which critically assesses the effects of the development sector, by focusing specifically on the labour market of host-countries. Given that the analysis explores the impacts of aid on the labour market, several chapters of the thesis are also positioned within the literature on labour markets in developing countries, and draw heavily on analytical methods and jargon from development and labour economics. The thesis thus aims to bring to bear analytical methods that are primarily used in the economics discipline, to the types of questions which sit within critical development studies.

The thesis addresses three questions in each of the substantive chapters:

1. How does the development sector influence skills composition in host-countries like Sierra Leone?
2. How does the presence of a development sector affect the occupational choice of skilled workers?
3. How do jobseekers navigate patronage in the labour market? And what role does the development sector play in such contexts?

The central argument or common thread across the thesis is that jobseekers and employers structure their decision making with respect to skills development and occupational choice around the development sector, when such a sector exists and is sustained over time.

Terms such as the development sector, labour market, skilled and dependency are used through the thesis. Each is defined below.

The ***development sector*** (as used in this study) comprises organisations that have an overall objective of promoting economic and social development in the local country through policy, advocacy and/or implementation. Importantly, the development sector is funded by official development assistance.[1]

Aid in research, policy and practice is multifaceted - for example, humanitarian aid, development aid, peacekeeping, debt relief. And oftentimes, one type of aid transitions into the next. This thesis is more concerned with the development sector that is borne out of aid spending and operationalised in developing countries, rather than the type or origin of foreign aid. Donor organisations (such as the World Bank, USAID, DFID, UN organisations), INGOs and NGOs are examples of development sector organisations for the purpose of this thesis.

Aid-delivery is complex and in addition to the development sector as defined above, includes the public and private sectors at times. For instance, the public sector is responsible for promoting development and is often funded through Official Development Assistance (ODA) via budget support, and/or programme/project support to line ministries. Moreover, several private sector companies that offer development consulting, technical assistance or enumeration services are also financed through aid. Recognising these complexities, I analyse the development sector as a third sector (alongside the public and private sectors) and as such, do not directly assess the effects of aid that is channelled through the public and private sectors in the subsequent analysis.

[1] According to the OECD (2020b):
"Official development assistance (ODA) is flows are defined as those flows to countries and territories on the DAC List of ODA Recipients and to multilateral development institutions which are:

i. provided by official agencies, including state and local governments, or by their executive agencies; and
ii. each transaction of which:
    a. is administered with the promotion of the economic development and welfare of developing countries as its main objective; and
    b. is concessional in character."

The ***labour market*** in this study takes an economic definition, referring to a place or situation where labour services are bought and sold. Firms, the government and the development sector are employers who demand labour while individual jobseekers/workers supply labour. This is a similar characterisation to Fields (2011). Though the definition is rooted in the economics discipline, it is understood that the labour market also functions as a social institution, where social relationships and structures (driven by class, ethnicity and gender for example), shape interactions in the labour market, and in turn are shaped by the labour market.

Terms such as labour demand, labour supply, search and matching will principally feature in the discussion and are defined in much the same way as in traditional and contemporary works in labour economics. Though the thesis borrows these definitions, I use primary data to demonstrate that the behaviour of labour demand, supply, search and matching may be different from the predications of standard neoclassical theory. Terms such as ***skilled*** labour and skilled workers also routinely feature, and are used to refer to those in the labour force who have been formally educated/trained. Particular reference is made to skilled workers who are university educated or trained in technical vocational areas.

I assume there are three structural features of LICs which are important to the analysis of labour markets: (i) being small and open to trade, (ii) the size of the state and (iii) the size of the development sector, as defined above.

Firstly, almost all LICs are small and highly open and hence have little ability to influence global prices. The implication is that firms (especially those that trade) are likely global price-takers, who in maximising profits, can alter quantity produced, the quantity and mix of factor inputs and some factor prices contingent on monopsony power and legislation; but cannot influence output prices. The extent to which firms are able to alter factor prices and labour utilised in response to global output price changes affects labour demand, wages and employment in the local economy. Secondly, the state is a big economic player, and often has a significant influence on formal-sector job creation. Thirdly, the development sector is instrumental in the economies of LICs and when sustained over time, becomes a third sector (alongside the private and public sectors).

The arguments in the thesis link aid to dependency, with the labour market as a potential channel. Dependency theory is reviewed in section 1.2.1 below, but here I define ***dependency*** as it is used throughout the thesis. I use a broad definition based on the work of Osvaldo Sunkel (1969) in which dependency is defined as an explanation of the economic development (or under-development) of a country due to external political, economic, social and cultural influences.

The arguments underpinning the definition of dependency from its inception as a concept to contemporary understanding of the term lie in the camp of structuralists rather than modernists theories. Modernisation theories assert that countries can move from 'traditional' to 'modern' societies by addressing internal factors, such as national savings, investment and the functioning of markets. Structuralists take account of internal features in the economy similar to modernists; but importantly, also consider the features and structure of global exchange systems (Martinussen, 1997). The latter point – relating to global exchange systems – lies at the heart of dependency theory. To take an example from the Latin American experience in the 1960s, modernisation theories emphasised lack of capital as a constraint to growth, while structuralists were more concerned with the underlying reasons for lack of investment and the difficulties in financing industrialisation such as the existence of small markets in developing countries and their reliance on earnings from the export of raw materials (Martinussen, 1997 p.74). The global system of exchange is thus an important consideration in national development.

In this thesis, aid/the development sector is studied as one aspect of the global system of exchange and interaction. Specifically, the effects on the labour market in low income countries are analysed. There are likely other domestic factors that matter for the labour market, aggregate employment and growth in these contexts – section 5.2.1 of chapter five addresses some of these issues. The arguments of this thesis therefore do not seek to minimise the importance of internal conditions that promote growth and generate employment, nor the role of national actors in the development process. The aim is to recognise that the presence and actions (both intentional and unintentional) of international development actors can impact on the labour market.

1.2. FRAMING THE THESIS

The thread that connects the substantive chapters of this thesis is the positioning of the development sector as a third sector in the labour market. Alongside the private and public sector, the development sector is also employer and skills developer in host-countries. Embedding the development sector as a sector in itself, makes apparent a potential channel of aid transmission in the domestic economy, via the labour market - a channel that is often overlooked in both academic and policy discourses. This brings to the debate the short-term and the long-term effects on the labour market of host-countries, which in turn can be consequential for growth and continued aid-dependency.

Before proceeding, it is important to understand the tenets of dependency theory, the aid-development nexus, and labour markets in developing countries. This section reviews the relevant literature and situates the thesis within this body of work.

1.2.1. The evolution of dependency theory

Several scholars have traced the evolution of dependency theory in summary works. I primarily draw on three reviews for the summary below: John Martinussen's "Society, State and Markets: A Guide to Competing Theories of Development", Ted C. Lewellen's "Dependency and Development: An Introduction to the Third World" and Vincent Ferraro's "Dependency Theory: An Introduction". Below, I summarise the key aspects of the development of dependency theory as an explanation for low levels of development in developing countries as a prelude to the analysis.

As summated in Martinussen (1997), be it a metropole-satellite relationship as conceptualised by Andre Gunder Frank in 1967, a centre-periphery association as described by Samir Amin in 1974 and 1976, theories of unequal exchange by Arghiri Emmanuel in 1969 and Geoffrey Kay in 1975, or more recent theories of dependent development, the commonality among dependency theorists is that interactions between dominant and dependent states reinforce and intensify unequal patterns of economic development.

The idea was born in the late 1950s, when Raúl Prebisch - a pioneer of dependency theory - observed that growth in advanced countries did not necessarily lead to growth in developing countries as predicted by neoclassical theory (Ferraro, 2008). The reason for this Prebisch argued, was that value addition took place in industrialised countries. Hence poor countries would always pay more for the usable final products than what they earned from exporting primary commodities (Ferraro, 2008).

Since Prebisch's initial observations, the theory has evolved, and complexities added based on Marxist and structuralists perspectives. Much of what is today understood as dependency theory was developed in the late 1960s and 1970s. As inequality between rich and poor countries continued to increase in post-colonial times, modernisation theories - such as Rostow's (1960) stages of economic growth for example, failed to explain the divergent trends (Lewellen, 1995). Scholars thus began to look beyond poor countries themselves, to international systems.

Andre Gunder Frank argued that exchange relations such as trade, led to economic surpluses being generated in Latin America, which were then appropriated to the more affluent capitalist in developed countries like the United States (Frank, 1967 cited in Martinussen, 1997). Using data based on European-African historical relationships, Samir Amin pushed the dependency theory discourse further, classifying countries as either auto-centric or peripheral economies to reflect the asymmetry in relationship between African and European countries (Amin, 1974; 1976 cited in Martinussen, 1997). The notion of the centre versus the periphery remains common terminology among contemporary dependency theorists. According to Amin, countries in the periphery had distorted production structures with over-developed extractive industries that had little links to their under-developed manufacturing sectors thus making the periphery heavily dependent on more industrialised countries at the centre (Martinussen, 1997).

Alongside this, theories of unequal exchange emerged and sought to challenge the belief that trade was advantageous to all parties involved, instead arguing that more industrialised countries could buy goods from peripheral countries at prices below costs, and then sell manufactured goods to them above cost; thus negatively affecting the terms of trade of developing countries (Martinussen, 1997). Wallerstein's 'world systems' approach also appeared at a similar time, which focused on prevailing international structures and hierarchies which determine the development potential of countries (Martinussen, 1997). The further down the hierarchy (mainly peripheral countries) the more barriers to development by the established global order.

Criticisms of the early manifestations of dependency theory described above centred on theorists grouping developing countries together, without fully recognising differences between countries. This led to the conceptualisation of dependent or associated development, which was first put forward by Fernando Cardoso (1973) as a more nuanced alternative. Cardoso's dependent development recognises the core versus periphery dynamics theorised by Amin, but also acknowledges the power and capabilities of the national bourgeoisie to either shape or hinder development, contingent on if it were an extension of the imperial countries, or proponent of national interests.

The notion of dependent development continues today as the growth and development prospects of many developing countries remain dependent on foreign direct investment, foreign debt financing (both market and concessional financing), foreign trade with more developed countries, and in the last six decades, foreign aid (Vernengo, 2006; Chase-Dunn, 2015). Of these flows, foreign aid has been the most stable and sustained over time (Figure 1.1).

1.2.2. Foreign aid and its developmental impacts

Several authors have chronicled post-war foreign aid as a prelude to their analysis of development assistance, a few of which are quoted here. The aid-origins story often starts with the European Recovery Program (commonly titled the Marshall Plan after US Secretary of State George C. Marshall), where Western European countries were assisted by the United States in a period of post-war recovery and reconstruction (Browne, 2006; Thorbecke, 2007; Moyo, 2010). Given the success of the Marshall Plan the ideas were exported to the newly independent former colonies in the form of foreign aid. Browne (2006) dissects the aid agenda into three periods focusing on (i) gap-filling during the 1960s into the 1970s (ii) quality of outputs from the mid-1970s to 1990 and (iii) outcomes from 1990s.

As per the Marshall Plan before it, aid was intended to fill a saving gap in order to spur capital investment in developing countries. In addition to this, aid served to fill an external payments gap and sustain imports when there was an external shock. The final gap was technical capacity, which continues today in the form of technical assistance programmes. Filling these gaps were intended to stimulate growth. 'The quality of output' period transcended the quest for growth and focused on the basic needs of those living in poor countries (Browne, 2006). This materialised in a shift of aid spending away from infrastructure projects to investments in agriculture and rural development. The final period on 'outcomes' emphasised the importance of reform, improved governance, reduced corruption and market liberalisation (Browne, 2006; Thorbecke, 2007). Though Browne's (2006) characterisation emphasises the boom in conditionality tied to aid from the 1990s, others have segmented the 'conditionality' period into an era of structural adjustment in the mid-1980s aimed at liberalising macroeconomic policy choices related to exchange rates, trade openness, privatisation and the removal of subsidies and price controls; followed by governance conditionality and public sector reform from the mid-1990s into the 2000s (Adam and O'Connell, 1999; Temple, 2010). The notion of good governance as a panacea for development still remains today.

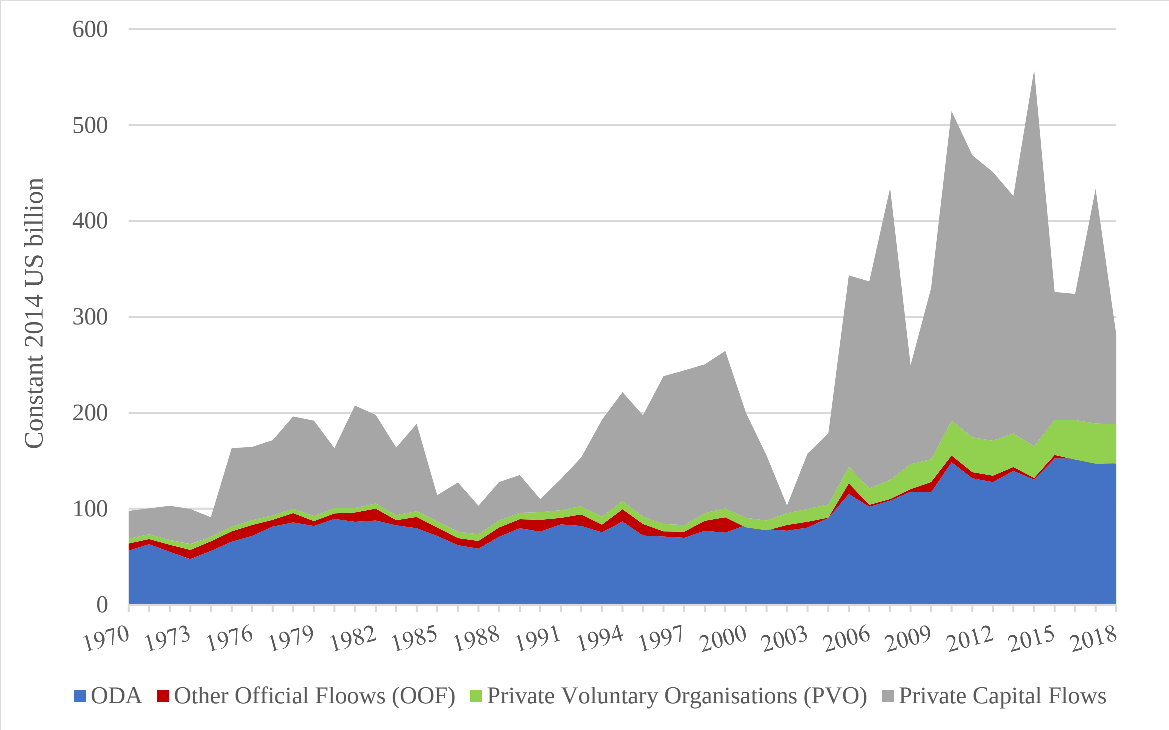
Arguments for aid are often rooted in theoretical growth models like the Harrod-Domar and Solow-Growth models. For example, aid proponents like Jeffery Sachs and colleagues argue that aid is necessary for building the capital stock and spurring growth in low-income countries that are trapped in poverty and unable to generate enough savings (Sachs et al., 2004). Empirically, many developing countries have benefitted from infrastructure development as a result of grants and/or concessional loans from both bilateral and multilateral donors/creditors. Others have suggested that donors have contributed to the proliferation of market-oriented reforms which can be favourable to growth (Heckelman and Knack, 2009).

Human capital models of growth (Romer, 1990) and arguments for people-focused development and enhanced capabilities (Sen, 1998) provide justification for investments in health, education, sanitation and other types of social spending. From the data, there have been improvements in school enrolment, child and infant mortality, life expectancy and access to potable water at the community level, to name a few of the achievements under the Millennium Development Goals (UN, 2015). More recently, the Sustainable Development Goals progress report shows even further reductions in infant mortality, increased access to electricity and real GDP growth of 4.8 percent in least developed countries between 2010-2017; but more people are living in hunger, education quality is poor in developing countries and industrialisation remains below target levels (UN, 2019). Proponents of aid argue that without aid, the lives of many people in developing countries would simply be worse off; and content that the benefits of aid would be more evident should the institutions and policy environments in developing countries be stronger - in line with evidence from Burnside and Dollar (2000).

Irrespective of the motivation – economic, political and/or moral – official development assistance from developed to developing countries has increased in real terms over the years, and has been significantly less volatile than private capital flows – though the latter has been larger on average (Figure 1.1). Though official aid continues to be the largest type of aid to developing countries, contributions from private voluntary organisations (PVOs) have been increasing, especially since the dawn of the new millennium.

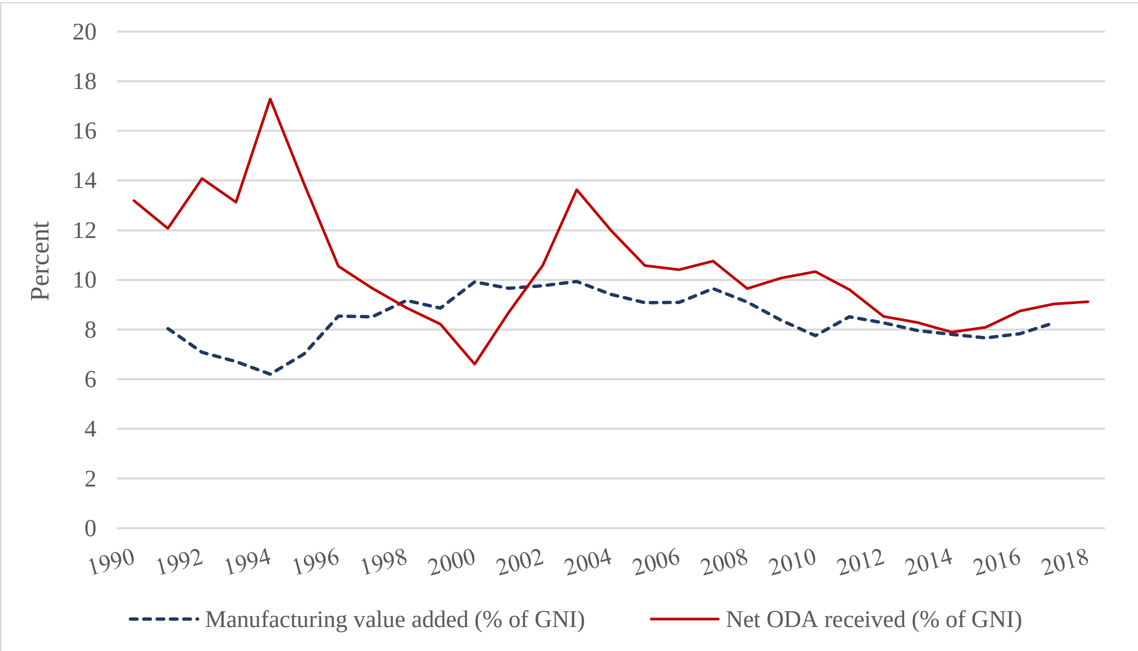
These flows are particularly significant to the economies of the poorest countries. ODA contributes a large amount to gross national income (GNI); and is comparable to the size of the manufacturing sector in the average low income country (Figure 1.2). For reference, manufacturing value added as a share of GNI was approximately 8.3 percent in the average LIC in comparison to 16.8 percent globally (World Bank, 2020). Moreover, the size of the development sector in totality is likely larger as ODA does not include private contributions, which as seen in Figure 1.1, has been increasing over time.

Figure 1.1: DAC members' total net resource flows to developing countries 1970-2018



Source: OECD (2020a)

Figure 1.2: ODA contribution to LICs 1990-2018



Source: World Development Indicators (World Bank, 2020)

Beyond financial or monetary value, aid has become influential in several aspects of the economies and societies of host-countries. The effects of aid on outcomes in developing countries have been critically assessed in recent years in the development studies discourse (Hearn, 2007; Lewis and Kanji, 2009; Jablonski, 2014; Yanguas and Bukenya, 2016; Yanguas, 2017), and through the analysis of aid effectiveness in economics (Easterly, 2002; Easterly, 2007; Rajan and Subramanian, 2007; Chang, 2008; Hussain et al., 2011; Rajan and Subramanian, 2011). These two bodies of literature are reviewed below. Though the literature on the developmental effects of aid often emphasises the role of the donors and foreign aid, it should be noted that there is a budding literature on extraversion, resistance or even manipulation as governments navigate and attempt to utilise aid to their benefit - see Bayart and Ellis (2000) and Whitfield (2008) for some notable examples.

Yanguas (2017) interrogates the ethical implications of donor choices in recipient countries, focusing on the effects of aid on political settlement and how local elites influence the allocation of resource endowment and policy choices. The author contends that aid can target either the incumbent government or challenger, thereby giving legitimacy to a particular group. For example, withdrawal of aid immediately before an election reduces the legitimacy of the incumbent government and reduces the likelihood of re-election. Aid thus shifts the balance of power, with long-lasting practical consequences for the citizenry that come with a change in administration. Jablonski (2014) similarly evaluates the effects of aid on political processes, but unlike Yanguas (2017), Jablonski argues that the effects hinge on the incumbent's use of aid, rather than on the donor's endorsement of a particular faction; and finds that incumbents disproportionately allocate aid to areas where they wish to increase vote shares. Similar results were found by (Kunčič, 2011).

Beyond the effects on electoral outcomes, aid has been shown to affect policy processes, in addition to policy content through conditionality. Yanguas and Bukenya (2016) analyse the intervention of Tony Blair's African Governance Initiative (AGI) and argue that through such interventions, aid has facilitated the diffusion of a new model of national development planning.[2] The AGI model

[2] AGI has since been rebranded as the Tony Blair Initiative (TBI).

works directly with presidential delivery units within State House (or the equivalent). Though innovative, established government institutions are often circumvented, thus limiting their reform capacity. Yanguas and Bukenya's (2016) findings relate to earlier work which probe whether aid develops or erodes institutional capacity - for example see Knack (1999) and Bräutigam and Knack (2004). Rajan and Subramanian (2007) also provide evidence that weak governance, which is associated with aid, is a likely channel of the aid-curse.

The effects of aid transcend the political/policy impact, and studies have also assessed the effects on local NGOs, civil society, and traditional grassroots organisations. The NGO sector boomed with increased aid spending, and has been used as a tool to secure local partnerships and local ownership of policy (Hearn, 2007; Lewis and Kanji, 2009). With this, came analyses of the role of NGOs in the development process. The most notable contribution of NGOs has been their role in providing humanitarian aid in times of conflict and crisis (Lewis and Kanji, 2009). Roberts et al. (2005) also argue that one of the overlooked benefits of the globalisation and proliferation of NGOs is the transfer of managerial knowledge and practices.

More critical studies conceptualise local NGOs and civil society as a “battleground” which can be used and abused by donors according to their objectives (Hearn, 2000; 2001) and serving as “brokers” in the development process (Mosse and Lewis, 2006). In subsequent work, Hearn (2007) uses comprador theory to argue that NGOs often function as an extension of foreign/donor interests; and that local staff are utilised to supervise and ensure conformity with donor priorities and ideologies. This aligns with Manji and O’Coill (2002, p.567) view that NGOs marginally contribute to poverty reduction in Africa, but instead considerably weaken efforts of “the African people to emancipate themselves from economic, social and political oppression.”

As a complement to research on the political and social impacts of aid in the development studies literature, debates in the economics literature have attempted to quantify aid effects. Aid-sceptics highlight that the aid-growth relationship has not materialised, which signals a quintessential failure of aid to deliver on a core objective – economic growth (Easterly, 2002; Moyo, 2010). A recent meta-analysis of aid effectiveness instead posits that the ambiguous effects of aid on growth applies pre-2007, however after this period, there has been a convergence towards a positive assessment of the aid-growth relationship (Mekasha and Tarp, 2019).

Notwithstanding this, there are likely harmful effects as aid continues to be a constant and dominant feature in many developing countries. These harmful effects of aid resonate with arguments made by dependency theorists, and range from perverse incentives to Dutch disease effects. Though many agree on the potential harmful effects of aid, some authors have attributed these effects to deliberate actions as developed countries seek global influence through aid (Browne, 2006), while others have described some of the ills that result through otherwise well intentioned moral imperatives (Chang, 2008; Easterly, 2002). These arguments form part of the literature on the aid-curse.

The term aid-curse was born by applying Dutch disease concepts to the aid sector. Standard Dutch disease analysis as put forward by Corden and Neary posits that a boom in the extractive sector leads to a resource movement and spending effect in the economy and "resulting pressure towards de-industrialisation" (Corden and Neary, 1982 p.825).[3] Van Wijnbergen (1985; 1986) built on this work to conceptualise Dutch disease in relation to aid. In his 1985 paper, Van Wijnbergen argues that aid can lead to unwanted side effects such as upward pressures on the real exchange rate, increased labour costs in the tradeable sectors and reduced external competitiveness. Specific to the labour market, Van Wijnbergen (1985, p.5-7) postulates that the implication would be a reallocation of labour away from rural agriculture to urban services in the African context. In addition to this, increased labour costs in tradeable sectors would translate into reduced competitiveness and a

[3] In Corden and Neary's model, there are three sectors – two which trade at exogenously given world prices (the extractive sector and manufacturing sector) and a third non-tradeable services sector. With the resource movement effect, the boom in the extractive sector increases the marginal product of mobile factors in that sector and draws resources from the other two sectors giving rise to what the authors called "direct de-industrialisation" (Corden and Neary, 1982 p.827-830). At initial real exchange rates, there is excess demand for services as a result of the resource movement effect hence there must be an appreciation of the real exchange rate to restore equilibrium (Corden and Neary, 1982). If it is the case that the extractive sectors use relatively few resources that can be drawn from other parts of the economy and the resource movement effect is thus negligible, the transmission mechanism from extractive boom to economic impact is different. In this case, the higher real income from the boom leads to extra spending on non-tradeable services (via an income-effect) which raises their prices, causes a real appreciation of the exchange rate and further adjustments in the economy (Corden and Neary, 1982). This mechanism is what the authors term "a spending effect". The outcome is an appreciation of the real exchange rate. The effect on output in the non-tradeable services sectors is ambiguous as it declines with the resource movement effect and increases with the spending effect. The effect on the tradeable manufacturing sector is an unambiguous decline leading to de-industrialisation.

decline in exports as a consequence of higher aid. Van Wijnbergen (1986) reiterates the effects of aid on the exchange rate and external competitiveness in his 1986 paper, and further explores the heterogenous effects which result from different macroeconomic regimes.

There is a body of empirical literature that has attempted to assess the relationship between aid, the real exchange rate, and the impact on the manufacturing sector. Hussain et al. (2009) show that an aid surge was not associated with an increase in the real exchange rate in five African countries studied, but that countries struggled to absorb large aid inflows and such inflows were inflationary in some instances.[4] In contrast to Hussain et al. (2009), Rajan and Subramanian (2011) provide evidence that aid leads to an overvaluation of the real exchange rate, and through this mechanism, there are systematic adverse effects on a country's competitiveness, as both labour intensive and exporting industries grow relatively slower. In particular, the authors estimated that a one percentage point increase in the aid-to-GDP ratio was associated with a 0.2 to 0.3 percentage points decline in the share of manufacturing to GDP (Rajan and Subramanian, 2011 p.107). Specific to Sierra Leone, Kallon (2014) has shown that aid was not inversely related to growth; but the adverse effect on the real exchange rate lowered real incomes of cash-crop farmers, which in turn affects poverty levels in the country. In sum, such an aid curse outcome may result in recipient countries becoming more dependent on aid in the long run.

Apart from structural shifts in production, there are other manifestations of the aid-curse as summarised in Radelet (2006). Continued aid to a country may limit the efforts of the government to generate tax revenue as moral hazard sets in. There may also be a change in spending where the government spends very little on "donor priorities" such as health and education, unless incentivised to do so by counterpart commitments. It can also be argued that large flows to the government may encourage rent-seeking behaviour among political elites who compete for power and access to these funds. This impacts political institutions and governance within the

[4] Countries studied included Ethiopia, Ghana, Tanzania, Mozambique, and Uganda (Hussain et al., 2009).

administration as discussed above, but also inequality within the country as the gap widens between political elites and the rest of the population.

To conclude, though the arguments and analysis of this thesis focuses on the development sector (born out of aid), and its effects on the labour market; it remains that these arguments are one of many that relate to the developmental impacts of aid in countries like Sierra Leone.

1.2.3. Labour markets in developing countries

Labour markets in developing countries are often more complex than those in developed countries as a result of their structural features. They are characterised by large informal sectors, labour supply decisions that are made by households instead of individual workers, seasonality and holding multiple jobs, uncertainty stemming from uninsured risks, high transaction costs, imperfect information, imperfect enforcement of contracts and frictional employment protection legislation (Kaufman, 2007; Freeman, 2010; Frölich and Haile, 2011). Research on labour markets in developing countries has sought to understand the supply side, the demand side, and the functioning of labour markets.

On the supply side, the seminal works of Lewis' (1954) labour surplus model pioneered the study of labour supply in developing countries. Lewis posited that there was substantial unutilised labour in the traditional sector, which could raise output should it be reallocated to the non-traditional sector. Such arguments were well positioned within modernist theories of growth which were popular at the time, that is, growth driven by internal factors (Martinussen, 1997). Harris and Todaro (1970) also contributed significantly to the literature in the 1970s theorising a model to explain rural-urban migration and simultaneous high levels of urban unemployment, based on observations from the Kenyan labour market. Harris and Todaro's observation remain an occurrence in countries like Sierra Leone today.

Both Lewis (1954) and Harris and Todaro (1970) segmented the labour market by location; an act which has influenced many subsequent studies. Fields (2011) presents an overview of some of the theories used to analyse labour markets in both middle and low-income countries and shows that labour market segmentation has been a common denominator in the theories – be it segmentation by location, by formality, by skills or by sector. The latter of these two, segmentation by skills and sector, is used in this thesis.

More recently, studies seeking to understand labour supply in developing contexts have utilised experimental methods. From these papers, we have learnt that financial incentives increase the application pool (Dal Bó et al., 2013; Deserranno, 2019), may improve performance (Ashraf et al., 2014) or crowd out more prosocial applicants (Deserranno, 2019) who may opt for a philanthropic mission over financial gain (Serra et al., 2011). The evidence also suggest that skills training is likely to increase employment prospects and earnings at the individual level (Attanasio et al., 2011; Attanasio et al., 2017; Honorati, 2015; Maitra and Mani, 2017).

Though a vast share of the literature has emphasised the labour supply side, as Fox and Kaul (2018) note, issues of employment are likely symptomatic of wider structural economic problems, which in turn constrain labour demand and job creation by firms. Fields (2011) recognised this in his analysis, acknowledging that workers in poor countries want "good jobs" which are steady, secure and well-paid, but there are insufficient "good jobs" for those who are willing and capable.

The issue of labour demand and absorbing Africa's youths into the labour market has thus become an important topic for both researchers and policy makers. Evidence put forward in Pritchett (2001), Kingdon et al. (2005), Lahire et al. (2011) and Statistics Sierra Leone (SSL) (2015) show that growth in employment in Africa has not kept up with growth in school enrolment and entry into the labour market. In several African countries studied, growth in the labour force was at least four times as large (and even up to 29 times as large) as changes in wage employment (Fields, 2011). Little growth in employment opportunities can likely be attributed to macroeconomic factors that drive growth – and thus labour demand and aggregate employment. These factors include capital accumulation, a favourable business environment, intra-firm cooperation, value chains in the country, the experience and education of the owner/manager of the firm and public infrastructure (Straub, 2008; Nichter and Goldmark, 2009; Campbell, 2013; Tan et al., 2016).

The third area of enquiry in the literature brings labour demand and supply together and assesses the functioning of labour markets. An extensive body of research in the 2000s addresses wage differentials and employment based on formality, education and productivity in developing countries (Kingdon et al., 2005; Satchi and Temple, 2009; Rankin et al., 2010; Nordman et al., 2011; Falco et al., 2011; Teal, 2011b). Embedded in this literature, the role of labour market institutions such as employment protection legislation, trade unions and minimum wage legislation has also been addressed (Kugler, 2004; Freeman, 2010; Almeida and Aterido, 2011; Bhorat et al., 2015). The evidence from these studies is vast, but not conclusive. More recent literature on how labour markets function have addressed questions on search and matching by both firms and workers. These studies have shown that employment and matching can be facilitated by reducing search costs, especially for disadvantaged groups (Abebe et al., 2016) and by reducing information asymmetries between firms and workers (Abel et al., 2017; Bassi and Nansamba, 2017; Carranza et al., 2019).

Notwithstanding the large body of research, Schler et al. (2009) argue that the perspective of the researched is absent from the discourse as few studies have used methods to understand the beliefs held by labour market participants. This is a gap the thesis contributes to by using both quantitative and qualitative data to explore incentives, perceptions and choice in the labour market. Understanding how people in developing countries are working, why they have chosen a job, what beliefs they hold about the labour market and what skills they are acquiring on the supply side, complemented with how firms search in contexts of low trusts and patronage on the demand side; are imperative as we better understand human capital and employment, which are integral to growth and development.

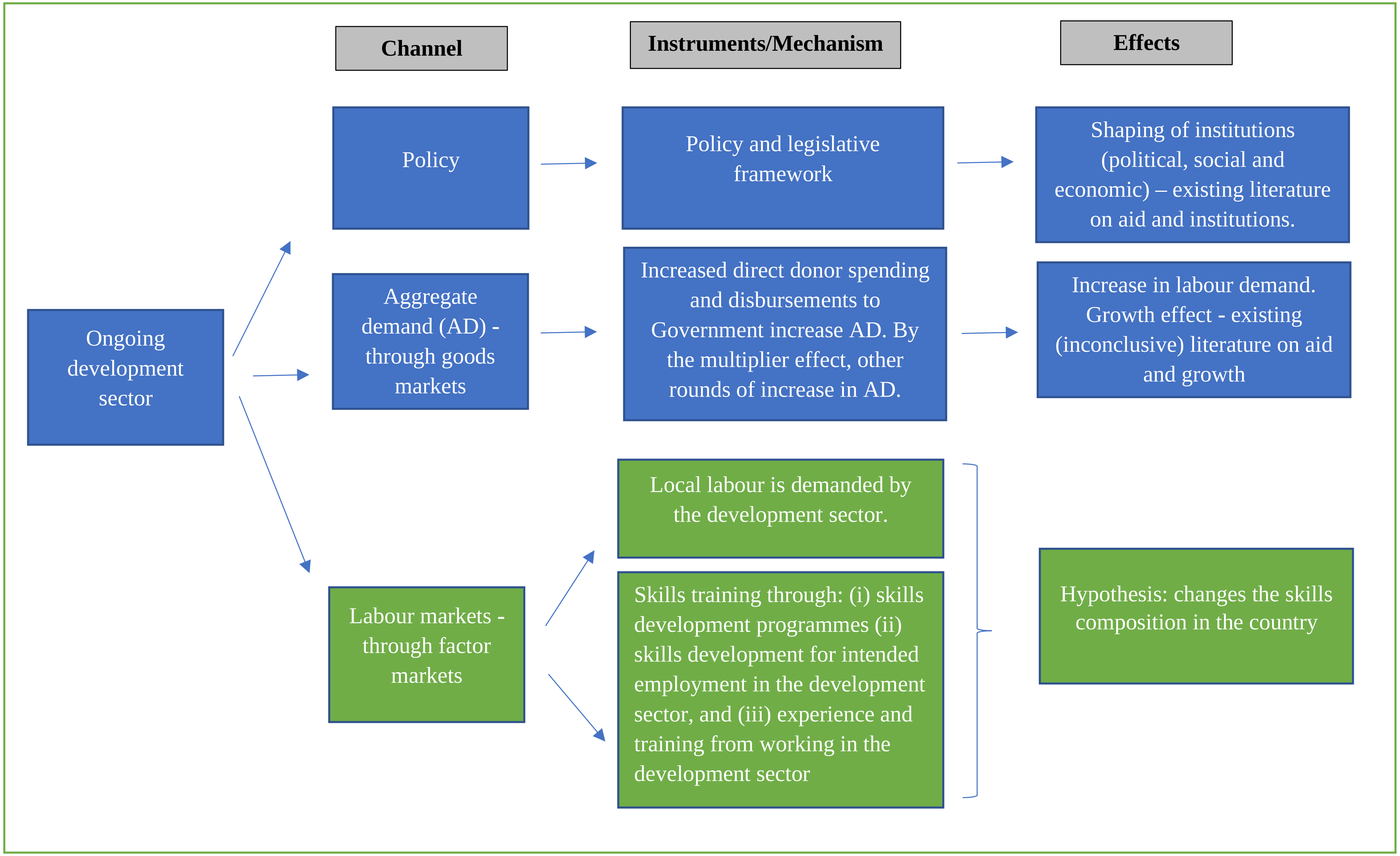
1.3. AID AND THE LABOUR MARKET – A CONCEPTUAL FRAMEWORK

The thesis takes a new approach, going beyond the policy and aggregate demand effects of aid commonly studied, and explores the effects on the labour market. Aid and development organisations directly influence the labour market as employers. For instance, one can imagine local staff that are hired at donor organisations, INGOs and NGOs. There is also a direct impact on the supply side of the labour market through the funding and implementation of various skills development programmes. This is shown in green in Figure 1.3 and forms the area of interrogation of the thesis. The focus is not on the flow of aid, but the ongoing presence of aid and the impact on institutions like the labour market. The main aim of the thesis will be to unpack the ways in which labour market actors respond to the continued presence of a large development sector. The hypothesis that follows is that the ongoing presence of the development sector changes/distorts the skills composition in the host-country.

The studies reviewed in section 1.2.2 imply that aid indirectly affects the labour market via spill-over effects into other sectors through aggregate demand and policy effects. For example, from the works of Hussain et al. (2009) and Rajan and Subramanian (2011) we would expect that a change in real exchange rates would have an impact on production in other sectors, which in turn affect labour demand. Moreover, as amply discussed by Easterly (2002), Browne (2006) and Moyo (2010), in order to access donor funding, the majority of LICs forego a degree of policy autonomy and are subject to reform policies/conditionalities under structural benchmarks which are linked to donor disbursements. Aid's influence via a policy channel works through the drafting, updating and refining of government policies, legislation and regulations. This in turn shapes political, social and economic institutions such as the labour market. At a micro-level, a policy of promoting local buy-in has resulted in aid increasing its influence in the NGO sector and on NGO workers (Hearn 2007; Mosse and Lewis 2006).

The aggregate demand and policy channels have been explored in previous literature. These are depicted in the conceptual framework in blue in Figure 1.3. The labour market as a channel in itself is explored in the rest of the thesis.

Figure 1.3: Aid and the labour market – a conceptual framework



1.4. THE THESIS OF THE THESIS AND CONTRIBUTION TO THE LITERATURE

The main contribution of the thesis is to show that the ongoing presence of a large donor sector changes the labour supply decision and the skills composition in the labour force. In essence, the aid sector has a distortionary effect on the labour market in small LIC countries.

The mechanisms through which this outcome materialises includes skills development programmes that are funded and/or implemented by development organisations, and individual decisions in the labour market which relate to skills development and sector choice. If the development sector is an attractive employment choice – either through aspirations or perceptions of fairness, some proportion of the labour force will attain skills for this sector. This is similar to a resource movement effect. However, it is not simply a movement of the current labour force from other sectors to the development sector, but a systematic phenomenon where the future labour force develops skills and is trained for employment in the development sector. In instances where donor organisations provide skills training, the development sector directly drives the skills composition.

Taken together, if skills attained for employment in development organisations or via training provided by development partners are not transferable to the private sector (for example manufacturing and industry, or other service sectors), this could potentially lead to slow/no growth in the private sector if companies are unable to access appropriate skills when needed, while simultaneously observing increases in the supply of skilled workers. The binding constraint is thus the transferability of skills. The long-run effects may be that some sectors are non-starters and growth may not be as high. If so, the aid-receiving country can become further dependent on development partners. Alternatively, should skills be useful to and can be easily absorbed by other sectors in the economy, the effect can be growth-enhancing.

The effects outlined above are arguably similar when any new sector enters an economy – for example natural resource extraction. This similarity is not contested, but it should be recognised that like an extractive sector, the sustained existence of the development sector affects the dynamics of the labour market.

In addition to an aid-labour market analysis, the thesis also elucidates important descriptive data on the Sierra Leonean labour market, an under-researched country in West Africa. In particular, the thesis will: (i) shed light on the Sierra Leonean labour market - the structure, how skilled labour behaves as it relates to search and matching, wage determination and employment; (ii) explore the role of perceptions in the labour supply decision; (iii) develop an understanding of how skilled workers transition from education to employment; (iv) explore the importance of the types of skills young people are trained in and (v) document the role of patronage in search and matching and the likely impacts of networked-search on the labour market. In each of these areas, the development sector surfaces as a key actor, though knowledge of these areas in themselves is important to inform the ongoing discussion on youth unemployment and underemployment in developing countries, and in particular, Sub-Saharan Africa.

1.5. SOURCES AND DATA COLLECTION

This section introduces Sierra Leone as a case study and describes how the primary and secondary data were collected. Analytical methods vary across the empirical chapters from quantitative methods such as regression analysis (chapters four and five) and mathematical formulations (informed by qualitative data – chapter five), to qualitative methods such as content analysis (chapter 3) and aspects of grounded theory (chapter five). The objective of this section is to provide an overview of the type of data and how they were collected, as the data used is common across the thesis. It therefore serves to aid the reader's understanding of the empirical chapters. The analytical methods specific to a given chapter are discussed within that chapter.

1.5.1. The case study

Sierra Leone is a small West African country, with a population of just over 7.5 million, GDP per capita of US$534 and a Human Development Index (HDI) ranking of 181 out of 189 countries (United Nations Development Programme, 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, has a young population and is largely agrarian in economic structure.

Specific to the research at hand, Sierra Leone is an appropriate case study for three reasons: (i) the feature of the labour market, (ii) the size of the development sector, and (iii) the increasing share of skilled workers entering the labour market. I briefly describe each of these three features in this subsection before discussing the data collection methods. A more comprehensive overview of the Sierra Leonean context is given in chapter two of the thesis.

Firstly, the nature of the Sierra Leonean labour market is characteristic of those of many developing countries with high levels of informality, uninsured risks and workers holding multiple jobs (Frölich and Haile, 2011). For example, based on the most recent labour force survey, there were 1.86 million employed in Sierra Leone in 2014, though the majority of the employed (90 percent) worked in the informal sector (SSL, 2015). There were an estimated 188,777 formal sector jobs, spread over self-employment (64,154) and wage employment (124,623). Secondly, the aid sector and development organisations have been a permanent feature in post-independence Sierra Leone and have expanded in the past two decades after the civil war ended in 2002. ODA was an estimated 130 percent of government spending and 25 percent of Gross National Income (GNI) in 2014 (World Bank, 2020). And thirdly, there has been a boom in the supply of university graduates in the past decade (Rogers, 2017), matched by a steady increase in government spending on tertiary education (World Bank, 2020).

Sierra Leone therefore provides an apt case study as the labour market is characteristic of other developing countries, there has been an expansion in the supply of skilled workers (at the university graduate level), and a large and persistent development sector exists.

1.5.2. The data

Data sources for the research can be broadly grouped into five types: (i) survey data, (ii) experimental data, (iii) qualitative primary data – namely interviews and focus group discussions, (iv) textual data – such as reports and policy papers and (v) secondary quantitative data.

The survey and experimental data and qualitative primary data were collected during fieldwork visits to Sierra Leone between August to December 2017, and a follow-up visit in August 2018.

Both these field visits were funded by the International Growth Centre (IGC) under the small projects grant window (project number 39408). The research grant was valued at £18,890 and was used to finance data collection (the survey, experimental games, interviews and focus group discussions), travel to/from and within Sierra Leone, local accommodation and other indirect research costs associated with the two field visits.

Other data were collected throughout the DPhil project from a mix of online sources and remote follow-up with research participants based in Sierra Leone. The data sources are described below.

1.5.2.1. Survey data

The main survey was conducted in August 2017, but the survey instrument was pre-tested on a selected group of recent university graduates during a field visit in March 2017 to ensure questions and measured constructs were interpreted as intended. Subsequent to this, changes were made before applying for ethical approval. The questionnaire was then successfully piloted in the week preceding the full roll-out of the survey.

The target population of the survey was undergraduate university students in the final year of their degree programmes, excluding those enrolled in medical training institutions or teachers' training colleges. One of the research objectives is to understand the factors influencing occupational choice among degree holders prior to sustained exposure to the labour market. Related to this, post graduate students were not included in the survey as they are more likely to have experience in the labour market, and often enrol in part-time study. In contrast, undergraduates often enrol directly from secondary school, and though some may have some internship experience, the majority (but not all) would have less than a year's experience in the formal labour market cumulatively.

Students enrolled at the College of Medicine and Allied Health Sciences (COMAHS) and various teacher-training colleges were excluded because most employment for these skills exists in the public sector at hospitals and government schools respectively. Hence, the study assumes that these students have less 'choice' in comparison to undergraduate students in other disciplines (for instance, law, politics, economics, finance, engineering), who can in theory work across sectors. It may be the case that experienced health and education workers switch to the private sector or take up administrative or policy roles in the public or development sector, but this is often later in their careers, whereas the study focuses on employment immediately after leaving university

Fourah Bay College (FBC) was selected as an appropriate study population from which the sample was drawn. FBC sits under the University of Sierra Leone (USL) and is the oldest and largest college in Sierra Leone. In the most recent study on the tertiary sector in Sierra Leone, it was estimated that almost 20 percent of all students in tertiary education and 30 percent of university students were enrolled at FBC (World Bank, 2013 p.11–12).[5] Importantly for this study, FBC provides population heterogeneity due to the variety of courses offered and the fact that it is located in the capital, Freetown. The student population of FBC is approximately 7,000, of which about 1,000 are final-year degree students. Appendix 1 discusses how the FBC sample can be used to make inferences about final-year undergraduates in Sierra Leone.

Data collection took place at the main campus located at Mount Aureol, Freetown. A stratified quasi-random sampling method was used. The first step of the sampling process was to acquire a comprehensive list of all students enrolled in the final year, which could be used as a sampling frame. Such a list was not available from the University Registrar, nor departmental heads. Lack of centralised information systems by higher education institutions in Sierra Leone was highlighted by the World Bank as a shortcoming in their 2013 study (World Bank, 2013 p.25), and persists today. Both the University Registrar and various departments possessed partial lists of registered students as many students do not officially register because of the costly burden of registration fees. Students attend lectures and classes, and write examinations all the same. At the end of final examinations, students then settle outstanding fees in order to access their transcripts and degree certificates. Taking the list of officially registered students would have resulted in a downward estimate of the FBC population, and biased sampling as the sample would have been drawn from those students financially better off or on Government scholarships.

[5] This estimate included two public and one private universities. Since then, two other universities have been established. Appendix 1 treats with this.

Instead, final-year class representatives from each course were contacted and asked for an estimate of the number of students enrolled in their respective courses. Initial numbers for sampling were calculated based on this. After a week of sampling, three random students who had been sampled were contacted from each course and asked how many students were enrolled in their course. If an estimate was significantly different, a fourth student was called and so forth. The average of these student estimates was used to proxy the population of final year students at FBC, which totalled 1060. This can be compared to the numbers graduated from the university in 2017, which was just over 1000 based on local media reports (Rogers, 2017).

Experimental methods were used to measure latent traits such as financial motivation, risk and time preferences and prosocial behaviour. In economics, experimental methods or lab-in-field experiments often take the form of "games" which are constructed to measure latent traits and tests theoretical predictions. Such games were included in the survey. The nature of these experimental methods thus influenced the sampling strategy of the survey. Many studies in social sciences utilise advertisements as a sampling strategy for attracting participants. However, advertising-based recruitment risked self-selection which would likely be correlated with variables of interest and/or the outcome of interest (Slonim et al., 2013). For example, respondents that are more prosocial may be more likely to respond to a call for participants because of their willingness to give of their time. This matters for the current study as prosociality is one of the traits of interest. To minimise this, elements of random sampling was employed.

Firstly, the population was stratified based on the four main faculties: Arts, Engineering, Pure and Applied Sciences and Social Sciences. This stratification by faculty is also used in parts of the analysis. Subsequent to stratification by faculty, teaching schedules were obtained from the class representatives. The principal investigator and enumeration team (comprising four enumerators) then approached congregating students either before or after their classes and randomly selected students from these groups. A standard script was read to the student explaining the aims of the research, the duration of the survey, and potential benefits from participating. The benefits included a monetary pay-out from the incentivised games and consideration for an internship from the incentivised occupational choice design. If a student declined, another student from the group was approached. A deliberate effort was made to ensure representation from each stratum, as well as across gender.

The pilot survey took place between 16th – 17th August, and the full survey between 19th – 31st August. This period covered the last teaching week of the term, and first week of final examinations. Hence, this was one of the busiest periods on campus. For the week of the survey during the examination period, examination schedules were publicly available on notice boards across the university and as before, enumerators targeted students based on this.

A total of 392 students were surveyed out of an estimated FBC final year population of 1060, a sampling fraction of 37 percent. Despite this high sampling fraction, there were some constraints to data collection. The rainy season in 2017 was very harsh, leading to the tragic mudslide on August 14th 2017. The pilot was initially to begin on this date but was delayed out of respect. The survey period could not be extended past August 31st as the majority of students were well into their examinations and daily response rates began to decline.

The questionnaire was arranged into six sections. Section one collected data on the respondents' education choices, section two on socio-demographic data, section three comprised five experimental games and also collected data on aspirations and desire for social status, section four focused on respondents' perceptions of the labour market, section five on employment experience, and section six comprised a short psychometric test. The last question of the survey asked respondents to state one sector for which they wished to be considered for an internship. The questionnaire was administered on smart devices using SurveyCTO.

The five experimental games which measure latent traits and the incentivised occupational choice question were included as part of a lab-in-field experimental approach. The experimental games measuring traits such as risk preferences, time preferences, prosocial behaviour, desire for social status and cognitive ability are described in more details in section 4.3.2 of chapter four when discussing how covariates in the regression model were measured. Chapter four is the only chapter which uses the data from the incentivised games. Methods pertaining to the incentivised occupational choice are described here as this data is used in the analyses in chapters three and four, and the discussions presented in chapter five. The data collected from the CVs of applicants to the incentivised internships are used in chapter five.

1.5.2.2. Incentivised occupational choice

One of the key objectives of the research (research question two under section 1.1) is to understand which sectors skilled jobseekers choose, and the reasons for their choice. In order to elicit this, four internships were created. Participants were asked to express a preference to be considered for an internship in the public sector, private sector, development sector or shadowing someone who had set up their own business (self-employment). The tenure of each internship was three months, and interns were given a stipend of SLL600,000 (US$80) per month. The internship stipend was fully funded by the International Growth Centre. At the time, interns under the nationally-run/UNDP-funded Graduate Internship Programme (GIP) were given a stipend of SLL500,000 (US$66.67), making the internship for this research attractive.

Respondents were told they would only be considered for one sector and were therefore required to name one preferred sector. Subsequent to the survey, respondents were asked to submit their CVs to the lead researcher. These were screened, and three CVs were sent to each participating employer based on the employer's demands. Internships are very desirable in Sierra Leone as many jobseekers struggle to obtain work experience, which is paradoxically demanded by most employers. The four interns were placed at Bollore (a large logistics company), Sierra Leone Grass Roots Agency (a small self-run NGO), Apex Bank (a government bank which oversees rural financial institutions) and the Centre for Coordination of Youth Activities (a large national NGO). Interns were placed between November 2017 and April 2018, depending on the employer's needs. The terms of reference entailed general entry-level administrative and operational tasks that are common across sectors, but specific to the company. In some instances, the interns travelled outside of Freetown with the organisation. Participants were made aware of potential rural travel at the time of submitting their CVs. In such cases, the organisation covered the cost of travel, accommodation and per-diem. The two interns at Sierra Leone Grass Roots Agency and the Centre for the Coordination of Youth Activities were retained (on temporary contracts) by these organisations.

1.5.2.3. Interviews and focus group discussions

Following the survey, a subset of 36 respondents from the sample of 392 were contacted and invited to take part in focus group discussions. Twenty-nine of those invited attended. This was complemented by another 24 respondents who did not form part of the survey but were contacted via snowball sampling based on previous links with the National Youth Commission (NAYCOM). NAYCOM offers entrepreneurship/business advice and support, and runs the national internship programme for Sierra Leonean youths.

Eleven focus group discussions with these 53 respondents were conducted between October and December 2017. These discussions centred on student experiences, skills, search experiences and challenges experienced in the labour market, and intended search strategies going forward – see Appendix 2.

After initial data analysis, it was revealed that the sample of focus group respondents was biased towards unemployed graduates. As such, a second round of focus group discussions were conducted in August 2018. At this time, four group discussions were organised with a total of 17 respondents, all of whom were employed. The focus group guide for these sets of discussions is given in Appendix 3. In addition to this, 30 respondents were contacted through snowball sampling and asked to submit data on their job search and employment experience anonymously online via an open-ended questionnaire administered via Survey Monkey. These questions were similar to the questions on search in Appendix 3.

On the demand side of the labour market, 46 interviews spanning 39 organisations were conducted with employers in the public, private and development sectors. Interviews were conducted between August and December 2017 in the capital Freetown. Interviews were semi-structured and tailored to the type of organisation, that is, private company, government, donor or NGO. An example of the interview protocol used to guide the conservation with a private sector company is given in Appendix 4.

The duration of an interview averaged one hour, and almost always took place at the office of the respondent. This was particularly insightful as I was able to observe the physical environment of several human resource (HR) managers and the process of job-search. For example, many HR managers displayed filing cabinets of CVs from applicants, and in some cases, the research interview was interrupted by a potential candidate arriving to submit their unsolicited CV. On many occasions, a follow-up interview with the same respondent was conducted; or a second or third person interviewed from the same organisation in order to record multiple perspectives. Some respondents also provided data based on their experience across several organisations – for example, the bank manager who simultaneously has a small business and lectures at the university. Though quotes have been anonymised throughout the analysis, a list of participating organisations by sector and industry is given in Appendix 5.

Similar to focus group discussions, some interviews were scheduled through snowballing. In other cases, I was able to utilise my networks from my time as an Overseas Development Institute (ODI) Fellow in Sierra Leone prior to the DPhil research. And finally, to broaden the scope of interviews, several respondents were 'cold called' based on contact details submitted to the Ministry of Trade and Industry and logged within the Ministry's database. As suggested in several methodological papers (see Guest et al. (2006) for example), recruitment of research participations for qualitative interviews and focus group discussion concluded when saturation was achieved and there was little variation in the additional data being collected.

1.5.2.4. Textual data

The textual data used in the analysis, in most cases, were either acquired during an interview or sourced online after being mentioned in an interview. This was complemented by targeted web-searches on the websites of the main development partners and key government ministries. In particular, regulations, policies and reports prepared by the Government of Sierra Leone (GoSL) are analysed. Similarly, with respect to donor organisations, NGOs and INGOs, reports and project/programmes documents, and online webpages are analysed.

A second source of textual data is CV data from graduates who applied to be considered for the internship as part of the experimental design explained in 1.5.2.2 above. The CV data offers rich qualitative data on the types and duration of employment held by graduates, and importantly for the analysis, the organisations employed in, which in turn gives an indication of the sector of employment.

Annual graduation publications by the University of Sierra Leone (USL) is the final main textual data used. Each year the USL publishes a list of all graduating students by qualification type. These reports were collected for the years 1985 to 2017, and the data extracted and coded.

1.5.2.5. Secondary quantitative data

The main source of secondary quantitative data is the World Bank Development Indicators, which pools data on various economic and social indicators. Data on aid, output (by sectors), jobs/employment and government spending are examples of data that have been extracted from the World Bank Development Indicators database for this research. I also utilise data from the 2014 labour force survey conducted by Statistic Sierra Leone and the World Bank, quantitative graduation data provided by the University of Sierra Leone, development financing flows from the Organisation of Economic Co-operation and Development (OECD), and data on graduates by skills type from the OECD World Indicators of Skills for Employment and the United Nations Educational Cultural and Scientific Organisation (UNESCO) Institute for Statistic.

All five sources above (1.5.2.1 - 1.5.2.5) have been analysed to describe the labour market in Sierra Leone in chapter two. Data from donor and government documents/online sources and the USL graduation publications inform chapter three. The survey and experimental data are primarily used in chapter four of the thesis as inputs into the regression models. Data from the focus group discussions, interviews and CV data ground the discussions in chapter five; and are illustrative of the theory developed in the chapter. The secondary quantitative data are used throughout the thesis to frame the discussion and to give an overview of the macroeconomy where appropriate.

1.5.2.6. Data limitations

With respective to the survey, interview and focus group data, a few limitations should be noted that relate to the sampling strategy discussed above. Firstly, the findings are limited to skilled labour, university graduates in this case; and not the traditionally termed unskilled labour. I do not discount the role of the unskilled in the development process, but instead focus on skilled labour given the recent push for skills development in developing countries.

Secondly, due to snowball sampling for some of the qualitative data, there may be higher levels of similarity among respondents. For example, one can argue that graduates who seek out opportunities and information from the National Youth Commission (NAYCOM) have common underlying traits, so the sample of focus group participants may be more homogeneous than desired. Similarly, if one human resource manager referred another for the employer interviewers, they may have strong ties and also share recruitment strategies with each other. Albeit, this is a common criticism of snowball sampling, yet the method remains commonplace in qualitative studies.

Thirdly, respondents decided to participate in the interviews and focus group discussions. It is possible that such an active decision to opt-in may be correlated with experiences in the labour market. I attempted to adjust for this by including respondents with a variety of employment experiences, and employers from across all sectors and industries.

For the secondary data, there are likely issues of data quality with the 2014 labour force survey as this was the first survey to be completed since 1984, and the first since the civil war ended in 2002. That said, it remains useful as it gives the most recent cross-sectional labour market data for Sierra Leone.

These limitations should be noted, but do not invalidate the findings. On the contrary, the study uses original quantitative data and rich qualitative data from the case study to provide new insights.

1.6. STRUCTURE OF THE THESIS

The thesis is structured around three main analytical chapters which appear as chapters three, four and five in the manuscript. Chapter two is largely descriptive as it gives an overview of the political and economic history of Sierra Leone, the proliferation of the development sector and subsequently maps out the labour market and skills development as a prelude to the analytical chapters. The effects of the development sector on skills development is assessed in the chapter three, while the effects of the development sector as body of employers are analysed in chapters four and five.

Chapter three presents one of the main arguments of the thesis, that is, a large and ongoing development sector changes the skills composition in the host-country, and thus the types of skills available to employers in the labour market. The main finding coming out of this chapter is that large flows of ODA and a significant development sector in Sierra Leone have been associated with a decline in the share of science, technology, engineering and mathematics (STEM) graduates, which can have potential negative effects on long-run growth and development. The present research does not employ econometric methods to make casual claims (as chapter three primarily uses qualitative data and descriptive quantitative data to motivate the arguments); but explores the mechanisms that can lead to such changes in the skills composition by studying the labour supply decision of skilled workers in relation to occupational choice (chapter four) and search and matching (chapter five).

The fourth chapter explores occupational choice and uses survey data to demonstrate an overwhelming preference for development sector jobs among skilled workers. A version of this chapter has been published as part of the UNU-WIDER working paper series – see Harris (2019). The fifth chapter employs mathematical modelling and utilises qualitative data to show the role the development sector plays in a highly nepotistic labour market where merit is often second to patronage in the recruitment process. Collectively, these two chapters suggest that the development sector has a role in skills development through either skills acquisition for employment in the sector, or through skills training while in employment in the development sector.

The analysis presented in chapters four and five are primarily on the supply side of the labour market, with some evidence of demand side factors to enrich the discussion. Emphasis on the supply side gives voice to jobseekers, which some have noted as being absent from the discourse on labour in Africa (Schler et al., 2009). Albeit, demand side constraints are important in matching markets – like the labour market. These are discussed in chapter two, and again in chapter five.

Chapter three discusses skills development programmes which affect all skills groups in the labour market. On the other hand, the evidence presented in chapters four and five are specific to the highest skilled in the labour market, that is university graduates. Chapter six consolidates the discussion and concludes. A summary of the three substantive analytical chapters is given below.

Chapter three "***Exploring skills development as a new channel of continued aid dependency"*** speaks to the dependency theory literature/aid effects literature, arguing that donor activities impact skills development in a way that may be harmful to growth. International organisations fund, support and/or implement skills development programmes, and promote policies that impact on skills development. These interventions change the skills composition in the host-country, and thus the types of skills available to employers in the labour market. This in turn has potential implications for long-run growth and development. These effects are explored by focusing on interventions targeting skills development at the Technical Vocational Education and Training (TVET) and university level in post-war Sierra Leone.

The data shows that post-war skills interventions have given rise to TVET training that has not been absorbed into the formal sector; and at the university level, to courses that are in higher demand by local and international non-governmental organisations and donor organisations, but not the formal private sector. Colloquially, respondents refer to these university courses as "NGO courses". The share of undergraduates and postgraduates from an "NGO course" rose from 5.7 to 12.3 percent and 18 to 26 percent respectively over the period 2006 to 2017. The shift towards development-type degrees has been associated with a decline in graduates with training in science, technology, engineering and maths (STEM) courses, although these skills are reported to be essential to the formal private sector. The growth impacts of the changing composition of skills of the labour force available to employers is contingent on the transferability of development sector-influenced skills to growth-producing sectors of the economy.

In chapter four "***Occupational choice of skilled workers in the presence of a large development sector"***, I explore the role of ability in sorting across sectors and the importance of perceptions in the employment decision-making process. The regression analysis employed in the chapter uses Multinomial Probit models, grounded in a Random Utility Models (RUMs) theoretical framework. In line with the overall thesis, the development sector is introduced as a 'third sector' in the occupational choice model; and is shown to be attractive to skilled jobseekers. A key descriptive finding is that the largest share of skilled jobseekers (44 percent) opt for early-career employment working for a donor organisation, INGO or NGO in the development sector.

Evaluating the margins of the Multinomial Probit model at the means of all covariates (see chapter for full details) and using relevant sampling weights (see Appendix 1), the predicted probability of choosing the public sector is 0.338, 0.123 for the private sector and 0.538 for the development sector for the average university graduate surveyed. Results point to an ability-effect or internal brain drain where higher ability workers are more likely to choose the development sector over other sectors. As ability increases by one unit above average (1.3 standard deviations), from a score of -0.0015 to 0.9985 on scale ranging from -4 to +4 which is used to measure ability, the probability of choosing the development sector increases by 0.076, while the likelihood of choosing the public sector reduces by 0.079. The results also show that skilled graduates sort by intrinsic motivations such as risk, time preferences, desired status and prosociality to some extent; but these motivations are secondary to jobseekers perceptions of various sectors. Again, the importance of the development sector is seen with respect to perceptions. As esteem of the development sector increases by one unit (or one standard deviation), from a score of zero to one on scale ranging from -4 to +4 which is used to measure perception, the likelihood of choosing the public sector and private sector reduces by 0.067 and 0.045 respectively.

Chapter five "***Who you know or what you know? Job search and matching in the presence of patronage"*** explores the role of networks in search and matching of university graduates. Networks are considered in relation to homophily which can arise from ethnic, political, institutional or social similarities. A simple analytical framework is developed which describes the search behaviour of firms and jobseekers in the context of networked-search and patronage. Research on networked-search has chiefly sought to understand the effects at the extensive margin (being made aware of vacancies through networks), while this chapter emphasises the importance of networks at the intensive margin (being employed because of membership to a network), and the effect this has on the functioning of the labour market.

The data shows that political and ethnic networks are the two most dominant in the Sierra Leonean labour market. Firms and jobseekers at the individual level, opt to utilise networks to maximise individual benefits, but this is costly to the labour market as a whole as the information set is distorted and/or reduced, and search is likely lower. Networked-search combined with patronage therefore introduces a friction into to the labour market by preventing employers and jobseekers from freely interacting with each other. Jobseekers respond to patronage by searching probabilistically and increasing applications to fairer sectors and organisations. In Sierra Leone, the perceived fairer sector is the development sector. Empirical data supports this perception as results show that candidates are more likely to be selected using visible signals like certification and grades in the development sector compared to other sectors. The outcome is higher demand for development sector jobs by workers who are not highly connected. The analysis for this chapter uses a mix of quantitative and qualitative data, which are represented in various tables and quotes, followed by Probit regression analysis.

CHAPTER 2 – SIERRA LEONE: AN OVERVIEW

This chapter provides an overview of the case study, Sierra Leone. The chapter focuses on: the recent political, economic and social history of the country; the proliferation of the development sector; the past and current trends in the labour market and the policy and legislative framework governing the labour market; and finally skills development which influences the labour force. This gives pertinent context-specific background before proceeding to the empirical analysis in chapters three, four and five.

2.1. A BRIEF SUMMARY OF THE POLITICAL, ECONOMIC AND SOCIAL HISTORY OF POST-INDEPENDENCE SIERRA LEONE

Sierra Leone is a small West African country, with a population of just over 7.5 million (World Bank, 2020). The capital, Freetown, was established as a trading post for the British, and later Freetown (and Sierra Leone more generally) became a destination for resettling former black slaves from the Americas and Europe in the late 1780s. Freetown, the Protectorate of Sierra Leone and later the Crown Colony of Sierra Leone, was under British control since that time until the country gained independence in 1961; and became a republic a decade later in 1971 (Harris, 2014). The change to a republican state brought with it an executive presidency and several constitutional changes.

The main opposition party, the Sierra Leone People's Party (SLPP), withdrew from the 1973 general elections amid harassment and violence against its candidates and the attempted assassination of the party's political leader (Harris, 2014 p.66). Four years later, the SLPP were able to compete in the 1977 elections and gained enough seats to sit as the main opposition party. Harris (2014) argues that the unexpected performance of the SLLP at the time, prompted the ruling All People's Congress (APC), led by Siaka Stevens, to call a referendum on the establishment of a one-party state in 1977. In 1978, Sierra Leone became a one-party state. This did not still tensions. Instead, there were reports of ethnic and political violence at the chiefdom level of administration, patronage and clientelism, embezzlement from public institutions, protests by various factions of society including agricultural associations and trade unionists, and student unrest (Harris, 2014). This in turn led to significant economic deterioration, declines in living standards and calls for constitutional reform. Stevens retired in 1985, paving the way for his chosen successor, Joseph Momoh.

After surviving an attempted coup in 1987, constitutional reform towards a multiparty system began in 1991 under President Momoh, but this was not fully implemented as the country soon broke into civil war; and would remain in conflict for a decade. The Revolutionary United Front (RUF) backed by Liberia's Charles Taylor, invaded Kailahun District, East Sierra Leone in 1991. A weak Sierra Leonean army coupled with little international support in the post-cold war era resulted in the country's inability to contain the invasion (Harris, 2014)

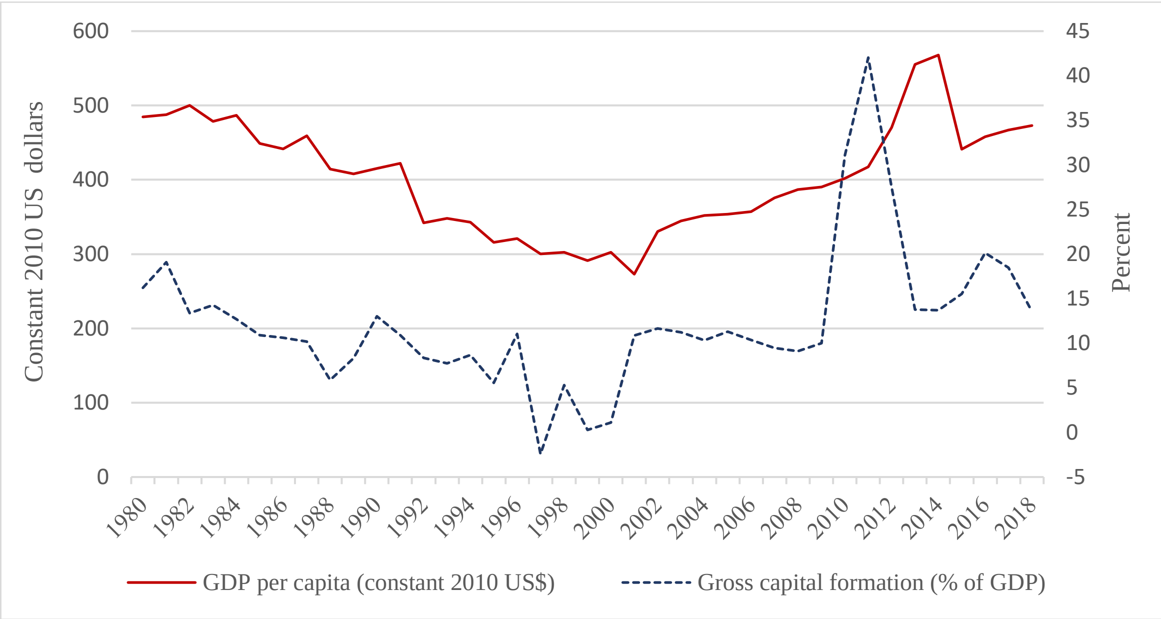
The 1990s was a tumultuous period in the country's history with several changes of Government. Valentine Strasser took over from Joseph Momoh in a 1992 coup, similarly Julius Maada Bio seized power from Strasser in 1996,[6] Tejan Kabbah was elected in 1996, deposed by the military and fled to Guinea in 1997 and then returned to Freetown in 1998 (Harris, 2014). During this time of political chaos, the war continued to rage in the rural areas, particularly affecting diamond-rich districts like Kono (Kaldor and Vincent, 2006). Diamonds were a cornerstone of the post-independence economy (contributing 70 – 80 percent of export earnings in the first decade of independence), they were a key part of the politicisation of resources under the Siaka Stevens' regime, and again became integral to the war (Harris, 2014 p.73). Diamonds were sold internationally, and the proceeds used to finance weapons for the RUF.

The RUF and Sierra Leonean Armed Forces Revolutionary Council (AFRC) briefly took control of the capital in 1999 but were soon driven out by the Economic Community of West African States

[6] Maada Bio was elected as President of Sierra Leone in 2018.

Monitoring Group (ECOMOG) armed forces (Kaldor and Vincent, 2006). UN troops arrived in 1999 to oversee peace agreements, followed by the British in 2000. Disarmament of the rebels began in 2001, and the war was finally declared over in January 2002. UN estimates suggest that the war claimed around 70,000 lives, and displaced 2.6 million people (Kaldor and Vincent, 2006 p.6). Economic effects were also pronounced as both GDP per capita and the capital stock steadily declined until the end of the war (Figure 2.1).

Figure 2.1: Changes in GDP per capita and gross capital formation 1980-2018



Source: World Development Indicators (World Bank, 2020)

From 2002, conditions in Sierra Leone began to improve with respect to political governance and the economy. Tejan Kabbah was re-elected in 2002 by a landslide, though there were concerns over irregularities with voter registration in Southern and Eastern districts (Harris, 2014). Albeit concerns, democracy began to blossom as the APC, People's Democratic Party (PDP), and the newly formed Peace and Liberation Party held seats in Parliament, in opposition to the ruling SLPP (Harris, 2014). The post-war Kabbah administration can be credited with establishing the Anti-Corruption Commission and giving power back to rural areas via decentralisation. Despite reform effort, corruption continued, leading DFID to temporarily withdraw funding in 2007, an election year (Harris, 2014). Barred from running again due to term limits, Kabbah did not lead his party to the polls in 2007. The APC emerged victorious under Ernest Bai Koroma, and was again re-elected in the 2012 election. The 2007-2012 APC term was associated with infrastructure development (in particular electricity), hope among Sierra Leoneans that the country would improve, and what Harris (2014, p.141) describes as a multipolar world with an increasing Chinese and Indian presence in the country. This period also saw a revival of the mining sector, which boosted both gross capital formation and GDP per capita (Figure 2.1).

Throughout the post-war period, the UN maintained peace – first with the United Nations Mission in Sierra Leone (UNAMISIL) until 2006, which was then replaced by the civilian mission – the United Nations Integrated Peacebuilding Office in Sierra Leone (UNIPSIL). UNIPSIL withdrew in 2014.

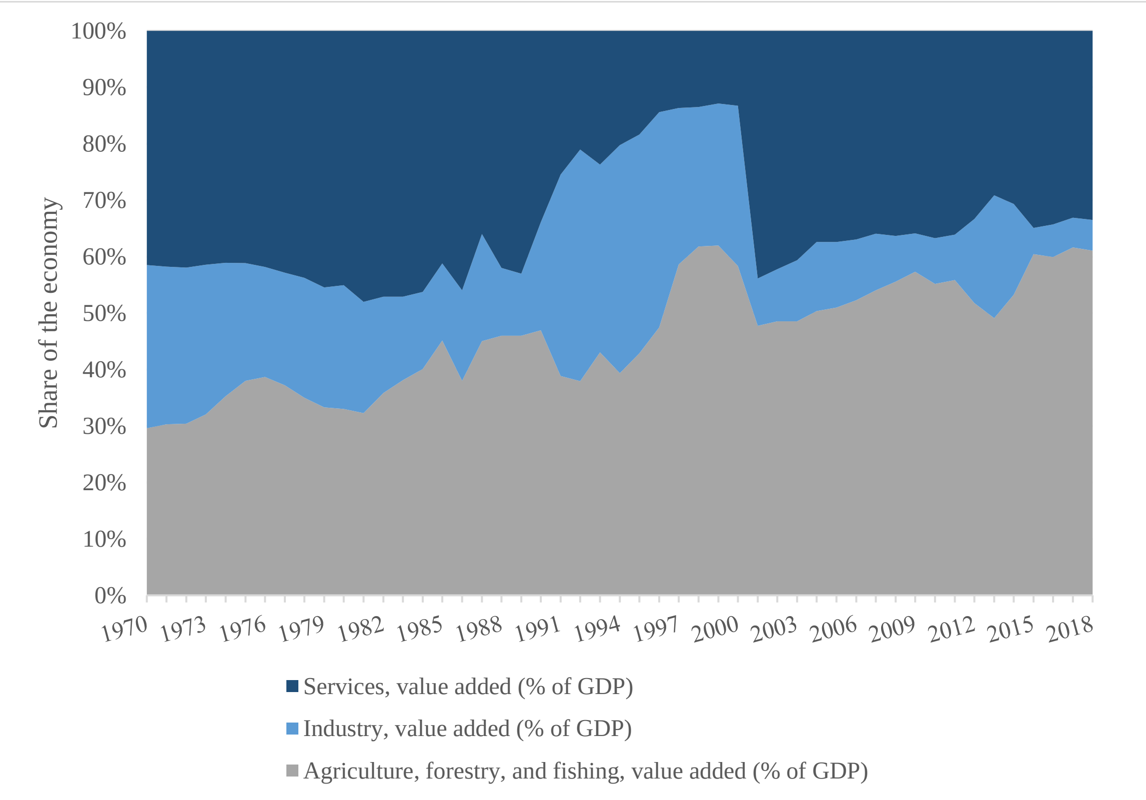
In 2014, the country's history was once again marked by crisis with the Ebola Disease Virus outbreak in Sierra Leone, Liberia and Guinea. The Centre for Disease Control and Prevention (CDC) estimates that between 2014 until the outbreak was contained and eliminated in 2016, 3,956 people died in Sierra Leone – about 35 percent of all the deaths from the virus reported across the three countries. The negative effects during the war were more prolonged, and arguably more persistent as damages to physical infrastructure, as well as disruptions to education, health, nutrition and the experience of physical and psychological trauma likely persist today.

Politically, Koroma's 2012-2018 administration was criticised for being slow to respond to the outbreak, and faced allegations of gross mismanagement of Ebola relief funds (DePinto, 2016). In addition to corruption allegations, the 2015 firing of the Vice President by the President (Associated Press, 2015), was debated and ultimately brought to the Supreme Court to determine if Koroma's actions were unconstitutional. The Court ruled in favour of Koroma, but amid poor reform performance, the Extended Credit Facility programme with the International Monetary Fund (IMF) was suspended in 2017 and most development partners simultaneously withdrew support just before the national elections. A new programme was agreed in 2018 with the new SLPP government (IMF, 2018). The current SLLP government led by Julius Maada Bio has been working to stabilise the economy, but high levels of inflation and rapid currency depreciation continue to be of concern (IMF, 2019).

There was a structural shift in the economy during the war as GDP transitioned away from a more diversified output mix to an economy where industry contributes a small share to GDP, with greater reliance on agriculture and services.[7]

Figure 2.2 shows the transition of the agriculture-industry-services mix from 39:36:25 percent of GDP at the beginning of the war in 1991, to 50:9:41 percent at the end of the war in 2002. Estimates for 2018 suggest an even further decline in industry (60:6:34 percent). The manufacturing sector in particular (which is included in measures of industry), has yet to recover from the war as shown in Table 2.1. Such a small contribution of manufacturing to growth, and the advent of technologies that change manufacturing processes and trade may imply that what author's like Baldwin and Forslid (2019, p.1) refer to as "the traditional manufacturing-led development journey" (that's is, agriculture to industry to services) may not materialise in Sierra Leone.

Figure 2.2: Changes in GDP composition and employment composition 1970-2018



Source: World Development Indicators (World Bank, 2020)

[7] Industry includes value added in mining, manufacturing, construction, electricity, water and gas as per World Bank definitions.

Table 2.1: Ten-year averages of manufacturing value added as a percentage of GDP 1971-2018

Ten-year period	1971-1980	1981-1990	1991-2000	2001-2010	2011-2018*
Manufacturing (% of GDP)	6.11	4.12	7.88	2.92	2.37

*2011-2018 reports an eight-year average (and not a ten-year average) due to data availability.

Source: Word Development Indicators (World Bank, 2020).

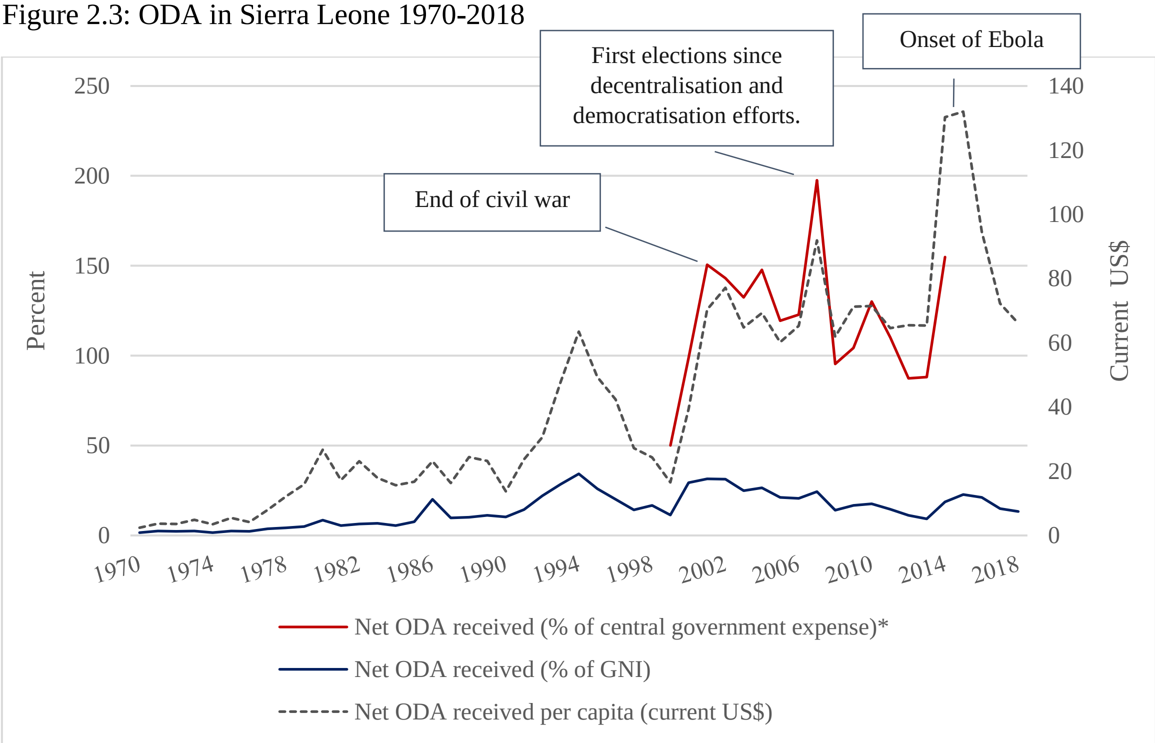
The structure of the economy shifted to rely relatively more on extractives after the iron-ore boom in 2012 (increasing from four percent in 2011 to 25 percent in 2013) but has since returned to being agriculture and services dominant. Sierra Leone experienced growth of 21.4 percent when the mining sector peaked, but no real change in employment in the sector. At its post-war peak in 2013, the mining sector only employed 1.5 percent of the labour force. This suggests that mining-led growth does not necessarily translate into mining sectors jobs. The agriculture sector employs the largest share of the labour force - 62 percent of employment in 2014, followed by the services sector - 33 percent of employment (SSL, 2015).

The dominance of the agriculture sector is likely to continue in post-war Sierra Leone, as this sector has been identified as the key driver for both economic growth and employment by both government in their Poverty Reduction Strategy Paper (PRSP); and donors alike who aim to promote green growth and sustainable development.

2.2. THE DEVELOPMENT SECTOR IN SIERRA LEONE

A commonality between the beginning of the post-war period in 2000, the transition to a democratically elected government after decentralisation efforts (Srivastava and Larizza, 2011) and the Ebola outbreak in 2014, is the notable international response and large inflows of aid. Though these periods were associated with peaks in aid inflows, the presence of the development sector has persisted throughout Sierra Leone’s post-independence history (Figure 2.3).

Figure 2.3: ODA in Sierra Leone 1970-2018



* Data for Net ODA received as a percentage of government expenses is only available for 2000-2015.
Source: Word Development Indicators (World Bank, 2020)

At the end of the war, large amounts of aid flowed to Sierra Leone to assist in nation rebuilding and recovery (Figure 2.3). Assistance was targeted at infrastructure projects, government ministries, the justice sector, and social services, to name a few (Kanyako, 2016). Kanyako (2016) argues that the government was unable to absorb such large inflows, which lead to the development of the NGO sector. The NGO sector in turn helped foster government accountability and democracy in the immediate post-war years. Estimates suggest that in the four years following the war, 26 percent of total support to the country was channelled through NGOs (Kanyako, 2016 p.27). NGOs are still a main (and well established) actor in the economic, political and social landscape of Sierra Leone. At the time of the data collection, the Government, donor community and various NGOs were working towards implementing the National Ebola Recovery Strategy 2015-2017.

The most recent publicly available NGO-specific data from Statistics Sierra Leone (SSL) indicate that 94 international NGOs and 223 national NGOs were operating in Sierra Leone in 2012 (SSL, 2013). The NGO sector employed an estimated 14,604 workers, of which 12,727 were local staff. Of this 5,585 were employed at INGOs. The 2013 SSL study does not include donor organisations, which play a key role in the development sector as an employer in itself, and also as a funder to INGOs, NGO and at times Government. The five key donor organisations interviewed for this research employed an average of 48 local staff. Extrapolating to the other donor organisations would imply at least another 1000 jobs in the development sector attributed to donor organisations.

Though the 2012 study is the most recent national data on NGOs, it does not capture the post-Ebola developments in the NGO sector. It is expected that the sector would have expanded during the Ebola response period, but the relative size between 2012 and post-Ebola years is unknown. The 2014 labour force survey estimates that 18,596 people were employed in the development sector (see Table 2.2). The difference between this estimate and the 14,604 estimated in the 2012 study may stem from expansion of the development sector with the Ebola outbreak in 2014, and/or the absence of donor organisation in the 2012 NGO survey, which was captured in the labour force survey.

2.3. THE LABOUR MARKET IN SIERRA LEONE

This section describes the labour market in Sierra Leone. I start by presenting an overview of the key actors in the labour market, and subsequently discuss labour demand, labour supply, wage determination for skilled workers, and the legislative framework and policy environment. The description of the Sierra Leonean labour market in this section draws on the 2014 labour market survey, interview and focus groups data collected for this study, policy documents and regulations.

As with any other labour market, the Sierra Leonean labour market comprises employers who demand labour, workers who supply their time and skills, policy makers who set the rules and regulations that govern the labour market, and various agents that facilitate matching in the labour market. More indirectly, there are various institutions which train the labour force and influence the supply side of the labour market. The growth in urban labour supply in the recent decades has also been influenced by reductions in mortality and rural-urban migration.

2.3.1. *An overview of the labour market*

The labour force was estimated at 1.96 million workers or 65 percent of the working-age population of three million (SSL, 2015). Of this, there were 1.86 million employed (Table 2.2). According to Statistics Sierra Leone estimates, over 35 percent of wage employment and over 88 percent of non-agricultural wage employment is informal (SSL 2015, p.11). This amounts to an estimated 188,777 formal sector jobs, spread over self-employment (64,154) and wage employment (124,623). Of formal employment, the government is the largest employer (39.4 percent), followed by the formal self-employed (34 percent), the wage-employed formal private sector (16.8 percent) and the development sector (9.9 percent).

Table 2.2: Employment by sector and contract type

	Self-employed	Wage employed	Unpaid Labour	Total	Sector share
Agriculture/fishing/forestry	1,037,359	9,150	97,217	1,143,726	0.615
Mining and extractives	1,432	12,579	1,151	15,162	0.008
Manufacturing/utilities	37,685	10,011	4,717	52,413	0.028
Construction	10,333	11,883	247	22,463	0.012
Services	485,164	122,542	18,131	625,837	0.337
Total (share of total)	1,571,973 (0.845)	166,164 (0.089)	121,463 (0.065)	1,859,601	
Formal Employment (share of total)	64,154 (0.03)	124,623 (0.07)	-	188,777	
Of which					
Formal self-employment				64,154	0.340
Formal Private sector wage-employment				31,643	0.168
Government employment				74,384	0.394
Development sector employment				18,596	0.099

Source: Own calculations based on data from SSL 2014 Labour Force Survey

Just over 50,000 jobs were held by those who have post-secondary qualification or higher (SSL, 2015). Of this, 22 percent were self-employed and 78 percent were wage employed. Seven percent of these jobs were in the agriculture and fisheries sector, one percent in mining and extractives, two percent in manufacturing, three percent in construction and 87 percent in services.

2.3.2. Labour demand

I assume that in most instances, labour demand is a derived demand across the three sectors I will evaluate, namely, the formal private sector, public sector and development sector. If there is increased demand for goods and services, an expansion in government spending or widening of the State, and an increase in development spending; then labour demand increases in the private sector, public sector or development sector accordingly. In addition to the usual derived demand, some organisations in the private sector demand labour (mainly interns) as part of their corporate social responsibility (CSR) policy, and in the development sector (particularly among NGOs) as an act of goodwill in an attempt to help unemployed youths within the local community.

The Government is the single largest employer in the formal sector in Sierra Leone, accounting for 39 percent of formal sector employment (Table 2.2). As at September 2017, an estimated 75,000 workers were on the Government payroll. This included employment in central government, local government, commissions, parastatals, sub-vented agencies, state-owned enterprises, the protective services, teaching and medical staff at public institutions.[8] Demand for new public-sector workers come with the roll-out of new policies or programmes which require additional administrative or technical staff. It is not uncommon for some public-sector positions to be donor funded.

At the time of the research fieldwork, there was a freeze on public sector hiring as the wage bill was an estimated two thirds of domestic revenue collections.[9] When there is a boost in public sector employment, two types of workers are recruited from the pool of university graduates: civil servants and contract staff. Civil servants are recruited by the Public Service Commission (PSC) and employed on permanent contracts. The Human Resource Management Office (HMRO) inducts

[8] Interviewee 8 (September 11, 2017)
[9] Interviewee 11 (September 11, 2017)

civil servants and assigns grades to them, based on which the baseline salary is determined. Contract staff can be hired directly by the respective Ministry, are not allocated a civil servant grade, and negotiate their wages each time their contracts are renewed. There is large disparity between the base salaries of civil servants and contract workers. The difference can be as large as tenfold for two workers with the same qualifications and experience.

Formal private sector employment stood at 16.8 percent of the labour force (Table 2.2). The share of those employed in the formal private sector is constrained by limited job creation. Of the 17 private sector companies interviewed for this study, average direct employment was 125 people and the median was 54. The largest company interviewed had a workforce of 556 employees and the smallest had two employees. In addition to direct employment, some companies also reported indirect employment referring to employees who work at the company but are hired through a contracting agent and are therefore excluded from the organisation's official payroll data. For example, one of the companies interviewed hired 395 direct staff, but through contracts, had an additional 1000 sales agents. On average, about four permanent jobs would arise in a given year for skilled workers across the 17 companies interviewed. These vacancies mainly resulted from death or retirement of existing staff, or in the few instances where a staff member voluntarily left. The maximum reported new permanent staff recruitment among respondents was 15 staff members by a commercial bank and 100 new casual staff by a mining company.

The factors affecting (or limiting in this case) labour demand in the formal private sector can be attributed to constraints in both the product and factor markets, which in turn impact on operating costs and profitability.

In the product market, respondents cited that import liberalisation policies that lead to more imports had resulted in lower demand for some locally produced goods, which in turn limits output and employment, ceteris paribus. A second factor in the product market relate to consumers and the ability for sales to be converted into revenue. Interview data suggest that customers (both firms and households) may commission products or services and then fail to make payments. The Government has also introduced challenges by delaying payments to private companies. Given that the State is a significant economic actor, macro-fiscal challenges spill-over to the private sector. As a result of non-payment/delayed payments, firms reported that they limit their activities (and employment) in order to minimise financial risks. This creates a deadweight loss as output and employment are below optimal levels.

In the factor market, high electricity costs limit investment in capital goods. To the extent that labour is a complementary factor of production, the demand for labour will be lower. Further to this, high electricity costs reduces the competitive advantage of some manufacturing firms and increases the price of their products relative to imports. Secondly, when labour is demanded, some employers reported a skills mismatch and issues with the quality of skills available. For instance, some companies reported a skills gap for a selection of technical skills related to engineering and automation. The issue of skills mismatch is discussed in more details in section 2.4 of this chapter and again in chapter three.

Finally, labour demand in the development sector. Based on the 2014 labour force survey data, 18,596 were employed in the development sector, that is, 10 percent of formal sector employment or 15 percent or formal wage-employment. The development sector is also the third biggest employer of skilled labour. According to Statistics Sierra Leone (2015, p.25), for those with tertiary education, the public sector employs around 44 percent followed by the private sector (30 percent) and the development sector (10 percent).

Demand by employers in the development sector is closely linked to development spending. From the data, most development organisations employed local staff on contracts linked to specific projects/programmes. The implication of this is that development sector jobs, in the aggregate, continue over time as development spending continues, however, at the job-level there is contract volatility as programmes/projects are often short-term.

2.3.3. Labour supply

On the other side, labour supply comprises those in the labour force who are willing and able to supply their time for paid/unpaid work. The labour force was estimated at 1.96 million workers or

65 percent of the working-age population of three million (SSL, 2015). The working-age population is predominantly unskilled, though this group has the lowest unemployment rate according to the International Labour Organisation (ILO) definitions (Table 2.3). Of the working-age population, 55.2 percent never attended school and 7.6 percent attended but did not complete primary school. Fourteen percent, 12.7 percent, 8.3 percent and 2.4 percent completed primary, lower secondary, upper secondary and post-secondary respectively.

In a bid to boost skills development, education expenditure has been increasing. This almost doubled from 19.9 percent of government spending in 2017 to 32.5 percent in 2018 as the government rolled out its free quality education initiative (World Bank, 2020). Several development partners also contribute to skills training as discussed in chapter 3. The national and international push for skills development has led to an increase in the number of skilled workers entering the workforce, though the majority of the workforce is still unskilled. Based on the labour force survey, the skilled workforce with some level of post-secondary qualification was estimated at just over 50,000 people, or about three percent of the labour force. Furthermore, approximately over 3000 graduates with an undergraduate degree will enter the labour market annually based on 2017 data.[10]

There has been increased government spending at the tertiary level in the past decade (Figure 2.5), which has contributed to more graduates entering the labour market. The number of graduates with certificates, diplomas, undergraduate and postgraduate degrees from the University of Sierra Leone nearly doubled from 1,653 graduates in 2007 to 3,255 in 2017. Despite fluctuations over the period, there was an increase in graduates from all disciplines (Arts, Education, Health, Social Sciences and STEM), but the overall increase was largely driven by the Social Sciences (Table 2.4).

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[10] This is an estimate based on the number of graduates from the University of Sierra Leone, adjusted for graduates from Njala and University of Makeni – see Appendix 1.

Table 2.3: Selected Labour Market Aggregates*

	Employed (%)	Unemp-loyed (ILO, %)	Unemp-loyed (Broad, %)	Working age population	Labour force (ILO)	Labour force Participation (ILO, %)	Unemploy-ment rate (ILO, %)
Never went to school	76.1	2.1	9.1	1,660,372	1,297,325	78.1	2.6
Incomplete primary	50.1	3.4	10.6	227,620	121,889	53.5	6.4
Completed primary	41.5	2.8	7.4	421,769	186,606	44.2	6.3
Completed lower secondary	42.2	2.9	7.2	382,090	172,534	45.2	6.5
Completed upper secondary	43.7	5.1	11.9	250,002	121,885	48.8	10.5
Technical degrees and certificates	74.2	9.8	15.5	50,167	42,146	84.0	11.7
Tertiary degrees	75.1	8.2	11.6	17,451	14,527	83.2	9.8
Total				**3,009,471**	**1,956,912**		

*ILO in the table refers to ILO definitions for various measures. Unemployed ILO = unemployed/working age population, while Unemployed Broad = unemployed/workforce

Source: Adapted from SSL (2015 p.16) which uses SSL data from the 2014 labour force survey

Table 2.4: Trends in University of Sierra Leone graduates by discipline 2007-2017

	Year										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Arts	390	449	451	413	428	455	528	523	556	689	550
Education	112	127	131	150	212	111	41	187	118	130	125
Health	264	292	315	249	202	255	281	221	366	294	202
Social Sciences	779	1153	996	1350	1215	1244	1467	1329	1197	1734	2224
STEM	108	201	162	126	114	218	268	143	208	124	154
of which Engineering	56	127	84	45	59	66	111	58	71	81	80
IT	30	47	49	61	27	45	50	31	106	17	43
Pure and Applied Sciences	22	27	29	20	28	107	107	54	31	26	31
Total	**1653**	**2222**	**2055**	**2288**	**2171**	**2283**	**2585**	**2403**	**2445**	**2971**	**3255**

Data source: Graduation booklet publication (University of Sierra Leone).

However, the increased supply of skilled workers has not been associated with growth in employment as expected. Labour force participation is highest for skilled workers, but they also face higher levels of unemployment, and experience underemployment (Table 2.3). This finding is similar to neighbouring The Gambia were educated youths are less likely to be employed in comparison to uneducated youths (Lahire et al., 2011). In Sierra Leone, one reason for this is likely the demand side factors discussed in 2.3.2. Another reason is the quality and types of skills that are held by the workforce. This is discussed in more detail in section 2.4 and forms the main area of enquiry in chapter three

2.3.4. Employment of skilled workers

Although education increases the chances of gaining employment; underemployment (measured by hours worked that is below the desired level) is highest among those in the capital Freetown, youths, men and tertiary degree holders (SSL 2015, p.9). Forty-one percent of degree holders were underemployed, indicating the inability of the labour market to absorb skilled workers (SSL 2015, p.27). This compares to a national underemployment rate of 30.9 percent. In the capital Freetown, urban underemployment peaks at 51.1 percent, and the rate is highest among educated males (SSL, 2015 p.28).

The primary data collected during fieldwork is consistent with this, as the majority of respondents in this study were either unemployed, underemployed or working part-time jobs despite their university qualifications. It is not uncommon for a university graduate to be employed as a barber, plumber, electrician, hairdresser, causal enumerator, or part-time teacher. This stems from a shortage of employment opportunities, as the majority of the private sector comprises small businesses that cannot afford a large workforce. Coupled with this, though the skilled labour force has been expanding, several employers do not believe graduates are suitably skilled.

2.3.5. Wage determination for skilled workers

There are significant differences in wages both across and between sectors. This likely confounds estimation of a simple Mincerian equation which aims to explain wage income as a function of schooling and labour market experience. This is because the wage rate not only varies by experience and education, but by sector, type of contract and various company allowances (both monetary and in-kind). Some of these allowances are predictable and given on a monthly basis, while others may be given as one-off lump-sums. Table 2.5 gives a summary of the spread of baseline wages (excluding allowances) across sectors.[11]

The largest spread exists in the development sector as salaries vary significantly between local NGOs and donor organisations. Private sector companies interviewed had the smallest spread of wages. This may be because some companies in the private sector (especially in financial services) benchmark their wages against other companies. The spread observed in the public sector illustrates the difference between civil servant salaries and local technical assistance/contract staff as described in section 2.3.2. The minimum entry-level wages offered reported in Table 2.5 are all in excess of the statutory minimum wage of SLL500,000 (US$66.67 based on 2017 average exchange rates), though interns are likely to be paid the minimum wage.

Table 2.5: Summary of monthly baseline salary offered in each sector in US$[12]

Sector	Minimum reported baseline salary offered	Maximum reported baseline salary	Range
Private sector	$173.33	$466.67	$293.34
Public sector	$120.00	$653.33	$533.33
Development sector	$100.00	$1000.00	$900.00

Data source: Interviews with 46 employers, August – December 2017

In 1997, a statutory monthly minimum wage was set at SLL21,000 (US$21.40 at the time). This quickly became out-dated as Sierra Leone experienced inflation and exchange rate depreciation over the years. In 2015, this minimum was equal to just over US$4 per month. At this time, an unskilled government worker earned between SLL250,000 – 300,000 (US$50-US$60) per month and an entry-level skilled civil servant with a university degree had a baseline salary of about

[11] Employers were less forth coming with precise data on allowances. As such, only estimates baseline wages are presented in the table.
[12] A modified version of this table appears in Harris (2020, p.7).

SLL900,000 (US$150).[13] The minimum wage for Government workers increased to SLL500,000 (US$100) in 2015 in the government budget statement. This benefits unskilled workers, while reducing wage differentials between the skilled and unskilled. The private sector soon followed, but there are instances where some workers are paid below this.[14] At the time of the study in 2017, the US dollar value of the 2015 minimum wage had declined to US$66.67, though the Leone amount was unchanged.

For many civil servants, allowances exceed the current baseline salary. For a grade seven civil servant, the entry grade for most degree holders, the starting salary is SLL900,000 (US$120 in 2017). For the same grade, the fuel allowance in 2017 was 45 litres per week, once evidence of access to a vehicle could be provided. It is common practice to cash in these fuel vouchers which were estimated to be valued between SLL1.2 to 1.3 million (US$160 -US$173) depending on the fuel station. This single allowance is 133 percent of the baseline salary. In addition to this, civil servants also receive mobile vouchers for telephone calls, and depending on the level, some receive a housing allowance. For many civil servants, the fuel allowance is implicitly considered part of their monetary salary as the value is relatively large. The removal of the fuel subsidy in 2016 led to an increase in fuel prices at the pump, which de facto increased the nominal salary of civil servants.

In addition to civil servants, there are also local technical assistance staff (colloquially called contract staff) within government. These contracts can be financed by either a donor organisation or the government, and salaries can range from the same level of a grade seven entry-level civil servant to US$650 per month. Experienced contract staff at higher levels may earn up to US$5000, and still benefit from the usual allowances.[15]

Based on data from private companies interviewed, salaries range from as low as SLL1.5 to two million (US$200 – US$267) in the banking sector, to an upper-range of SLL three to 3.5 million (US$400 – US$467) in the mining sector or at an engineering company. This implicitly suggests a

[13] Interviewee 11 (September 11, 2017)
[14] Interviewee 17 (September 18, 2017)
[15] Interviewee 8 (September 11, 2017)

higher return to engineering as a discipline. In one of the big telecommunications companies all staff entering at the same level would be paid the same base salary, but the allowances would vary by discipline as engineers for example, would be required to conduct more site visits.[16] Similar sentiments were expressed by an oil marketing company, with the added complexity that those on permanent contracts were paid more than those on temporary contracts.[17] The lowest salary reported for an entry-level university graduate in the private sector was SLL1.3 million (US$173) by a telecommunication company and logistics company. In the private sector, it is common to receive rent, transport, medical and leave allowances. These vary by sector (a percentage of the baseline salary for example); and are documented in the respective industry gazettes.[18]

In the development sector (from the organisations interviewed), salaries range from SLL0.75 to 7.5 million (US$100 – US$1000) depending on if the position is at a local NGO or an international donor organisation. International NGOs fall in the middle of the two extremes. With NGOs, project staff are often paid more than full-time staff; but contracts of project staff are subject to project funding. The higher remuneration is thus associated with higher risks. The majority of NGOs reported that salary differences arose because of experience and tenure, rather than by the degree subject. Allowances are yet again a feature of remuneration in this sector, though there are no gazettes setting out which benefits should be mandatory.

Based on the discussion above, it is evident that allowances form a significant part of the salary structure. This arises for several reasons. First, certain types of fringe benefits (for example rent allowances) are tax deductible across all employment sectors which encourage more remuneration through allowances. Second, instability of donor funding in the development sector leads to large one-off lumpsums to staff in times of a funding boom rather than high baseline salaries. And third, private sector workers and their trade union representatives lobby for allowances as these are more likely to increase with inflation in comparison to baseline salaries.

[16] Interviewee 32 (October 3, 2017)
[17] Interviewee 40 (October 13, 2017)
[18] These Gazettes were made available in hard copy by the Ministry of Labour and Social Security.

The qualitative data (both employer interviews and focus group discussions with jobseekers) suggests that there is information asymmetry as jobseekers are not aware of the salary package prior to an offer being made, save for international organisations that publish compensation as a matter of transparency. One interviewee from the private sector remarked that the interview is used to determine the range within which the employee's salary will lie. The implication is that in most instances, workers apply for jobs without knowing the specific wage rate.

Finally, many workers (including university graduates) willingly accept lower wages and/or "volunteer" for a small stipend or without payment because opportunities are sparse. Colloquially, it is said that *"if something gives half a loaf you accept that first."*[19] This reveals a price dimension to underemployment. This is in addition to the quantity-side discussed in section 2.3.4, where it was noted that 30.9 percent of employees work less hours than desired.

2.3.6. Labour market institutions, policy, and legislative framework

The majority of laws related to the labour market on employment, trade unions, pensions, forced labour and employee compensation were set in the early 1960s in the lead up to, and just after independence. There were small amendments to these Acts during the 1960s and 1970s, and to the statutory minimum wage in in 1997. Among the pre-war legislation, the Regulation of Wages and Industrial Relations Act 1971 is one that is still widely applied as this act established the Joint Consultative Committee (JCC). The JCC is a tripartite group comprising the Government, the employed (represented by the Sierra Leone Labour Congress (SLLC) or specific union representatives) and employers (represented by the Sierra Leone Employers Federation (SLEF) and companies). The JCC meet to discuss wages, labour laws and regulations, or to proposed labour market policies.

[19] Interviewee 19 (September 19, 2017)

In the post-war years, legislation has centred on national insurance and social security, state pension, child labour, and more recently, establishing a national youth service. The latter comes as a response to high youth unemployment and the risk of conflict which can result from this.[20]

Lack of continuous labour reform has resulted in the majority of laws becoming severely outdated. In a review of the existing legislation, the ILO (2013) identified nine main areas of labour regulations that are in need of reform. These include: freedom of association, collective bargaining, dispute resolution, equal opportunity, forced labour, minimum wage-fixing, occupational safety and health, workers' compensation and termination of employment protections (ILO, 2013 p.v). This review led to the establishment of a technical committee to propose a new comprehensive legislation, the fifth of its kind, which was still being undertaken at the time of the study.[21]

There are also industry-specific gazettes which sets out industry-specific regulations. Collective bargaining is done based on these industry-specific gazettes. The terms and conditions in the gazettes are agreed by trade group councils for each sector, which are made up of employers, union representations and Government. These gazettes appear to be utilised significantly more than the other labour laws, and various companies often referred to the gazette specific to their industry during interviews. The regulations set out in the Gazettes apply to workers below supervisory level, and not supervisors and managers. This implies that the majority of the highly educated/skilled workforce is not covered. There is a new draft legislation which seeks to correct this, as many workers have supervisor titles, but no real decision-making power.

Another objective of the new legislation is to standardise certain terms and conditions across industries. For example, each industry gazette sets out sick leave, annual leave allowance, overtime rates, union facilities, medical provision and the severance package that is due to the worker if they are retired. The latter is one of the main employment protection legislation (EPL) that exist in the

[20] Interviewee 3 (August 18, 2017)
[21] Other reviews have taken place in 1993, 1996, 2009 and 2010/2011 (ILO, 2013). In each case a draft was produced but the legislation was not passed.

country. A second key EPL is that the majority of contract for jobs in the public and private sector (but not development sector) are permanent and in perpetuity.

According to various informants, the new law will standardise maternity and paternity benefits and health and safety provisions across sectors; and will extend the reach to include mid-level management and not just those below supervisory level as in the current legislation. Several informants noted that the first two key changes where based on ILO conventions, specifically the recent push to ensure decent work for all. The third change aims to ensure consistency with the constitution and allow freedom of association (with trade unions) for all workers.

In the policy space, the Ministry of Labour and Social Security (MLSS), in collaboration with the ILO and the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), launched the National Employment Policy, Strategy and Implementation Plan (NEPIP) 2015 - 2018. The NEPIP is the first employment policy produced by Government; and aims to promote “inclusive and job-rich growth through productive employment and decent work”. Though the document has been embraced as a Government policy, it was written by an ILO consultant, funded by the ILO and GIZ; and framed within the ILO’s decent work agenda and United Nations Development Assistance Framework’s (UNDAF) emphasis on self-employment and technical and vocational skills development. This is a clear example of donor influence in the labour policy space.

The policy aims to address high unemployment and underemployment amoung youth (defined as those between ages 15 to 35), gender imbalances in the labour market, low job creation in the formal sector, poor health and safety practices, child labour, skills training and the short supply of technical and entrepreneurial skills (GoSL, 2015 p.5); while recognising that all efforts require a strong macroeconomic framework that promotes growth. The policy is aligned with Pillar 5: Labour and Employment in the 2012-2017 Poverty Reduction Strategy Paper (PRSP), the Agenda for Prosperity (AfP). Implementing the labour policy will cost an estimated US$104.56 million, of which the donor partners were intended to contribute US$47.74 million, GoSL to contribute US$3.06 million, and the balance of US$53.76 remains a funding gap (GoSL 2015, p.21). As at end 2018, the policy had not been fully implemented.

Government credibility is low as several informants displayed little confidence that labour and employment were indeed priorities. Pillar 5 on labour and employment was allocated a mere three pages in the 2012-2017 PRSP, with a very scant outline of the strategy. Interviewees reported that the Ministry of Labour was not involved in the preparation of pillar 5 of the PRSP, but a consultant was enlisted to the Ministry of Finance (MOF) to write the labour section of the document, which the MLSS then commented on. This contrasts the NEPIP which was led by the MLSS, ILO and GIZ, with little involvement/input from central government.

Another important development in the labour market is the recent passing of Local Content Agency Act 2016, which gives priority to local hires (among other local inputs) over foreign staff. This was a joint effort by the Local Content Unit and State House, with input from the mining sector. MOF and MLSS had little involvement in this.

From the evidence, there does not seem to be a unified approach to labour market issues in Sierra Leone. The ILO recognised this in their 2013 issue paper, and as such, see it as one of their (ILO) roles to help Government to coordinate the reform process, establish priority areas and timeframes, work with different stakeholders in the drafting process, and ensure follow-through at the parliamentary level (ILO 2013, p.26-28).

Similar to the ILO, other actors in the development sector also influence government policy via research, policy guidance, funding or advocacy, and labour demand in other sectors through private sector development policies. In response to issues of youth unemployment, a collection of donors in 2010 penned the "Joint Response to Youth Employment" for the period 2010-2012. The donors who supported this initiative include the UN, Federal Ministry of Economic Cooperation and Development (BMZ) and managed through GIZ, the World Bank and the European Union (EU). Interventions were designed to fit into the following components: (i) labour intensive public works programmes, (ii) private sector and agro-business jobs, (iii) skills development and employment support, (iv) youth empowerment, (v) research on the situation of youth and (vi) sector planning and coordination. The document notes that the ultimate goal is to "promote sustainable long-term development that sustains productive employment" (UN, German Technical Cooperation Agency and World Bank, 2010 p.2). Subsequent to this, there have been several other instances of policy engagement and programme implementation targeting skills development.

2.4. SKILLS DEVELOPMENT IN SIERRA LEONE - WHAT DOES IT MEAN?

Sierra Leone operates under a 6-3-4-4 system, after phasing out the sixth-form system inherited from colonial times (Ministry of Education Science and Technology, 2018). Under the system, six years is spent in primary school, three in junior secondary, four in upper secondary and the final four years as a university undergraduate. Alternatively, students may spend three years at a teachers' training college, or two years at a polytechnic leading to a higher national diploma (Ministry of Education Science and Technology, 2018). The system was designed to streamline students to either an academic or vocational path after junior secondary school (Figure 2.4).

The higher education sector in Sierra Leone, though small, thrived up until the 1970s. Until then, Fourah Bay College (FBC) was recognised as one of the premier tertiary education intuitions in West Africa (World Bank, 2013). Many Sierra Leoneans still nostalgically reflect on this period when FBC was known as the "Athens of West Africa" (Paracka, 2003). From the 1980s, higher education began to decline under the one-party political system, and further diminished during the civil war (World Bank, 2013).

2001 marked the beginning of a restorative period, and four laws were passed between 2001 and 2005. The Polytechnics Act of 2001 which established technical colleges; the National Council of Technical, Vocational and other Academic Awards (NCTVA) Act of 2001 which established a certification and accreditation body; the Tertiary Education Commission (TEC) Act of 2001 which established a quality assurance body; and the University Act of 2005 which amalgamated two groups of colleges into the University of Sierra Leone and Njala University, and allowed the establishment of private universities (World Bank 2013, p.8-9). Fourah Bay College now sits under the University of Sierra Leone.

Although the system is designed with academic and technical streams, data from interviews and focus group discussions suggest that technical institutions did not (and still do not) receive significant funding, and there was little demand from students for these courses due to biases towards academic learning and white-collar jobs from colonial times. One reason for this bias/low demand is likely because the vocational stream was designed for those who did not pass exams and/or school dropouts, thus giving TVET a lower status (Kingombe, 2011).

Figure 2.4: Structure of the Sierra Leonean Education System

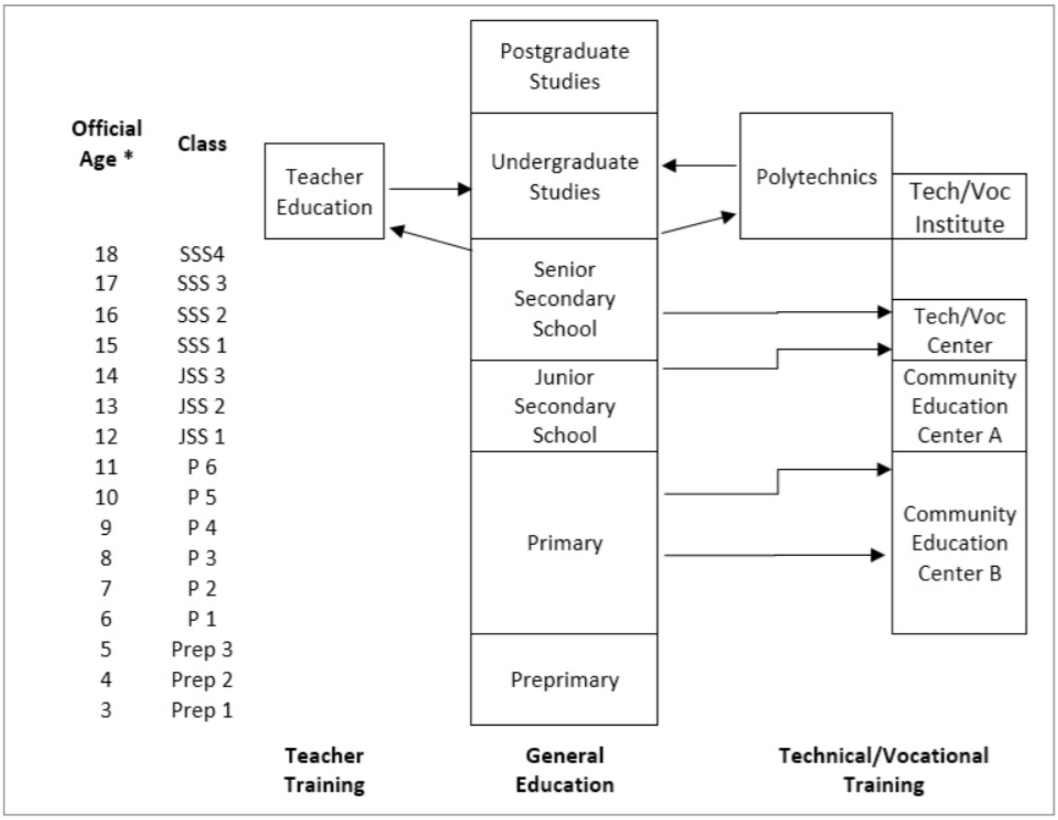


Image Source: Ministry of Education Science and Technology (2018, p.161)

There are currently two public universities under the Tertiary Education Commission’s remit – the University of Sierra Leone and Njala University - and three private universities, offering academic degrees, diplomas and certificates. There are also 75 accredited institutions that offer TVET training in Sierra Leone at the certificate and diploma level (NCTVA, 2018). Other private institutions operate and offer courses, but these are not accredited. There are two teacher training colleges. In addition to this, various NGOs and INGOs (often donor funded) provide skills training primarily at the 'Community Education Centre' level (Figure 2.4) and private companies provide in-house training to staff. In both cases, non-NCVTA approved certificates are awarded on completion.

Despite a range of skills training institutions for both academic and technical routes, the notion of *skills* and *skills development* appears to be ambiguous drawing on interview data. From the data, different actors in the labour market ascribe a different meaning to the term skills. This ambiguity of skills development resonates with Palmer's (2014) discussion on the lack of a clear definition at the policy level.

For the donors in Sierra Leone, the term *skills* was most often used to refer to technical skills at the lower/middle manpower level - for example carpentry, agriculture, mechanics, tailoring, and more recently skills for the agriculture sector and entrepreneurship. Donor programmes have been collated in Appendix 6 and are discussed in more detail in chapter three. Donors have come together to form the National Technical Vocational Coalition, but the relevant representatives from the Ministry of Education have not driven the process, and few private sector companies are involved.[22] This highlights the differing priorities among different actors. GIZ (through funding from BMZ and the EU) has been a key player in this field, organising stakeholder meetings and more tangibly, funding the "Skills needs assessment initiative of the TVET coalition of Sierra Leone". Similarly, the African Development Bank (AfDB) has financed the TVET Image Campaign under the Youth Entrepreneurship and Employment Programme.

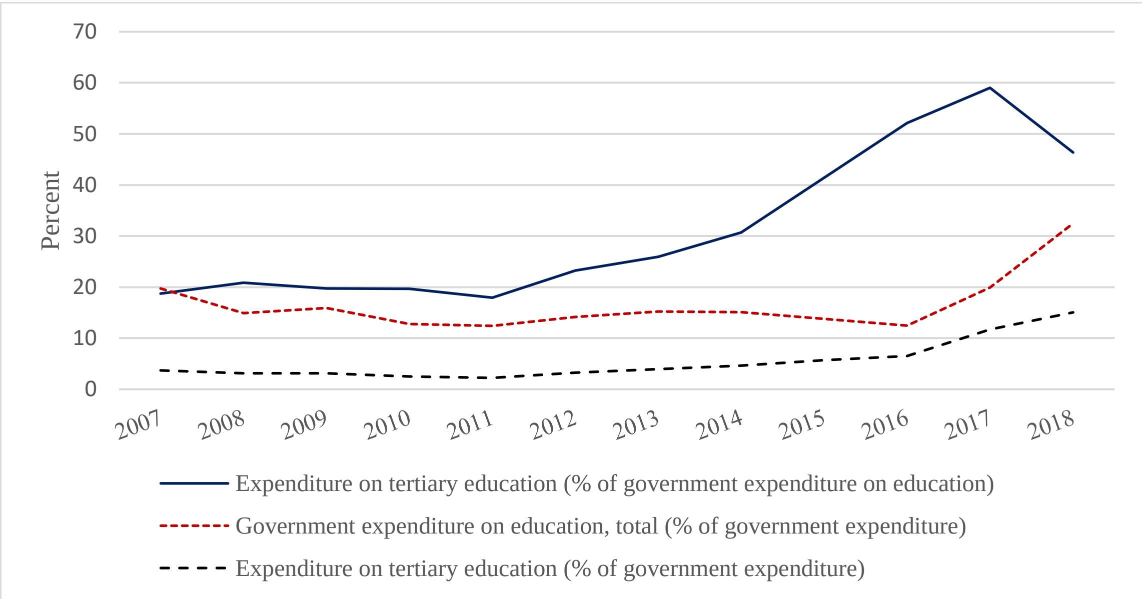
With respect to the Government, from the spending profile (Figure 2.5), past decisions and interviews with government officials, employers and students; skills often imply academic training. Since 2011 tertiary education has been allocated an increasing proportion of education spending, signalling a prioritisation at the highest skill level. This aligns with what Gruber and Kosack (2014) term "the tertiary tilt" in developing countries. In 2016 and 2017, over half of all education spending by the government was allocated to the tertiary education sector (Figure 2.5). This declined to around 46 percent in 2018 as the free education initiative led to funds being channelled

[22] Interviewee 16 (September 13, 2017); Interviewee 34 (October 5, 2017); Interviewee 35 (October 5, 2017)

to the primary and secondary levels. Government funding to higher education institutions mainly comprises subventions (grants to the institution) and scholarships to students (termed Grant in Aid).

Moreover, national TVET policies were drafted in 2010 and 2014, but never implemented (Thomas, 2019). The feeling among respondents was that the Government does not value TVET as much as academic training. It is believed that the Government's preference is likely influenced by resource constraints, as it is cheaper to fund academic skills in comparison to TVET because of the technical equipment required.[23] As such, as at 2017, for the Government, *skills* mainly referred to academic skills. Since then, the new administration has announced a renewed focus on TVET and is currently drafting a new TVET policy (Thomas, 2019).

Figure 2.5: Government Spending on Tertiary Education 2007-2018



Source: Word Development Indicators (World Bank, 2020).

Employers interviewed consider both technical and soft skills to be important. Most employers expressed dissatisfaction with the quality of training at both the university and TVET institutions, describing them as archaic and not in line with current market demands. Many employers adjusted to these quality issues and accepted the fact that staff recruited had to be further trained to an

[23] Interviewee 16 (September 13, 2017); Interviewee 34 (October 5, 2017); Interviewee 35 (October 5, 2017)

acceptable technical level. This on-the-job-training was estimated to take from a week up to six months, and imposed costs on employers.

Another issue for employers is soft skills and the ability for workers to transfer learnt skills and adapt to new situations. For employers, a skilled worker has the technical skills plus communication skills, analytical skills, and is a team player. A reputable recruitment company cited that employers were increasingly referring to T-shaped individuals.[24] T-shaped individuals demonstrate a breadth of general knowledge and transferable skills, while simultaneously having deep technical expertise (Boynton, 2011). Added to this, many employers felt that an attitude to fulfil responsibilities and simple work ethic (though not a skill in itself) is part of the puzzle. In a 2018 GIZ skills needs assessment, 14 percent of employers cited lack of motivation as the main reason for non-completion of tasks (Darwich, 2018 p.17). This was also a dominant theme among employers across the public, private and development sectors in Freetown who were interviewed for this study. One of the salient quotes from the interviews gives voice to this – see Box 2.1.

Box 2.1 – Data extract

"Social workers for example, we need people who can contextualise. It's about knowing A and its relation to B, C, and D. You should demonstrate this in writing as well. As a field worker, who should be able to express changes orally and in black and white. We have to teach this to the staff now coming in. They don't know how to talk about things beyond the obvious. They are lacking analytical and communication skills - written and oral. Some we train some for a week, some we do refresher courses which are about two days. For example, we work on FGM. We know we can't change this for now. Maybe 10 years if we are lucky. You should be able to say what is changing, who is changing, and why. Not x amount of people came to the sensitisation workshop and we discussed y. You need to contextualise and not state the obvious. Moving beyond skills to attitude, not just individual attitude, it's widespread. The homes and school need to address these issues. Things like time management, taking the job seriously, just working. People are at the job, but playing on the computer and phones. People need to be emotional about the job. They need to connect duties to output. Not just I am doing it because the organisation is paying me or I seek pride in being employed, but this needs to be linked to output. Now men want to marry women who have jobs. Even in families there is a lot of respect for having a job. There is a lot of status attached to employment, but people need to connect duties with output".

Interviewee 25 (September 26, 2017)

[24] Interviewee 34 (October 5, 2017)

And finally, jobseekers. From focus group data, the definition of skills to jobseekers includes both technical and academic skills. However, academic skills are preferred as many believe it sends a signal to employers that they are more capable. For example, a common perception among graduates is that an engineer with a degree is preferred to a technician with a TVET diploma, even though the engineer has fewer practical skills and ultimately spends the first six months of employment, at a minimum, learning from the technician. For jobseekers, a skilled person had practical skills on the job and academic training in the theory as well. Some thought TVET could be a stepping-stone to university, while others believed that a degree should be obtained, and that degree should include internships and practical training.

The above discussion highlights the complexity of skills development in Sierra Leone. Given that various actors have different definitions and conceptions of skills, this sheds light on part of the skills mismatch puzzled observed. Jobseekers focus heavily on academic skills, which is reinforced by the spending flows to the universities in the form of government subventions and scholarships. The preference for academic skills is linked to high aspirations for white-collar jobs with good salaries, and the perceived signal that this sends. The preference for white-collar jobs in Sierra Leone is not new, and has been linked to colonial legacies (Windham, 1970). Such high academic aspirations affect the quality of students that pass through the education system. Recent evidence shows that despite failing examinations at the junior and/or senior secondary level, a large share of students continue along the academic route once a school accepts them (Sam-Kpakra et al., 2017).

On the other hand, employers assign value to academic skills, but from the discussions are equally interested in practical technical skills and soft skills. The African Development Bank (AfDB) conducted a skills gap analysis in 2012 and concluded that in all sectors in the economy, there was insufficient supply of skills to meet demand by employers. This was particularly acute for technical skills in all sectors, and all skills levels in the mining sector (see Table 2.6). For technical skills, the gap was at least 50 percent of reported employment in the sector. It should be noted that the demand from the mining sector is expected to be lower given the decline of the sector with the commodity price crash and the Ebola crisis (IMF, 2016). A more recent study by GIZ does not quantify unmet demand in terms of number of personnel, but highlights similar skills needs in technical areas, as well as soft skills that are demanded by employers (Darwich, 2018).

Both the AfDB and GIZ reports were donor funded, and both emphasised the need to strengthen TVET skills training in Sierra Leone, through investments from the public sector and public private partnerships. The main recommendation specific to university-level higher education concerns strengthening the quality of training, and the suitability of courses to needs in the labour market.

Table 2.6: 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: Data from Mannah and Gibril (2012, p.26-30)

2.5. CONCLUSIONS

This chapter described the labour market and skills development in Sierra Leone, positioning this within the economic, political and historical context; and written with an emphasis on the skilled workforce as this group forms the target population of this study. Within this contextual analysis, actors on the demand side, namely employers in the private, public and development sector were highlighted, alongside skilled workers on the supply side. Naturally, these actors do not operate in isolation but interact with each other in various ways. A thorough analysis of search and matching in the labour market appears in chapter five of the thesis.

The government and donor community set the legislative and policy framework within which labour market actors operate. Both the State and the development community directly create employment, but also influence where opportunities arise in the private sector from policy intervention and private sector development programmes. The private sector creates jobs, but as noted, the size of the formal private sector is relatively small and job creation has been sparse. The labour force acquires skills from publicly funded universities, donor funded programmes and private sector companies as part of on-the-job training and internships, but some companies still report a skills gap.

All of these issues shape the labour market and collectively influence the aspirations of jobseekers, the manner in which agents in the labour market search, the types of skills that are developed over time; and ultimately growth and development in the country. These issues will be comprehensively addressed in the chapters that follow.

CHAPTER 3 – EXPLORING SKILLS AS A NEW CHANNEL OF CONTINUED AID DEPENDENCY

3.1. INTRODUCTION

The expansion in skills development in Sierra Leone, has not been matched by workers being absorbed into formal employment. News headlines such as “Help! I am an unemployed graduate” (Keili, 2019) and “67 percent of youths are unemployed” (Kamara, 2019) have become increasingly popular in recent years. In addition to unemployment, underemployment and engaging in informal work until formal employment becomes available is common among all workers, and in particular, among skilled workers as discussed in section 2.3.4. This is observed alongside employers reporting skills shortages and unfilled vacancies (Mannah and Gibril, 2012; Darwich, 2018).

The expansion in skills without workers being absorbed into formal employment is not unique to Sierra Leone nor is it a new issue - see for example Pritchett (2001), Adams (2008), Fox et al. (2016) and Alfonsi et al. (2017). As Alfonsi et al. (2017) aptly note, this begs questions on both the demand and supply sides of the market. In addition, issues associated with the functioning of the labour market and search processes are crucial to the labour market allocation decisions by jobseekers and search strategies by firms (see chapter five of this thesis). On the demand side, questions that arise relate to constraints faced by firms in the hiring process (see 2.3.2 of chapter two). On the supply side, questions relating to the right type of workers are pertinent. For example, are workers acquiring the right skills that are demanded by employers? This question forms the main area of enquiry of the present chapter.

This chapter explores skills development at the TVET and higher education levels in post-war Sierra Leone, with emphasis on the role of the development sector in driving skills development through direct intervention, and indirectly through its role as an employer. The main contribution of the chapter is to unpack the links between the ongoing presence of the development sector and changes in the skills composition over time.

The analysis focuses on skills development programmes that are funded/supported by and/or implemented by the development community, donor policies that impact on skills development, and the role of donors, INGOs and NGOs as employers of skilled workers in the labour market. This chapter therefore presents one of the main arguments of the thesis, that is, a large and ongoing development sector changes the skills composition in the host-country, and thus the types of skills available to employers in the labour market. The key finding coming out of this chapter is that large flows of ODA and a significant development sector have been associated with a decline in the share of science, technology, engineering and mathematics (STEM) graduates in host-countries like Sierra Leone, which in turn has potential implications for growth and development.

The present chapter does not use econometric techniques to demonstrate causation, but explores the mechanisms that can lead to such changes in the skills composition by studying donor policies, the flow of graduates and perceptions on types of skills by labour market actors. Chapters four and five deepen our understanding of these mechanisms by studying the labour supply decision of skilled workers in relation to occupational choice (chapter four) and search and matching (chapter five) when the development sector is present in the labour market.

Foreign involvement in skills development in Sierra Leone is not a new phenomenon. Previous research has documented the role played by Christian missionaries in the academic curriculum at the primary and secondary level (Windham, 1970) and the boom in foreign-influenced skills development at the TVET and tertiary levels in the post-independence years (Roberts, 1975). The present chapter discusses this occurrence in post-war Sierra Leone as the development sector expanded in this era. Importantly, this period (like the post-independence period) was a time of developing institutions, and thus the skills programmes and institutions fostered at that time, likely have lasting impacts on Sierra Leone's development pathway.

The chapter thus contributes to the literature by providing new empirical analysis on the development sector's role in skills development in post-war Sierra Leone; and importantly, by analysing the impact this has had on the skills composition. This is then discussed with respect to the implications for future growth prospects. In the analysis, I take as given the calibre of skilled labour produced in Sierra Leone is lower than that of other countries and the limitations of the education system with respect to quality assurance (World Bank, 2017). The analysis therefore evaluates the potential developmental effects of the *types* of skills acquired, conditional on quality of skills.

With respect to skills, the analysis is twofold. First, I focus on skills development in areas of TVET programmes that are largely targeted at those lower skilled. Second, I evaluate skills development at the tertiary level, targeting those higher skilled workers. Primary and secondary education is not at the forefront of the analysis as the pedagogical content at these levels is largely governed by the West African Examinations Council (WAEC), and is less likely to be influenced by donors in Sierra Leone. I argue that the development sector directly drives skills development in the TVET space; and in recent history has influenced courses offered at tertiary institutions directly. Moreover, there is an indirect impact on the composition of university graduates, as graduates demand and gain skills for employment in the development sector. The chapter concludes by positing that skills development interventions and subsequent changes in the skills composition in the host-country can be a mechanism through which dependency on foreign aid is renewed and reinforced.

The chapter employs qualitative analysis of four main types of data: (i) interview data from employers, NGOs, donors, the government and university graduates; (ii) focus group data; (iii) donor and government reports; and (iv) local media coverage (mainly newspaper articles). I also utilise quantitative data on graduates by degree type which was collected from the University of Sierra Leone and survey data collected for the DPhil project. A more complete description of these sources appears in section 1.5.2 of the introduction chapter of the thesis.

The rest of the chapter is structured as follows. Section 3.2 provides the conceptual framework underlying the analysis. Section 3.3 reviews the literature on skills development in developing countries. Section 3.4 focuses on the development sector and skills development. Section 3.5 discusses the impacts of the development sector on skills development and the potential implication for growth and development, proposing a new channel of continued dependency on foreign aid. Section 3.6 concludes.

3.2. SKILLS AS A NECESSARY CONDITION FOR DEVELOPMENT – A CONCEPTUAL FRAMEWORK

The analysis of this chapter is framed within a theoretical discourse that conceptualises skills as a necessary condition for economic growth and development. This section presents the theoretical foundations which frame the analysis, primarily drawing on literature from the economics discipline. The theories presented here do not form an exhaustive list, but cover some of the main ideas that have shaped the discourse.

The standard Solow model considers labour measured in effective units (Solow, 1956 cited Mankiw et al., 1992). In this classical set-up, labour (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 labour. As effective labour increases, output should increase. Mankiw, Romer and Weil (1992, p.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 level/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 (Gemmell, 1995).

Romer (1990) provides a conceptual framework linking growth and human capital in an influential paper on endogenous growth. Romer recognised that the stock of scientific knowledge is not tied to any one individual, and hypothesised 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 which is influenced by various country-specific factors. The stock and growth of human capital, thus matter for output growth.[25]

[25] 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 p.421).

Gemmell (1996) studies the works of Baumol (1986) and Barro (1991) and discusses another channel in the human capital-growth nexus. 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 technologically advanced countries. 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, utilise and build on imported technology matters for growth in this framework.

The channels above assume that skills development and training increase levels of human capital. For instance, Romer (1990, p.253) identify and model three types of skills associated with different levels of training: "physical skills like eye-hand coordination and strength; educational skills acquired in primary and secondary school; and scientific talent acquired in post-secondary education."

This is consistent with seminal works on human capital theory by Gary Becker (1964). According to Becker (1964, p.16-21), similar to business investments in equipment or physical capital, investments in human capital through education and skills training enhances the ability of labour to contribute to productive processes. Human capital investments thus increase the marginal productivity of labour, which should be associated with higher earnings in a competitive market.

Romer's (1990) conceptualisation of the stock of scientific knowledge as being distinct from the schooling of any one individual in its ability to generate growth is useful, albeit individual gains from education are also important to growth as education and skills development can have indirect growth effects through other economic and non-economic benefits. For example. the educated/skilled individual is hypothesised to have better health outcomes and lower fertility levels as the opportunity cost of working increases (Vila, 2000). Improvements in health and reduced fertility should result in increased labour force participation.

In the analysis that follows, I consider two direct channels in assessing the impact of the development sector on skills development in Sierra Leone. Two questions that follow from this framework are thus:

1. Has skills development in TVET and higher education, driven by the development sector, created human capital that can add to the endogenous stock of applied knowledge and feed directly into productive processes?
2. Has skills development in TVET and higher education, driven by the development sector, created human capital that can absorb, productively utilise and build on imported exogenous technology?

In framing the argument around the channels discussed in Romer (1990) and Gemmell (1996), skills/human capital is endogenous to economic growth. It is thus important to define and distinguish two types of training or human capital – namely general versus specific human capital. These terms are important in the analysis that follows as each type of human capital likely has different implications for growth. This human capital taxonomy – specific versus general - was established in the works of Becker (1964, p.33-51). According to Becker, general human capital are those skills which can be used across a variety of firms and industries and "marginal products would rise by the same extent in all of them" (p.34). It follows that the employability of individuals trained increases (as a private benefit), but there are also positive externalities as all firms, in principal, have access to better trained workers if workers move across firms and industries. Conversely, specific human capital has no effect on the marginal product of workers in sectors or industries outside the ones trained in.

Relating this to endogenous growth theories and the two questions above, the extent to which the stock of human capital is able to feed into productive processes and absorb and utilise newly imported technology is likely to be highly correlated with the type of human capital. Given the distinction above, it can be argued that the probability of improved growth is higher when there are additions to the general human capital stock which can benefit a range of firms in the economy. Most of the empirical literature in this area has explored the relationship between proxies of general human capital, such as years of education, and economic growth – for example see Savvides (2009). At the firm level, general human capital has been shown to be more beneficial to firm growth than specific human capital (Rauch and Rijsdijk, 2013).

3.3. SKILLS DEVELOPMENT AS A DIRECTED DONOR POLICY IN DEVELOPING COUNTRIES

Before proceeding with the Sierra Leone analysis, this section reviews the empirical literature on foreign (aid) involvement in skills development in developing countries - looking at historical trends and current manifestations, and the existing evidence on the impacts of skills development. The intention is to frame the Sierra Leone case within a broader context of foreign-influenced skills development. As such, Sierra Leone is a case from which lessons can be extracted to other relevant developing countries where donors play a role in skills development.

3.3.1. Historical and current trends

From the 1950s up to late 1980s, skills development was seen to be integral to development cooperation and the promotion of modernisation 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). At that time, like other forms of foreign aid, skills training and technical assistance were influenced by ideological disputes linked to the cold war era (Griffin, 1991; Browne, 2006).

The types of skills targeted were broad, capturing many sectors from artisanal sectors to semi-professional and professional areas (McGrath, 2002). With respect to the latter, higher education institutions were highlighted as pivotal for contemporary capacity development, and also for developing local capacity to train the future workforce (Buchert and King, 1995). For instance, 34 percent of all education aid to Africa went to higher education between 1981-1983, in an effort to build centres of excellence in Dakar, Ghana-Legon, Ibadan and Makerere (Saint, 1992 p.113). France as a donor took an active role, as 40 percent of French aid was allocated to establish and support universities in Francophone sub-Saharan Africa (Buchert and King, 1995 p.251). Browne (2006, p.85) also gives the example of a large bilateral programme to support the National University of Somalia in the mid-1980s, which was in excess of the national education budget by a multiple of five. Alongside university training, capacity building was directed at civil service and other government workers via numerous technical assistance programmes (Browne, 2006). Many of these technical assistance programmes continue today.

In addition to spending on skills development within the borders of developing countries, donors have also funded external skills development. Under colonial rule and immediately after independence, this was considered the fastest way to develop essential skills at the highest level in countries with weak tertiary education systems (Moock, 1984). Approximately 100,000 tertiary education students from sub-Saharan Africa excluding South Africa (or 30 percent of all African students enrolled in tertiary education) were studying abroad in a developed country in the late 1970s (Moock, 1984 p.222). Most of these students were funded by either their national governments or the international development community. The Commonwealth Scholarship Commission alone has funded over 30,000 students between 1960 and the turn of the millennium (Perraton, 2015 p.1).

From the late 1980s into the 1990s, with structural adjustment at work in much of the developing world, and increasing concerns for basic needs of the poorest, focus shifted to basic education (McGrath, 2002; Saint, 1992; Devarajan et al., 2001). This led to reallocation of funds to primary education away from other types of skills programmes in the 1990s (Devarajan et al., 2001); and culminated in the ambitious goal to achieve universal primary education under goal two of the Millennium Development Goals (MDGs) between 2000 to 2015.[26] An unintended consequence of the push for basic education was the rise in private education providers (McGrath, 2002), which remains a feature in many developing countries today.

[26] For an evaluation of foreign aid to primary education see Riddell and Niño-Zarazúa (2016).

Spending on TVET was one of the biggest casualties during the push for primary education period. As a share of World Bank education sector lending, funds to TVET declined from 25 percent in 1984/1985 to a mere three percent by 1996 (Bennell and Segerstrom, 1998 p.271). Though interest in higher education also dwindled at that time, 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 INGO under a charter agreed by several African countries (AVU, 2019).

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 emphasised 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).

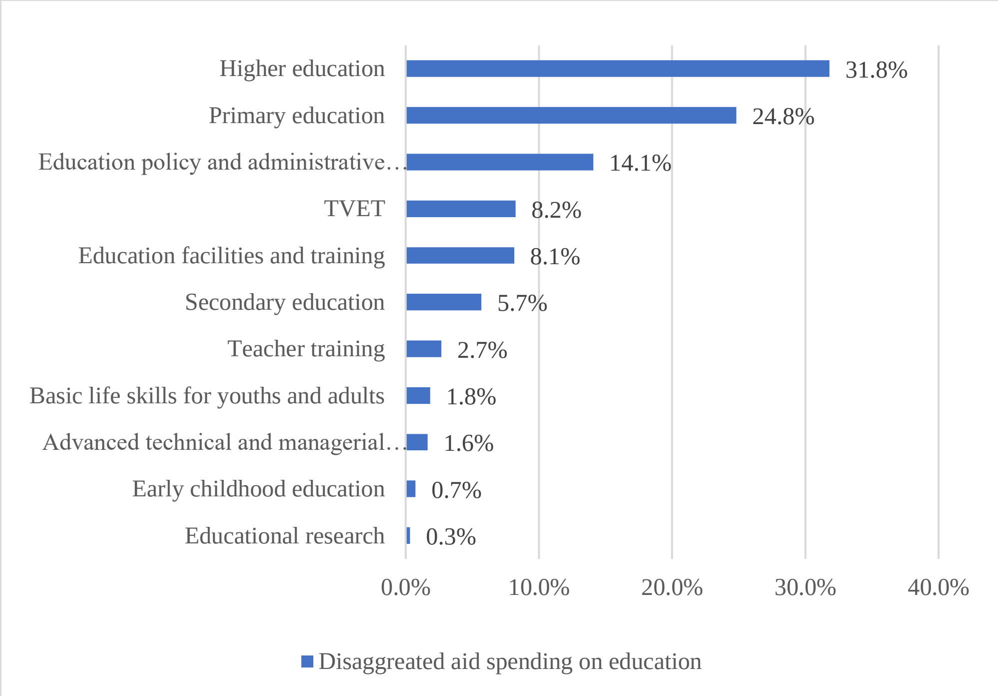
The current discourse on skills development includes measures of learning such as years of education and/or completion of primary/secondary school, and importantly, also discusses skills in terms of the ability to perform a function (Palmer, 2014; African Development Bank, 2014; World Bank, 2018). At the international policy level, goal four of the Sustainable Development Goals (SDGs) focuses on quality and inclusiveness of education at all levels. Target 4.1 seeks to achieve free primary and secondary education, 4.2 covers the pre-primary level, 4.3 focuses on TVET and higher education and 4.4 recognises the importance of skills being relevant and linked to employability. That latter of these (4.4) is crucial in pushing the policy agenda forward. Issues related to skills are also subsumed in SDG eight – decent work for all (UN, 2019). The topic of skills is also closely linked to the decent work agenda. For example, of all interventions listed in the ILO's Youth Employment Program Inventory database, 82 percent are training programs (Fox and Kaul, 2018 p.9). At the national level, Mckenzie (2017) notes that vocational training became the most popular active labour market policy used by governments after the 2007/2008 financial crisis; and more recently, has been packaged with interventions that promote entrepreneurship.

Over the period 2009 to 2018, developed countries spent US$126 billion (in 2016 prices) on education-related activities in developing countries or an estimated US$20 per person in a developing country (OECD, 2020c). As shown in Figure 3.1, spending on higher education commands the largest share of total education-related spending over the period at 31.8 percent. This may be surprising given the higher publicity around primary and secondary education in comparison to tertiary. Indeed, this statistic should be interpreted with caution as it includes expenditure on activities in both developing countries and developed countries that host international students. An estimated 15.5 percent of all education-related spending comprises imputed student costs (OECD, 2020c). These costs include the cost of tuition of sponsored students from developing countries studying in developed countries, and other indirect costs due to the presence of students that "reflects the implementation of a conscious policy of development co-operation by the host country" (Development Assistance Committee, 2018 p.24).[27] This implies that higher education spending *in* developing countries was instead an estimated 16.3 percent of all education spending over the period (or US$20.5 billion).

Spending on primary education is the second largest share (24.8 percent) which is understandable as primary education remains a top priority given shortcomings in basic literacy and numeracy in developing countries. Rounding off the top five spending areas are: education policy and administrative management (14.1 percent), TVET (8.2 percent) and education facilities and training (8.1 percent).

[27] Whether or not imputed student costs should be considered as aid is debated as funds are spent in donor countries (Legault, 2011).

Figure 3.1: Education-related aid spending by OECD donor countries 2009-2018.



Source: OECD (2020c) – Aid to the Education Sector

3.3.2. The impact of skills development programmes in developing countries

Theoretically, skills training programmes should improve employment outcomes consistent with both human capital (Becker, 1964) and signalling theory (Spence, 1973). In line with human capital arguments, training should improve the skills of workers, making them more productive. With respect to signalling, certification associated with training should, in principle, communicate ability/higher skills to employers in a market where there is uncertainty. Spence (1973, p.357) noted the inability of employers to observe an individual's productive capabilities at the time of hiring. Instead, the employer makes a decision based on observable characteristics, one of which is certification upon successful completion of training. Certification credentials is thus a signal used by jobseekers to communicate information about ability to employers and increase their employability. In Spence's model, the value of education/training is in the signal rather than the productivity gains unlike human capital models.

Moving from the individual to the economy, education/training should, in principle, improve labour productivity, increase the returns to capital (if skills developed are a complement to capital), promote research and development, and increase employment (which in turn increases spending, savings and investment, and government tax revenue). All else constant, these theoretical arguments suggest that education/training should have positive effects on employment and growth. Evidence from more developed countries shows that continuous skills training and upskilling can be fundamental to growth (Kuruvilla et al., 2002), especially in a globalised world (McGrath, 2002).

In the next sub-section, I review the recent empirical evidence on the effects of skills development programmes in developing countries. Though spending has been split across several sources as shown in Figure 3.1, I focus on TVET, higher education and education policies specific to TVET and higher education.

3.3.2.1. Technical Vocational Education and Training (TVET)

Research on the developmental effects of TVET has tended to focus on employment rather than growth impacts, and the private gains to education instead of social gains. Mckenzie (2017) critically reviews several empirical studies in developing countries and finds that results on the effects on employment and earnings are inconclusive. This is unsurprising given heterogeneity in duration and content of skills training programmes across several countries. Programmes often included one or a combination of the following: pedagogical training, on-the-job training, life-skills and/or mentoring (Mckenzie, 2017; Fox and Kaul, 2018).

Mckenzie (2017) notes that skills training in developing countries has primarily targeted low-income “at risk” youths. This has been justified given the potential of youths to generate output for long periods if employed, the belief that younger people may be easier to train, and the need to incentivise “at risk” youths away from socially undesirable activities related to drugs and crime (Brewer, 2004). The latter of these is especially important in the current research context given the dynamics of youth and violence in post-conflict Sierra Leone (Enria, 2018). Albeit, as Fox and Kaul (2018) note, issues of youth employment are likely symptomatic of wider structural economic problems that constrain employment for all groups of the labour force.

Of the nine studies reviewed in Mckenzie (2017, p132), only three give evidence of a positive impact of TVET skills training on employment. These include Attanasio et al.'s (2011) study on disadvantaged youths in Colombia, Maitra and Mani's (2017) on low-income women in India, and Honorati's (2015) on low-income urban youths in Kenya. Of these three, only the Kenyan study finds no impact on earnings. It should be noted that the three studies above had relatively high attrition rates of 18.5 percent in Attanasio et al.'s, (2011), 25 percent in Maitra and Mani (2017) and 23 percent in Honorati (2015) from samples of 4350, 658 and 2100 respectively. Such high rates of attrition are problematic if this correlates with employment outcomes. For instance, one can imagine that discouraged workers who received training and were still unable to find employment would be less likely to participate in follow up data collection. In such a case, the estimated effects would be overstated. The results from Attanasio et al. (2011) are the most robust as a follow up study on the same case by Attanasio et al. (2017) show that there is sustained positive outcomes for trainees with respect to formal employment and wages.

A more recent study by Alfonsi et al. (2017) similarly tell a positive story of the TVET-employment relationship. This study was not reported in Mckenzie (2017) and is thus briefly summarised here. Alfonsi et al. (2017) use experimental methods in Uganda to tease out the effects of vocational training on disadvantaged lower-skilled workers in Uganda. Participants were ‘treated’ with either a subsidised TVET sector-specific six-month course or a six-month apprenticeship at a subsided small or medium enterprise. The latter entailed training in firm-specific TVET skills. The authors find that three years after the intervention, TVET had a positive impact on employment and earnings of treated individual. Relative to the control groups, those with sector-specific training and firm-specific training saw an increase in employment rates of 21 and 14 percent respectively, and earned more by 34 and 20 percent respectively (Alfonsi et al. 2017, p.4). One reason for this, as proposed by the Alfonsi et al. (2017) is that workers are better capable of signalling their skills as a result of TVET certification.

In the studies above, the results are individual specific, and not economy wide. In other words, they give evidence that skills training can boost employment prospects of those trained, but this does not imply that skills training necessarily increases aggregate employment in the economy. As Fox and Kaul (2018) note, the effects may simply be a reallocation of jobs in the absence of structural transformation. Empirical evaluations of this supposition are sparse. Alfonsi et al. (2017) provide some preliminary evidence of displacement effects. The size of firms which benefited from subsidised training did not increase, which the authors argue may suggest that workers trained through the intervention likely displaced other workers (Alfonsi et al., 2017 p.33).

The ability for donor-influenced skills development through TVET to drive economic growth and development is also contested, mainly due to the form and function of foreign-influenced TVET policy. McGrath (2002, p.414) notes that: “Too often, curriculum, pedagogy and equipment reflected the traditions of the donors. European models of ‘getting a trade’ were the starting point and there was little concern with the nature of the labour markets that were being prepared for”.

Similarly, having assessed skills development in rural Ghana Palmer (2007) argues that interventions have been top-down, with little labour market relevance nor support to use skills after the training. This is noticeably different from the Colombia study (Attanasio et al., 2011; Attanasio et al., 2017) where the intervention worked directly with firms to assign trainees to apprenticeships. In more recent work, Palmer (2014) reviewed development policy on TVET since 1990, and contend that one of the biggest issues was the vague definition of goals related to skills development, and the resultant ambiguity in measurements. According to Palmer (2014) addressing this ambiguity will increase the probability of developmental gains from skills training. Evaluating a similar time period of TVET policy (the 1990s), Johanson and Adams (2004, p.11) also conclude that since non-government training institutions and enterprises accounted for most of Sub-Saharan African’s skills training capacity, a more coordinated reform framework is needed.

3.3.2.2. Higher education

Spending on universities in the post-independence period provided much needed support to financially starved universities. However, little research has been done on the effectiveness of such spending on economic outcomes. Bloom et al. (2014) argue that lack of empirical evidence on higher education spending, served to reinforce the low prioritising of higher education in developing countries since the 1990s. Much of the evidence on the relationship between higher education and economic development was reviewed in Kimenyi (2011), Teal (2011a) and Bloom et al. (2014). However, from these review articles, the empirics are skewed towards developed countries; and when developing countries are included, this was usually part of a panel study. I discuss the evidence specific to developing countries below.

Gyimah-Brempong, et al. (2006) study a panel of 34 African countries (including Sierra Leone) over the period 1960-2000 and find that a one percent increase in the years of higher education, increases GDP per capita by 0.09 percent annually. Similarly, Lin (2004) finds that higher education has a positive effect on growth in Taiwan using data between the period 1965-2000. Importantly, Lin's study dissects the role of different types of training and finds that engineering and natural sciences majors are integral in driving growth. A more recent study by Bloom et al. (2014) finds that a tertiary education shock raises the long-run steady state level of GDP per capita in African countries, but notes that other development barriers may dampen the effect.

Although the evidence is mostly positive, it is not clear if spending on tertiary education generates the highest gains relative to other types of education spending. This is an important question given limited financial resources. Loening (2005, p.35) modelled primary, secondary and tertiary education as inputs into the production function using Guatemalan data. Findings show that all levels have significant growth-effects, but the size of the coefficient is decreasing in the level of education. In other words, the long-run elasticity is highest for primary education, followed by secondary and then tertiary education.

The effects of higher education (and skills development more generally) on growth is conditional on the employment outcomes of those trained. Evidence from Senegal suggests that high quality graduates have better employment outcomes (Boccanfuso et al., 2015). In Sierra Leone, university graduates have a lower unemployment rate than those with TVET training and upper higher secondary training, but a higher unemployment rate in comparison to those who completed lower secondary level only, and other education levels below this (SSL, 2015).

The above studies offer empirical evidence specific to the higher education-growth nexus but do not speak to the evaluation of aid to higher education. Scholarship in this area broadly fits into a critical discourse focusing on the neo-imperial effects of aid policy. Saint (1992) finds that support was biased towards university departments favoured by some donors (such as economics), and failed to focus on institutional needs like libraries, staff development, planning and strategy. Browne (2006) describes polices and interventions as being supply-driven (by donors) rather than being based on local demands and realities. Others have found that not only was aid misaligned with local needs, but bordered on being harmful. According to Samoff and Carrol (2004, p.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."

Samoff and Carrol's analysis and conclusions are similar to that of Banya and Elu (2001) and Brock-Utne (2003) who analyse World Bank policies on higher education in Africa; and more recently, King (2013) who looks at China's use of higher education as means of expanding soft power.

In addition to the impact of spending within national borders of developing countries, some have studied the effects of transnational skills development linked to students from developing countries studying abroad. One of the effects heavily discussed in the1960s and 1970s was the "brain drain" resulting from some of the best trained staying abroad (Oosterbeek and Webbink, 2011). This led to the proposal of a Bhagwati Tax on emigrants' incomes to mitigate the harm to developing countries (Bhagwati, 1976). For those who return after a period of studying and working abroad, the evidence suggest that developing countries gain from the diffusion of scientific knowledge and technologies from those trained in science and technology (Johnson, 2002).

The literature reviewed has assessed the effects of TVET and higher education on employment and growth, and the shortcomings of donor policy in both form and implementation. In sum, donor-driven skills development policy has existed since developing countries became independent, though the structure and focus areas have consistently changed over time. The rationale behind such interventions were initially routed in the gap-filling developmental approach of the 1960s and 1970s where the objective was primarily economic growth; but has since shifted to take account of the neediest in developing countries in the spirit of inclusive growth. Donor funding has adjusted to changing priorities, though some argue that policies remains top-down and disconnected from local needs. The evidence on employment effects are inconclusive, though higher education has been associated with higher levels of GDP per capita. Importantly, the ability of skills training to stimulate development is contingent on displacement effects in the labour market, minimising brain drain of those funded to study abroad, and structural adjustments in other parts of the economy.

3.3.3. Private versus social returns to skills development

As noted above, much of the literature on the returns to education have tended to focus on private returns such as individual employment outcomes and earnings as these outcomes are relatively easy to measure using either survey or administrative data. One exception to this is the literature on brain drain which evaluates the social costs to developing countries that lose skilled workers to developed countries. Such a bias in the literature casts a shadow on the importance of the social returns to education as it is not only individual outcomes that matter, but the aggregate economic and societal gains that accrue from a better trained workforce. For example, a more educated population should have a positive effective on productivity, health, crime and voting, which collectively can boost social welfare (Moretti, 2005).

Venniker (2001, p.49) decomposed the productivity gains to society from increased human capital into three groups: (i) the ability to create and adopt new technologies (ii) learning (-by-doing); and (iii) group effects when the type of human capital is complementary. The first and second of these directly relate to Romer's (1990) endogenous growth theory presented in section 3.2 of this chapter. The third relates to the composition of the human capital stock, and not merely the level. The arguments presented in the rest of this chapter take social returns related to productivity gains as an integral piece in the growth and development puzzle.

3.4. THE DEVELOPMENT SECTOR AND SKILLS DEVELOPMENT IN SIERRA LEONE

This section explores donor influence on skills development specific to TVET and higher education in Sierra Leone. A brief history of skills development intervention in Sierra Leone is given, followed by an analysis of post-war programmes in TVET and higher education. The data for the analysis is drawn from interviews and focus group discussions during the DPhil fieldwork, donor and government publications that relate to skills development post-2001 and data on tertiary level graduates by subject and qualification type from the main university, the University of Sierra Leone.

3.4.1. A history of development intervention

Foreign involvement in Sierra Leonean skills development, like in other developing countries, has existed since independence, with interventions in both vocational and academic areas. Roberts (1975, p.345) estimated that 15 percent of all foreign aid flows in the ten years succeeding independence was spent on technical assistance, scholarships and fellowships. This estimate does not include infrastructure spending on skills development institutions.

Just after independence in 1961, USAID (together with Hampton Institute in Virginia) embarked on developing training institutions in rural areas in the eastern and northern provinces; the Trade Union Federation of Austria provided TVET scholarships to Sierra Leoneans to study electrical engineering and bricklaying; and the International Association of Economics and Commercial Science funded Sierra Leonean students to undertake traineeships in factories in West Germany, France and Sweden (Roberts, 1975 p.341-342). Flows to TVET courses within Sierra Leone continued in a similar manner to that of flows to other developing countries up to the 1990s until basic education was prioritised; though TVET as an area remained relatively weak in comparison to a stronger academic tradition (Matsumoto, 2018).

In addition to TVET programmes, universities and their academic progression have also been shaped by external actors. Fourah Bay College is the oldest tertiary institution in West Africa and was founded by the Church Missionary Society (CMS) in 1827. The main objective at the time was to training clergy. Through its affiliation with the University of Durham (UK), FBC began awarding degrees in 1867 (World Bank, 2013). Although affiliation with the University of Durham ended six years after independence in 1967, foreign influence continued. In the post-independence 1960s, the De Beers Group - through the Diamond Corporation of Sierra Leone Limited (Dicosil) – gifted US$90,000 to FBC to assist in founding the Geology Department, the Nuffield Foundation supported the Social Sciences Faculty, the British Council supported the FBC library, the Rockefeller Foundation contributed to economic research and USAID provided scholarships to students (Roberts, 1975 p.341-342).

In 1964, Njala University College (now Njala University) was established with significant financial contributions from USAID and input from the University of Illinois (Roberts, 1975; Njala University, 2020). At the time, Njala was conceptualised as an institution to supply trained extension workers and secondary school teachers to meet the agricultural and education needs of the country as agreed by the Government and USAID (Njala University, 2020).

All areas of the education sector and skills development in Sierra Leone suffered with the economic downturn in the 1980s (Banya, 1991). Aid to the university sector continued during this period as the government budget deteriorated and public debt spiralled (Banya, 1991). The presence of development funding was so greatly felt at Fourah Bay College and Njala University that during interviews in 1988, representatives from the student body commented that “half the student population is financed by external agencies such as the European Community, the Arab League and the Nordic Countries” (Banya 1991, p.131). In addition to tuition financing, in the 1980s, the United Nations Educational Cultural and Scientific Organisation (UNESCO) also explored setting up a theatre department at FBC (Lokko, 1983), though this did not materialise.

The 1990s brought the civil war, which disrupted all parts of the country, including education and skills development. The literature on foreign involvement in skills during the 1990s is almost non-existent. Research on education and skills development in the 1991-2002 war period has sought to understand the bi-directional relationship between education and the war. Some argue that the state of the education system contributed to the war as uneducated youths, school dropouts and disenchanted university students were easily mobilised; while on the other hand, the war devasted the education system (Matsumoto, 2012). This devastation paved the way for a new wave of foreign intervention during the post-war period of rebuilding and reconstruction.

The interventions in the post-independence and pre-war period has had lasting effects on skills development at the highest level in Sierra Leone. For example, Fourah Bay College's main strength remains in the area of social sciences, and Njala University still has a focus on agricultural programmes. As I will argue, interventions in the post-war period also have the potential to have long-term effects. The rest of this section presents the main empirical evidence of the chapter.

3.4.2. The development sector and TVET in post-war Sierra Leone

The recent manifestation of vocational skills development by development partners traces back to the Disarmament, Demobilisation and Reintegration (DDR) initiative that was part of the peace and recovery process immediately after the war. In the reintegration stage of DDR ex-combatants were provided with different types of training categorised as vocational training/apprenticeship, formal education, agriculture and job placement. A total of 51,122 ex-combatants participated in the Reintegration Opportunity Program (Sesay and Suma, 2009 p.13). Skills training often entailed short courses (two to three weeks in duration) and comprised vocational skills such as masonry, carpentry, hairdressing and *gara* tie-dying (Sesay and Suma, 2009).

Training in these types of skills continued to be dominant in many donor programmes in the decade after the war. According to Mannah and Gibril (2012, p.13), between 2007 and 2011, development partners such as the UNDP, Irish Aid, the World Bank, the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation (NORAD) and GIZ supported the training of an estimated 10,000 youths in TVET areas including tailoring, hair dressing, home management and catering, masonry, refrigeration and air conditioning, metal, welding and fabrication, plumbing, agriculture, carpentry and automotive. Enria (2014) notes that these types of programmes were often chosen based on what was previously done, hence the proliferation of DDR-style training. Data from this study reinforces Enria's arguments. According to a respondent from one of the largest donor-funded employment programmes currently being implemented.[28]

> "The [programme name omitted] works in Kono, Koinadugu and Kailahun. This is mainly for historical reasons as Kono and Koinadugu were affected by the war. I guess we stayed there a while so it's comfortable now."

Selecting locations and skills based on experience and convenience is rational and strategic at the donor level. Working in familiar contexts using tried and tested methods increases the probability of programmes being *successful. Success*, however, is often measured by the numbers of beneficiaries trained. This often results in trainees entering saturated markets such as hairdressing, tailoring and mechanics, with little hope of being integrated into the formal labour market. None of the donors interviewed were able to provide evidence of integration into the labour market which could be attributed to their programme. In addition to working in familiar areas, programmes were also selected in accordance with 'global strategies',[29] or priorities determined by head offices in the donor countries.[30]

Though the types of skills offered under the DDR initiative has been a persistent shock to the skills available at the lowest levels; as in other developing countries, there has been evolution in skills development related to shifting donor priorities. For example, the global food crisis in 2008 saw the World Bank inject US$4 million in Sierra Leone to create temporary employment for over 360 cash-for-work projects, which benefitted over 16,000 people (Cubitt, 2011 p.10).

More recently, skills development programmes have been coupled with other donor objectives, and now have dual aims of targeting gender equality, poverty alleviation and/or vulnerable groups or youths. With respect to content, alongside the traditional technical vocational courses, the majority of donor activities now focus on entrepreneurship as a means of job-creation and skills development for the agriculture sector – see Appendix 6.

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[28] Interviewee 6 (September 11, 2017)
[29] Interviewee 5 (September 8, 2017)
[30] Interviewee 6 (September 11, 2017); Interviewee 27 (September 27, 2017); Interviewee 45 (December 4, 2017)

Most of the projects presented in Appendix 6 span from 2010 (for example the ILO's Quick Impact Employment Creation Project and the World Bank's Youth Employment Support Project), include those that were currently being implemented at the time of fieldwork in 2017, and some that were in the pipeline at the time of data collection but are now in the implementation phase at the time of writing in 2020 (for example the African Development Bank's Youth Entrepreneurship and Employment Project and the World Bank's Skills Development Project). This is unlikely to be an exhaustive list, but captures the main donors in Sierra Leone based on interviews, donor websites and donor reports. In addition to the summary data presented in Appendix 6, responses to the interview question: "How has your organisation been involved in skills development in Sierra Leone", together with data from donor reports and web pages have been analysed in NVivo and is presented in the word cloud in Figure 3.2.

Figure 3.2: Donor descriptions of skills development programme/projects in Sierra Leone

Source: Interviews, donor report and web pages.

As shown in Figure 3.2, the majority of projects/programmes target youths given the national problem of youth employment. In terms of the content of projects/programmes, 'vocational', ‘technical’, ‘entrepreneurship’, ‘business’ and ‘agriculture’ were most commonly cited. Specific to vocational skills, some mentioned carpentry, tailoring, welding, mechanics and hairdressing. Skills for the mining sector was also named, and was mainly supported by BMZ (through GIZ). In addition to the donor programmes presented in Appendix 6 and analysed in Figure 3.2, funds that flow to third party organisations under private sector development spending also influence skills development. For example, the Dutch INGO Cordaid has benefitted from DFID funding and subsequently launched their Enterprise Academy under their Resilient Business Development Services (RBDS) accelerator programme (Cordaid, 2019).[31]

Most donors named employment as the key outcome of their initiative, which is unsurprising given programme/project names such as ‘Youth Entrepreneurship and Employment Project (YEEP)’, ‘Employment Promotion Programme (EPP)’, ‘Quick Impact Employment Creation Project (QIECP)’, ‘Youth Employment Empowerment Programme’ and ‘Youth Employment Support Project (YESP)’. Employment, however, often relates to self-employment, as the notion of “employment creation” is a common denominator across many programmes/projects. Integration into the formal labour market is often secondary to developing agricultural skills to engage in small-scale farming or TVET combined with business skills and sometimes start-up capital to establish a small sewing business, or mechanic shop for example. According to three of the main donors:

> “The new Private Sector Development Plan will focus on jobs and incomes. We hope to use livelihood programming to boost returns to self-employment.”[32]
>
> “Our programme is really self-employment in rural settings through agriculture. We promote labour within agriculture. So, it’s not just general employment but agriculture sector employment.”[33]
>
> “Most people are in the informal sector just for survival. They are not trained in management, bookkeeping, financial literacy. The programme provides training and links the beneficiaries to financial institutions. We hope to make self-employment more sustainable.”[34]

[31] Interviewee 26 (September 26, 2017)
[32] Interviewee 27 (September 27, 2017)
[33] Interviewee 6 (September 11, 2017)
[34] Interviewee 3 (August 18, 2017)

Despite the emphasis on employment/self-employment, the impact on the employment outcomes of those trained is uncertain, as there is little to no follow up on beneficiaries by donors or those implementing training courses. Several donors and implementers readily point to the numbers trained to indicate reach of their programme. This type of data however, sheds light on the output of a programme, but not the outcome of training. Of the sources interviewed, and reports surveyed, the 'Mines to Minds' projects reported that employment outcomes were tracked,[35] and the World Bank has conducted a systematic impact assessment for the Youth Employment Support Project (YESP), fully exploiting random assignment of training packages at the implementation stage. YESP was implemented between 2010-2015 and provided training on three skills types to youths from five urban areas: (i) basic literacy and numeracy; (ii) basic financial literacy, including bookkeeping; (iii) technical skills from a choice of welding, auto mechanics, solar engineering, catering, hotel management, electricity, electrical installation, tailoring and design, and building and construction; and entrepreneurship and business development training (Rosas et al., 2017 p.5-6). Those provided with technical training were entitled to an internship, and those with business training to microfinance contingent on the quality of their business plan.

After advertising and screening of participants, a lottery was held that sorted candidates into four groups based on treatment: Treatment A received the technical skills package (791 participants), Treatment B received the business skills package (791 participants), Treatment C received both package A and B (794 participants) and the control group (943 participants) (Rosas et al., 2017). Basic literacy and numeracy training were provided to those participants that trainers identified as having a deficiency in reading and numeracy skills, irrespective of the treatment group assigned to. Baseline data was collected in November 2013, and end-line in June 2015 – six months after the business training and nine months after the technical training, with an attrition rate of 16 percent (Rosas et al., 2017). The results show that those treated were 3.1 percent more likely to be employed, and 4.1 percent more likely to be a first-time entrepreneur (Rosas et al., 2017 p.13-14). The latter often involved trading or shop keeping. The employment effect (3.1 percent) is smaller

[35] Interviewee 16 (September 13, 2017)

than that found in other studies – 4.5 percent in Colombia (Attanasio, et al., 2011), 5.6 percent in Kenya (Honorati, 2015) and 8.1 percent in India (Maitra and Mani, 2017). It is likely that the effect on employment is lower in Sierra Leone owing to the Ebola outbreak between 2014-2016.

Albeit the positive results, the results cannot be generalised to other skills intervention programmes as elements of selection bias was likely present. Participants had to apply to the programme, and were screened based on age, location, educational attainment, entrepreneurial interests and the quality of a short business plan submitted (Rosas et al., 2017 p.8). In addition to this, little can be said on long-term effects given the short follow-up period. And finally, there is no evidence to suggest the results are not driven by displacement effects, with no real change in aggregate employment and/or no real social gains. This final point again speaks to the difference between private versus social returns to human capital. From a developmental perspective, it is the latter that drives the development process.

3.4.3. The development sector and university education in post-war Sierra Leone

The demand for tertiary and higher education increased significantly in the first decade after the civil war ended, with enrolment more than trebling from 8,900 in 2001 to 31,100 in 2011 (World Bank, 2013 p.12). In addition to this, the number of courses on offer increased at the main university – the University of Sierra Leone (USL).

Table 3.1 collates data from graduation booklets from the University of Sierra Leone. Records date back to 1985 but are incomplete during the period of the civil war. Table 3.1 therefore shows 'new courses'. I define a new course as one for which the first cohort of graduates were recorded by the University of Sierra Leone in the post-war period since 2002, and said course was not present before the war started in 1991. The data has been categorised by qualification type (certificate, diploma, bachelors, masters or post-graduate diploma/certificate). 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 3.1, 51 students graduated with a Certificate in Cultural Studies in 2006, but there was only one cohort as no other graduates have been reported since 2006. Similarly, there were 25 graduates with a Certificate in Social Development over three cohorts, with the last cohort graduating in 2008.

A first observation from the data is that the introduction of a certificate or diploma programme introduces a temporary skills shock into the labour market. New certificate and diploma courses arise more frequently (relative to degrees); but are often short-lived. Of the new certificate courses introduced since 2006, courses in Peace and Conflict Studies (130 graduates between 2006-2017) and Population Studies and Social Statistics (466 graduates between 2006-2017) were the only two that survived. The certificate in Mass Communication was introduced in 2017, hence its staying power is yet to be determined. At the diploma level, courses in Mass Communication, Medical Laboratory Services, Nursing Education, Early Childhood Care and Mathematics and Statistics have survived with a total graduates of 273 (between 2008-2017), 88 (2008-2017), 32 (2011-2017), 121 (2012-2017) and 34 (2013-2017) respectively.

The new courses introduced and offered at the degree level have persisted and represent long-term shocks to the skills composition. At the degree level, the courses that relate to Accounting and Finance/Applied Accounting are reincarnations of courses that existed before the war 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 and other business-related courses). These courses were oftentimes created in consultation with the private sector.[36]

The general pattern of increase and the composition of new courses at both the undergraduate and postgraduate level is indicative of the strong presence of the development sector. Courses such as 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 are examples of the rise of "NGO courses" since 2006.

[36] Interviewee 41 (November 21, 2017)

Table 3.1: Courses for which the first cohort of graduates were recorded since 1985 by the USL+

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)*	

Year	Masters	Postgraduate Diploma/Certificate	Bachelors	Diploma	Certificate
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)

+ Figures in the brackets give the total number of graduates since the first cohort graduated. The 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.

Source: University of Sierra Leone graduation data as at 2018

The term "NGO courses" was frequently used by focus group participants and employers to refer to specific degrees in the social sciences and humanities/arts that are perceived to be developing skills for the development sector; and are thus less marketable in other sectors. Extracts from focus group discussions and employer interviews are given in Box 3.1 to support the description and use of this term. Perceptions of so-called NGO courses among respondents are not unfounded as several NGOs and INGOs reported a higher demand for undergraduates with training in Peace and Conflict Studies, Sociology, Social Work and Mass Communication. Many NGOs and INGOs reported hiring interns from these degrees, and internships were habitually converted into staff positions once funding allowed. Though NGOs and INGOs have a higher reported demand for so-called NGO courses relative to other employers outside of the development sector, their demand was not exclusive to these courses. Other degree courses demanded by development sector organisations include Accounting and Finance, Economics, Project Management and Procurement.

The trend in NGO courses is also present at the certificate level. As noted previously, the two certificate courses offered by the University of Sierra Leone that survived since their introduction in 2006 are the courses in Peace and Conflict Studies and Population Studies and Social Statistics. The former is a well cited NGO qualification (see Box 3.1), which graduates often use 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, though anecdotal evidence suggests that most enumeration work is funded by the development community, even if conducted by a private firm.

Though NGO courses are present at all levels, of particular interest for the present analysis is the degree level as courses at this level have a higher probability of persisting over time, and thus affecting both the current and future skills composition of the country.

Box 3.1 – NGO courses as described by research participants

Focus group data extracts

"When we tell them Sociology, the first thing they say: 'do you think that is marketable'. You find out after that your degree is not marketable. I think I can get employed at an NGO doing community work. I took Rural Sociology. If I am employed at an NGO, I can work with the local community in rural areas."

"I do 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."

"When we apply for Grant-in-Aid (from the Government), we don't get it because Social Work is an NGO course. You are not working for the people through the Government. They see us as unknown. But we end up working (for the Government) in the hospitals, the military."

"There are no opportunities for Peace and Conflict students. Some people had to do a Master's in Business. My field is mainly for NGO jobs and the UN. I applied for many jobs at the NGOs. The jobs are at the banks. I didn't know this before I chose Peace and Conflict Studies."

"I started off at [NGO name removed] as a volunteer. I had a certificate in Population Studies and was studying Economics at the time. I did this for nine months. Then I became an intern for another nine months. After that, I was hired as a field officer managing other interns. I want to be a coordinator or manager; those jobs are permanent."

Private sector employers/recruiters interview data extracts

"Companies frown on Peace and Conflict Studies, Library Studies, History. They see them as soft courses for NGOs. It is harder to place these graduates when they are on our system." – Recruitment company

"There is a mismatch. Students with Peace and Conflict, Sociology. They try to get into NGOs. They believe it is a quick way. You don't need a test for the NGO." – University of Sierra Leone

"People train and come out with skills for NGOs, then they sit around waiting for a job" – Private company

"When the NGO sector was booming, people wanted to go into logistics, procurement, M&E for the NGOs. You see all the people with these skills now." – Private company

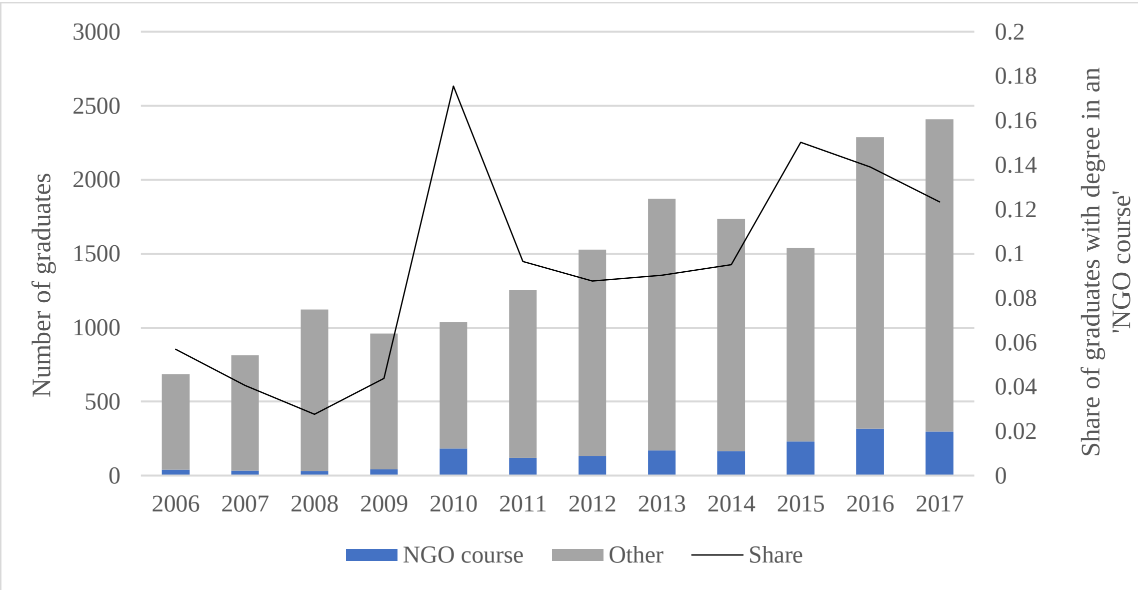
"There is skills mismatch. At the end of the day, they can't get jobs. Same with Politics and Peace and Conflict studies. Most people end up working in jobs not related to their field of study. People end up in these courses when they can't make the grades. We take some interns from Peace and Conflict Studies here. Sometimes the internships are for credits." – Local NGO

"Our work is on youth advocacy. We get funding from organisations like the EU, UNDP, UNESCO. We also take interns from NAYCOM. We recently hired someone with Mass Communication. She started as an intern. We train and mentor our interns. The pay is not much so we treat them well to encourage them to stay. Now she is a Youth Engagement Officer for one of our projects." – Local NGO

"We take interns from FBC and Milton Margai Technical Institute. We also get from the University of Makeni, Northern and Eastern Polytechnic in the provinces. We used to receive Law interns when FBC was running the Human Rights Mission Clinic. That used to be funded by UNDP. Now we take Peace and Conflict, Social Work and Mass Communications students from FBC." – INGO

The number of graduates with a bachelor's degree steadily increased across all faculties in the post-war period. Alongside this, the share of all undergraduates graduating with a degree in an NGO course increased from 5.7 percent in 2006 to 12.3 percent in 2017 (Figure 3.3). One of the main contributors towards the increasing share is graduates from the Peace and Conflict Studies degree course – the degree programme primarily cited by research participants as an example of a course designed for employment in the development sector. In 2010, the first cohort of 124 Peace and Conflict students graduated. This was an initial shock and the share of graduates with an NGO course increased significantly in that year (Figure 3.3). The share declined as the number of graduates from Peace and Conflict Studies reduced in subsequent years, though the effects of the course persist over time as it continues to be one of the most popular among students.

Figure 3.3: Students graduating with a bachelor's degree from the USL and share of which are in 'NGO courses'



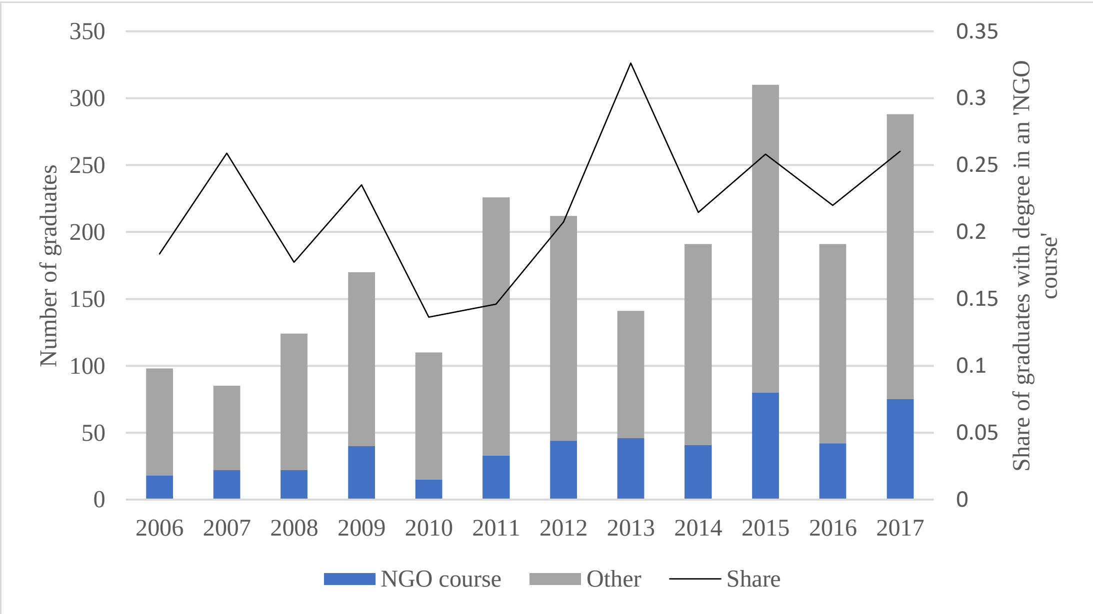
Data source: graduation booklet publication (University of Sierra Leone).

Since its introduction in 2010, 860 students have graduated with a bachelor's degree in Peace and Conflict Studies. The average over the eight-year period (2010-2017) is 108 graduates per year – the highest average for a single degree programme. Other NGO courses that have had a noticeable effect on the skills composition of graduates are Mass Communications (557 graduates since 2006

– a yearly average of 47 graduates) and Social Work (246 graduates since 2015 – a yearly average of 82 graduates).

At the postgraduate level, the number of total graduates and those graduating with degrees in NGO courses fluctuated over the period (Figure 3.4). The main courses contributing to postgraduate qualifications that are most marketable in the development sector are Gender Studies (105 graduates between 2006 and 2017) and Development Management (202 graduates between 2008 and 2017). Though the introduction of these (and other NGO courses) increased the numbers graduating with degrees in NGOs courses at the postgraduate level, the period also saw a large increase in postgraduates with qualifications in Accounting and Finance. Still, the share from an NGO course increased from 18 percent in 2006 to 26 percent in 2017. Though this share is larger in comparison to the statistics for undergraduate degrees, it should be noted that the total graduates from postgraduate courses is a mere 12.5 percent of undergraduates over the 2006-2017 period.

Figure 3.4: Students graduating with a postgraduate qualification from the USL and share of which are in ‘NGO courses’



Data source: graduation booklet publication (University of Sierra Leone).

I argue that the rise of NGO courses can in part be explained by the sustained inflow of aid in the post-war years, and the presence of the development sector that has flourished as a result. Skilled labour in turn now acquires skills that are demanded by the development sector. According to one employer:

> "When the NGO sector was booming after the war, people wanted to go into logistics, procurement, M&E for the NGOs. You see all the people with these skills now."[37]

This trend of acquiring skills for the development sector has continued given the increasing numbers of students enrolled in Peace and Conflict Studies, Social Work and Mass Communication – the three most cited degree courses that are almost exclusively marketable in the development sectors. According to a senior staff member at Fourah Bay College:

> "Every year the student numbers are increasing for Peace and Conflict studies and Sociology. They try to get into NGOs. The numbers are so many we have to have some lectures in the graduation amphitheatre outside."[38]

As mentioned above, there are other skills that are demanded by the development sector; skills which are transferable to other sectors – for instance training in Accounting, Finance, Economics, Project Management, and Procurement to name a few. These courses have not been coded as "NGO courses" in the preceding analysis although the presence of the development sector likely drives some portion of skills development in these fields.

In addition to influencing skills acquisition at the university level due to the employer role held by NGOs, INGOs and donor organisations, the development sector has also directly influenced courses offered via university collaborations. Given the extent to which Peace and Conflict studies was mentioned in the qualitative data, and the noteworthy effect the introduction of the course has had on graduate shares by degree in 2010 (Figure 3.3), I will discuss the establishment of the degree as an example of donor involvement in skills development at the university level.

In 2002, shortly after the war ended, the Department of Peace Studies at University of Bradford (UK) worked with Fourah Bay College, University of Sierra Leone, to establish the Centre for Peace and Conflict studies (Africa Centre, 2003). The main objective was for the University of

[37] Interviewee 36 (October 9, 2017)
[38] Interviewee 41 (November 21, 2017)

Bradford to assist the USL with curriculum development, staff development and to develop a viable long-term strategy for peace.[39] This was achieved with financial assistance from the Department for International Development (DFID) through the British Council Sierra Leone. Various UN organisations and civil society groups were also involved in the process.[40] According to the Africa Centre's (2003, p.5) report on establishing the degree:

> "An important component was the development of community outreach programmes such as Peacekeeping in Complex Political Emergencies for the Military in Sierra Leone in Basic Conflict Mediation and Resolution Skills for Civil Society Organisations"

The document discusses in detail 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 a BA. in Peace and Conflict Studies and the effects on the skills available in the Sierra Leonean economy more generally. This suggests that the effects on graduates' employability and the changes in the skills composition witnessed in the past years may be an unintended consequence, unforeseen by the development intervention.

Other examples of interventions by development partners noted by university staff include the masters programme in Public Policy which was sponsored by the Partnership for African Social and Governance Research (PASGR) and the resource centre at Fourah Bay College which was established with the support of the International Growth Centre (IGC).[41]

Though the demand for these so-called NGO courses have grown as a result of the presence of the development sector, and some were created with the assistance of the development community as

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[39] According to the University of Bradford's report on the establishment of the course (African Centre, 2003 p.1), the primary objectives of the Peace and Conflict Studies Centre, USL include:
(a) "Development of the professional and intellectual knowledge and skills of peace advocates and practitioners;
(b) Introduction of students and researchers to various aspects of peace and conflict studies;
(c) Provision of a sound academic foundation for graduate courses in peace and conflict studies;
(d) Provision of an enabling environment for researchers and practitioners to share ideas;
(e) Encouragement of academics and practitioners to conduct research on issues relating to peace and conflict, worldwide;
(f) Development of capacity for applied and practional-based research and conflict resolution-related skills, through community outreach programmes"

[40] Interviewee 41 (November 21, 2017)

[41] Interviewee 41 (November 21, 2017)

discussed above, these courses have also persisted in part because of institutional structures in Sierra Leone. For instance, according to staff from the USL, these courses are relatively cheap to run as no laboratories or special equipment are required; and the entry requirements are often lower than more mathematical Social Science qualifications (such as Economics, Accounting and Finance) and courses in the fields of Pure and Applied Science and Engineering.[42]

3.5. THE DEVELOPMENT SECTOR, SKILLS DEVELOPMENT AND THE IMPLICATIONS FOR GROWTH – EXPLORING A NEW CHANNEL OF AID DEPENDENCY

The preceding section established the development sector as a key player in skills development in Sierra Leone. This section now analyses how the skills that are developed as a result of the existence, actions and policies of the development sector, matter for growth and development. The discussion is framed around the two evaluation questions presented in section 3.2. Namely:

1. Has skills development in TVET and higher education, driven by the development sector, created human capital that can add to the endogenous stock of applied knowledge and feed directly into productive processes?
2. Has skills development in TVET and higher education, driven by the development sector, created human capital that can absorb, productively utilise and build on imported exogenous technology?

As stated in the introduction to this chapter, I take as given the calibre of skilled labour produced in Sierra Leone is lower than that of many other countries and the limitations of the education system with respect to quality assurance (World Bank, 2017). As discussed in section 2.4, employers adjust to quality issues through supplementary on-the-job training after recruitment. The analysis therefore evaluates if the *types* of skills acquired through donor influence is good for

[42] Interviewee 41 (November 21, 2017)

growth, conditional on quality of skills. As noted in section 3.3.2 of this chapter, there is empirical evidence that training in engineering and natural sciences are more consequential to growth than other areas (Lin, 2004). The skills composition is thus integral to growth.

The results presented below for TVET corroborates previous evidence, but with new data. For higher education the results and analysis are new, and is one of the fundamental contributions of the thesis.

3.5.1. Developing human capital that can lead to growth and development

3.5.1.1. *Technical Vocational Education and Training (TVET)*

> "UNDP also does some trainings and workshops. The issue here, and with some TVET programmes is accreditation. Some organisations do not accept these certificates."[43]

Assessing the first part of the first question above, there has been an increase in the stock of applied knowledge through donor involvement in TVET. This is visible from several donor reports that document the number of beneficiaries. The second part of the first question is concerned with the usefulness of the stock of skills and its ability to feed into productive processes. As discussed in section 3.4.2, there is little evidence on the employment outcomes of those benefiting from TVET programmes save for the evaluation of the World Bank's Youth Employment Support Project, which showed that those treated were 3.1 percent more likely to be employed, and 4.1 percent more likely to be a first-time entrepreneur (Rosas et al., 2017 p.13-14).

Many of the TVET and life skills courses that are supported by the development community, have not been recognised by formal sector companies.[44] Several private sector companies in the manufacturing industry were also unaware of these training programmes,[45] indicating that skills training was often not driven by industry demand. An exception to this is skills development around

[43] Interviewee 5 (September 8, 2017)
[44] Interviewee 5 (September 8, 2017); Interviewee 42 (November 23, 2017)
[45] Interviewee 14 (September 13, 2017); Interviewee 28 (September 29, 2017); Interviewee 29 (September 30, 2017); Interviewee 32 (October 3, 2017)

mining, which has occurred in consultation with mining companies.[46] As a result, the majority of beneficiaries of training programmes end up in/return to self-employment in the informal sector.[47] It follows that skills development in the TVET sector is likely to maintain or increase (but not decrease) the informal sector.

With respect to the second question above, the ability of those trained through donor sponsored TVET courses to productively utilise imported exogenous technology is ambiguous. Arguably, it may be unlikely that such workers would be able to utilise technology imported by formal sector companies given the current mismatch between their existing skills and those demanded by formal sector companies. That said, it is possible for new technologies to be imported and usefully adapted within the informal sector by these workers, or for new technologies to be imported in the formal sector that shift firms' demand towards skills that TVET has developed.

The result here is not new as the failure of donor-driven TVET programmes to meet local demands has been established in previous literature - see discussion in section 3.3.2.1 and in particular McGrath, (2002) and Palmer (2007). I have corroborated this story here, showing that this issue is also true for post-war Sierra Leone.

Though the result is not new, it is still an important story especially when assessed through the lens of general human capital and effective labour. Skills development by foreign development partners at the TVET-level has (for the most part) produced human capital specific to the informal sector. In line with human capital theory, it can be argued that marginal productivity of the self-employed has increased as welders, carpenters, tailors and seamstresses say, are more productive and have some basic level of financial and business skills specific to micro and small enterprises. There is little evidence of general human capital and little/no marginal productivity gains being accrued to formal sector companies. This has implications for growth and development as previous research

[46] Interviewee 16, (September 13, 2017); Interviewee 42 (November 11, 2017)
[47] Interviewee 6 (September 11, 2017); Interviewee 18 (September 18, 2017)

has shown that growth comes from the formal sector, informal firms tend to have lower productivity (than formal ones) and informal firms rarely transition to formality (La Porta and Shleifer, 2014).

3.5.1.2. Higher education

> "“People train and come out with skills sets for an NGO, then they sit around waiting for a job.”[48]

At the university level, the direct involvement of development partners in establishing courses such as the BA. in Peace and Conflict Studies and MSc. in Public Policy has led to an increase in the stock of knowledge and the graduates in the labour market in fields that may have otherwise not existed. Less directly, intervention at the lower levels, at primary and secondary schools, have influenced the numbers of students passing through the system to the university level. Hence, with respect to the first part of question one above, there has been an increase in the stock of skills/knowledge.

For the second part of the first question (on the use of skills influenced by the development sector at the university level for productive activities), this is more complex and can be considered in two ways. It should be noted that there is no systematic data on the observed employment outcomes of graduates over time and by degree. Therefore, to assess this criterion, I turn to interview data on the skills that are demanded by employers, and survey data on sectors of preferred employment by graduates *ex ante*. Both of these data were collected for this study.

Firstly, if we assume that preferred employment is correlated with actual employment, then the data suggest that graduates trained in NGO courses are most likely to be absorbed into the development sector. Applying a simple chi-squared test to the incentivised occupational choice data and course data from the survey data conducted for this study (see section 1.5.2 of chapter one for a description of the data collection methods), there is a statistically significant relationship between degree completed and preferred sector of employment (Table 3.2).

[48] Interviewee 29 (September 30, 2017)

Based on the relative frequency of NGO courses in the sample, we would expect 60 graduates to choose the development sector.[49] Instead we observe 83. When employed at a development sector organisation, graduates work towards international development objectives and new skills are developed on the job. This can be good for growth and development, depending on the aid-growth nexus in the country. Previous evidence specific to Sierra Leone suggests that aid has been good for growth (Kallon, 2014), but growth-effects can be attributed mainly to grants and not technical assistance (Kargbo and Sen, 2014).

Table 3.2: Sector choice versus degree of study ($n = 392$)*

	Public Sector	Private Sector	Development Sector	Self-employment	Total
NGO-course	36 (51.7)	14 (21.7)	83 (60.1)	4 (3.5)	137
Other course	112 (96.3)	48 (40.3)	89 (111.9)	6 (6.5)	225
Total	148	62	172	10	392

Pearson's Chi2(3) = 25.029 Pr = 0.000
*Expected values based on relative frequencies are given in parentheses.
Source: Author-collected survey data

Secondly, the ability of other sectors to absorb and utilise development-oriented skills for productive activities is also important to understanding the overall effect. For some degrees, there is a high level of transferability – for example an Accountant, Procurement Specialist or Project Manager at an NGO is able to transfer and utilise some of these technical skills at other organisations. However, this is unlikely to be true for all types of skills. A dominant theme from both graduate focus group discussions and employer interviews was the inability to transfer certain skills across sectors. In particular, NGO courses have little demand by employers outside of the

[49] The expected frequency is given by: $\frac{(row\ total \times column\ total)}{total\ obersevations}$

development sector, and graduates with these degrees often experienced increased difficulty in finding employment.

From the interview data, private sector companies had a higher demand for graduates with a background in Accounting and Finance, Economics, Commerce, Natural Sciences (Mathematics, Chemistry, Geology), Engineering (Mining, Mechanical and Civil mainly; with a few mentions of Automation and Roaming Engineering, though the latter two are not currently offered in Sierra Leone). The development sector mainly recruited individuals with a background in the Social Science fields above (as finance personnel is needed for all projects), Project/Programme Management, Peace and Conflict Studies, Political Science, Mass Communication, Social Work, and Adult Literacy and Community Development. The public sector recruited from a range of disciplines, but also perceived some courses such as Peace and Conflict Studies (see Box 3.1) to be more suited for the development sector.

In the terminology of Becker's (1964) framework, skills training can be dissected into general and specific human capital. Some training acquired for work in (or through working with) a development organisation can be general training, which contributes to the stock of general human capital and increases the marginal product of labour across many sectors. Examples of this include training in Accounting, Procurement, Project Management, Monitoring and Evaluation. On the other hand, many NGO courses such as Peace and Conflict Studies offer specific training and cultivate specific human capital, which based on reported employer demands, is more likely to increase marginal productivity in the development sector in comparison to other sectors.

The second question assesses if human capital developed can absorb and productively utilise imported exogenous technology. This is again influenced by the type of training, that is, general versus specific human capital. To evaluate this, we first need to consider the content of the courses, and secondly what imported technology might look like. A common criticism among employers was that the courses at the universities were out-dated and had not been developed alongside changing technologies. This critique was levied across all types of degrees – both NGO courses and others. Staff would often be further trained (to use certain equipment, analyse data and/or write reports, for example) for a period of a week up to six-months (depending on the organisation) to a level that was deemed appropriate by their employers. Extrapolating from this experience, human capital developed at the university, with some further training is likely able to utilise some forms of imported technology.

Albeit, adaptation of imported technology may be sector specific. Those trained for employment in the development sector may be able to easily adapt to imported technologies in the development sector. Whether (or not) graduates trained in NGO courses are able to utilise imported technologies outside of the development sector is empirically unknown, but arguably unlikely as concerns related to transferability of skills also become relevant here. If graduates of NGO degrees are currently unable to successfully transition to non-development employment and utilise existing technologies, it follows that there would likely be difficulties utilising new imported technologies outside those that relate to the development sector.

In sum, the effects of development-sector influenced skills development on economic growth is ambiguous as discussed above; and is likely contingent on the transferability of skills and whether these skills increase marginal productivity across many sectors in the economy, or are limited to the development sector only. The qualitative evidence suggests that the latter is more likely to be true, which gives rise to the hypothesis that skills development is a potential channel of continued dependency on aid. In other words, the development sector's role in skills development may negatively affect endogenous growth and lead to further aid dependence. The following section further develops these arguments.

3.5.2. Skills development as a new channel of continued dependency

The development of skills for and by the development sector is potentially another channel though which developing countries could remain/become more dependent on aid if the skills composition shifts in such a way that the stock of skills is not able to meaningfully contribute to growth. 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. Thus, the transferability of skills as a binding constraint is central to the aid-skills-growth nexus, and possible manifestations of an aid curse. For both TVET and degree qualifications, 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).[50]

Firstly, if skills developed through TVET skills development programmes are not cognisant of the skills demanded by the formal private sector, a segment of the population is trained, but not necessarily (wage) employable. The hypothesised outcome is continued skills shortages in the formal sector and continued self-employment in informal jobs.

Secondly, once the development sector is an attractive employment choice, some proportion of the population will attain skills for employment in this sector instead of other sectors. Chapter four of this thesis shows that the development sector is indeed an attractive choice as 44 percent of university graduates surveyed opt for early career employment for an NGO, INGO or donor organisation. Developing skills for employment in the development sector is similar to a resource movement effect; but is not simply a movement of the current labour force from other sectors to the development sector, but a systematic phenomenon where the future labour force develops skills for employment in the development sector. A shift in the types of skills acquired today therefore has consequences for skills available to firms demanding labour in both the present and the future.

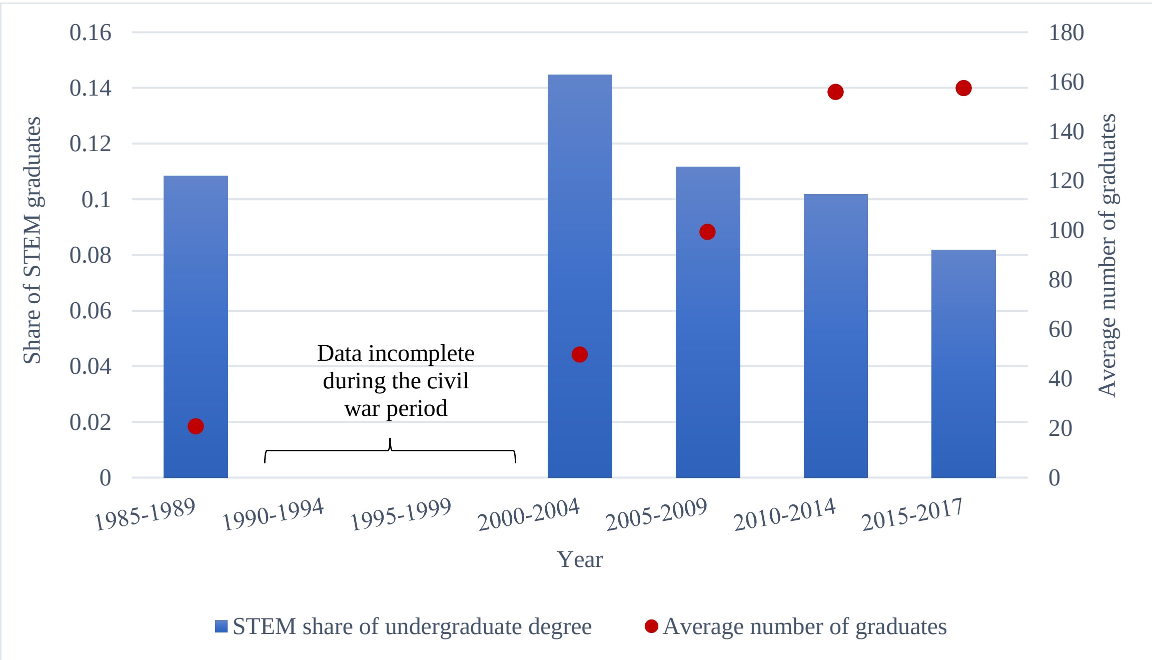
If skills acquired for employment in development organisations, by being employed in the development sector or via training by development partners are not transferable to the private sector (including manufacturing), one potential the outcome is likely to be slow/no growth in the formal private sector if companies that wish to expand employment are unable to access appropriate skills. This is evident in Sierra Leone as several companies interviewed reported skills gaps in technical areas related to science, technology, engineering and mathematics (STEM) subjects. Technical skills were also the largest gap reported in Mannah and Gibril's (2012) study across all sectors -

[50] This does not mean that growth cannot derive from other sectors in the future, but past trends point to the manufacturing sector as a key driver of growth.

see Table 2.6. This technical skills gap persists while we simultaneously observe an increasing supply of skilled workers.

This suggests that the right types of skills are not readily available, and as I have argued, this is in part due to the ongoing presence of the development sector. For instance, the rise in the share of graduates with NGO courses at the bachelor's level has been accompanied by a decline in graduates with STEM qualifications (Figure 3.5). In comparison to the five-year average just after the war, the current average share is 6.3 percentage points lower, and 2.7 percentage points lower when compared to pre-war shares (1985-1989). 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). In absolute terms, the five-year averaged increased during the 2000-2015 period, but has remained constant over the past three years.

Figure 3.5: Five-year average share of STEM graduates 1985-1989 and 2004-2017*



*The data for the period of the civil war is incomplete, and thus excluded here.
Data source: graduation booklet publication (University of Sierra Leone).

Using secondary data, there is a negative relationship between ODA and the share of STEM graduates (Figure 3.6 - Figure 3.8). The graphs use ODA data from the World Development Indicators, STEM graduates' data from the OECD World Indicators of Skills for Employment dataset (2003-2013) and from the UNESCO Institute for Statistics database (2014-2017). STEM data for Sierra Leone is absent from both the OECD and UNESCO databases and is instead obtained from the University of Sierra Leone. The STEM data from the OECD and UNESCO have several missing entries across years for many countries. Due to this, five-year averages are taken (rather than interpolating for missing years). Still, the number of observations varies across each five-year period, some countries appear in one graph but not others. For example, data is only available for Uganda for the period 2003-2007 and for Liberia for the period 2008-2012.

I argue that this negative relationship is likely bi-directional. On one hand, countries with weaker education systems are less capable of producing STEM graduates given their current infrastructure and human capital levels and these countries attract more aid. On the other hand, and one of the main arguments of the thesis, is that the continued inflow of aid changes the incentives of agents in the labour market and courses chosen by those obtaining degrees (as they demand more skills for employment in the development sector). As shown in Sierra Leone, the skills change associated with a large and persistent development sector has been away from STEM subjects.

Figure 3.6: Share of STEM graduates versus ODA as a share of GNI 2003-2007 ($n = 51$)

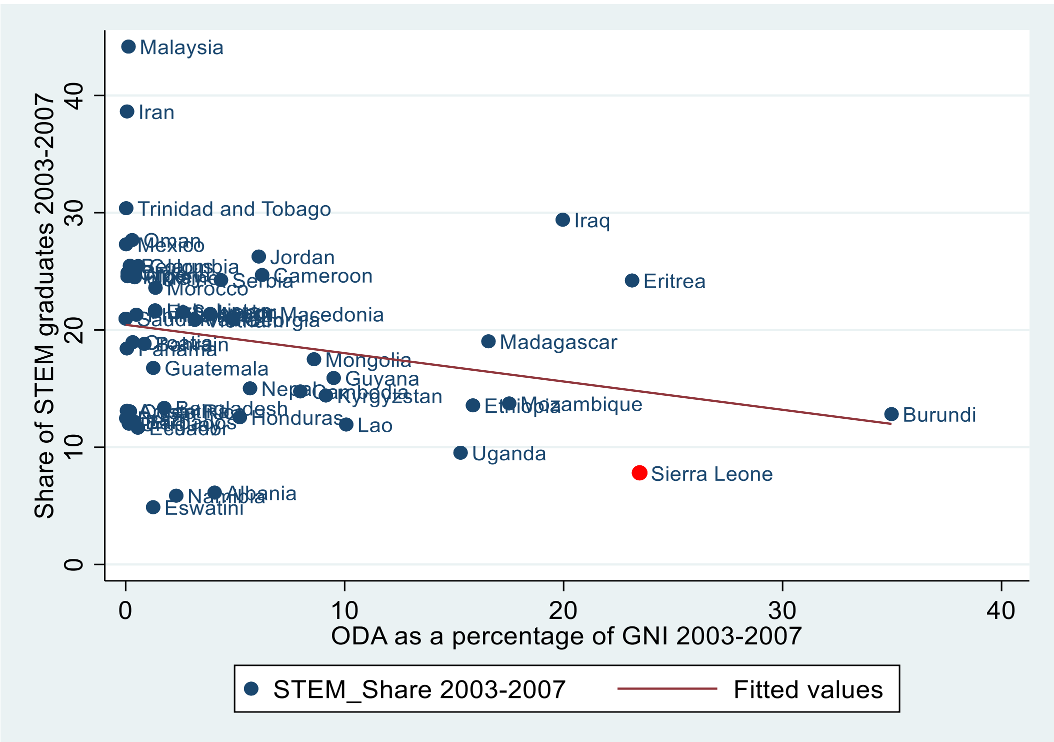


Figure 3.7: Share of STEM graduates versus ODA as a share of GNI 2003-2007 (n = 63)

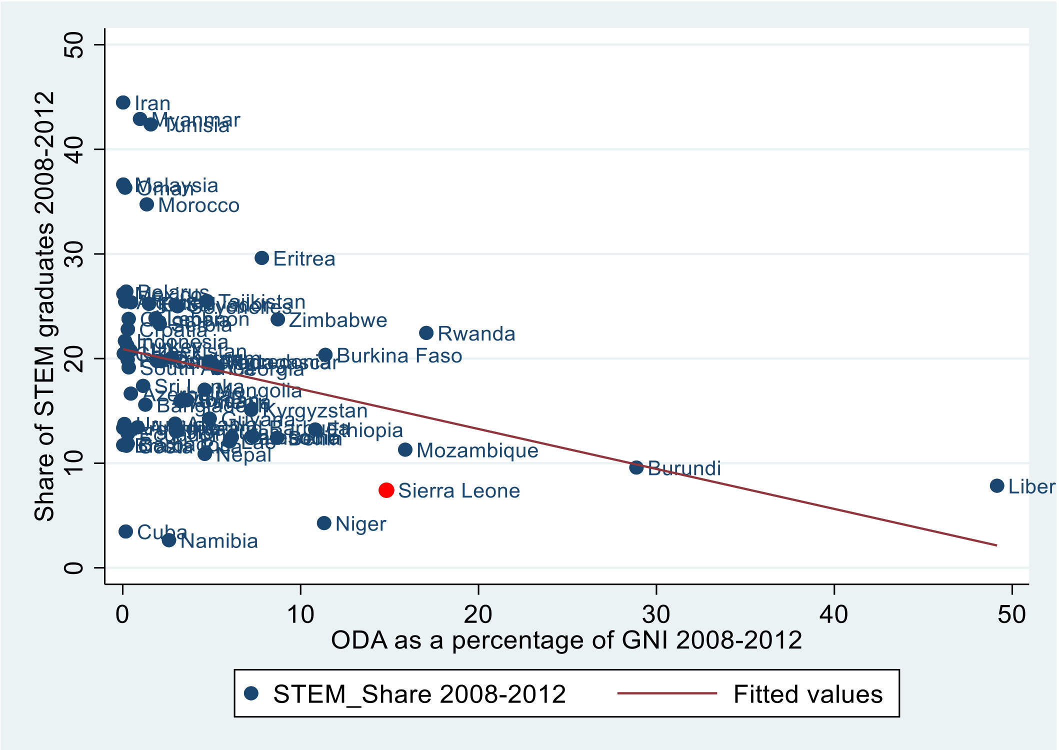


Figure 3.8: Share of STEM graduates versus ODA as a share of GNI 2003-2007 (n = 76)

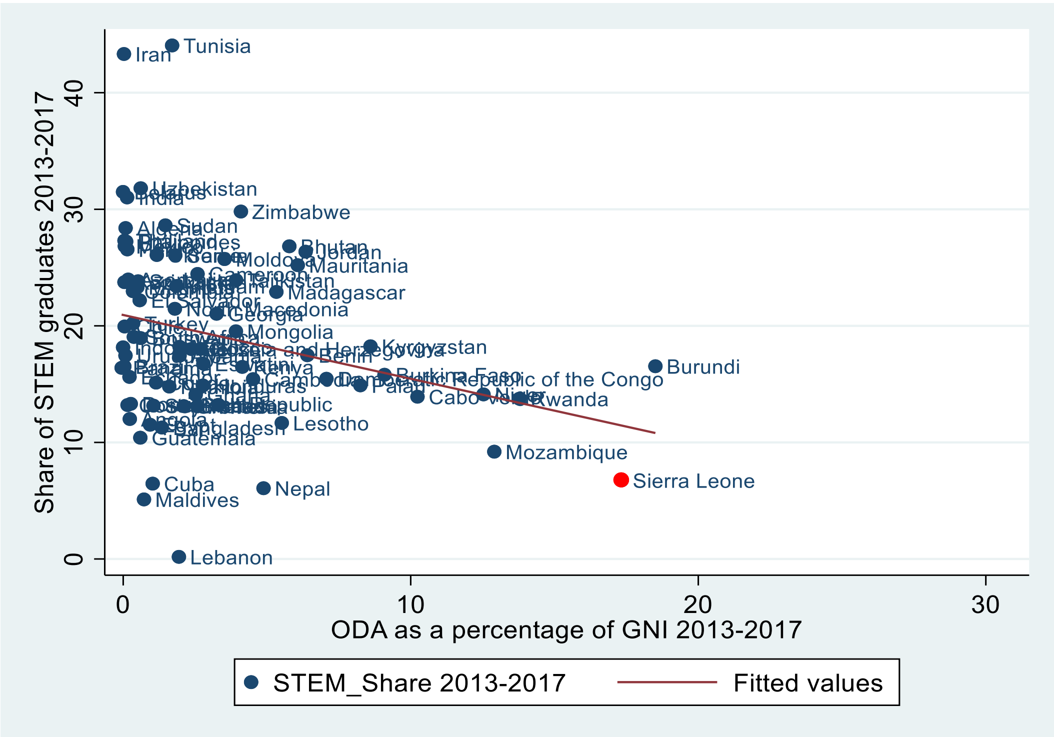


Figure 3.6 - Figure 3.8 are contemporaneous cross-plots. One can imagine a lagged relationship, where an aid intervention changes the skills composition a few years later. We would expect this

at the degree level where course durations range from three to five years globally. Taking five and ten-year lags, a negative relationship is still evident (Figure 3.9 and Figure 3.10).

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 in the extractive sector increases the marginal product of mobile factors in that sector, and draws resources from other sectors giving rise to what the authors called "direct de-industrialisation" (Corden and Neary, 1982 p.827-830). Here I argue that if skills are not developed for other formal sectors of the economy to begin with (such as manufacturing and some service sectors) in favour of the development sector, then it becomes increasingly difficult for some sectors to establish and operate in a way that is viable. The process is a movement in human capital investment which affects the future labour force, rather than a resource movement of the current labour force.

Figure 3.9: Share of STEM graduates 2003-2007 vs ODA as a share of GNI 2008-2012 ($n = 64$)

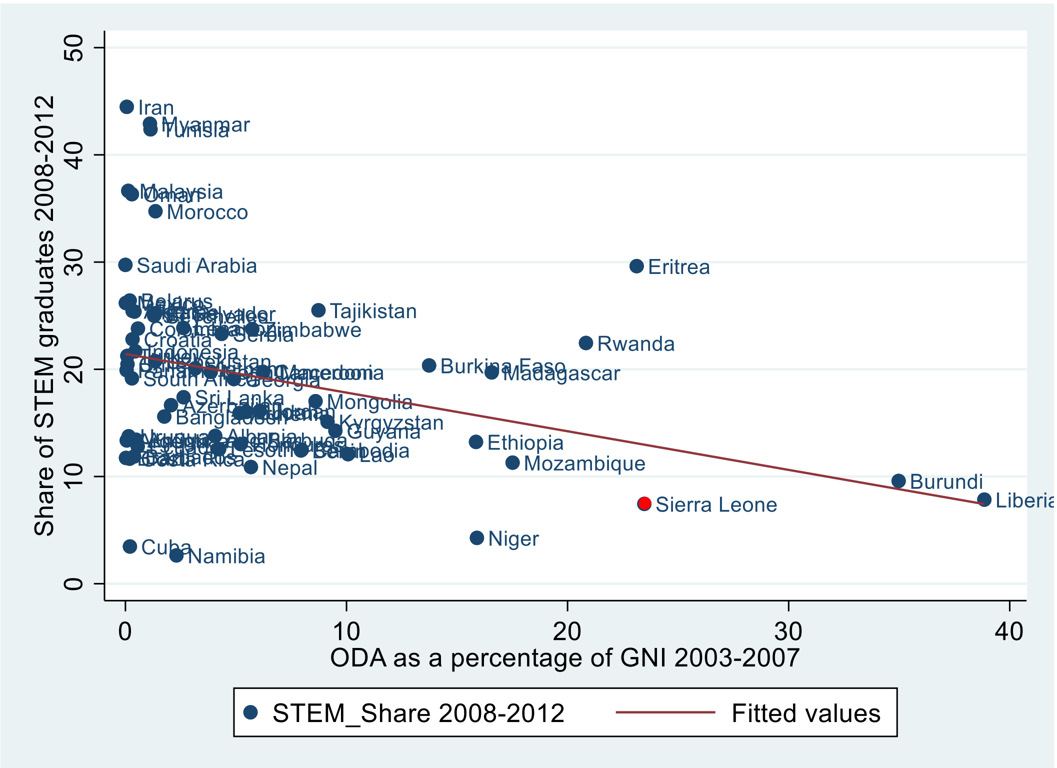
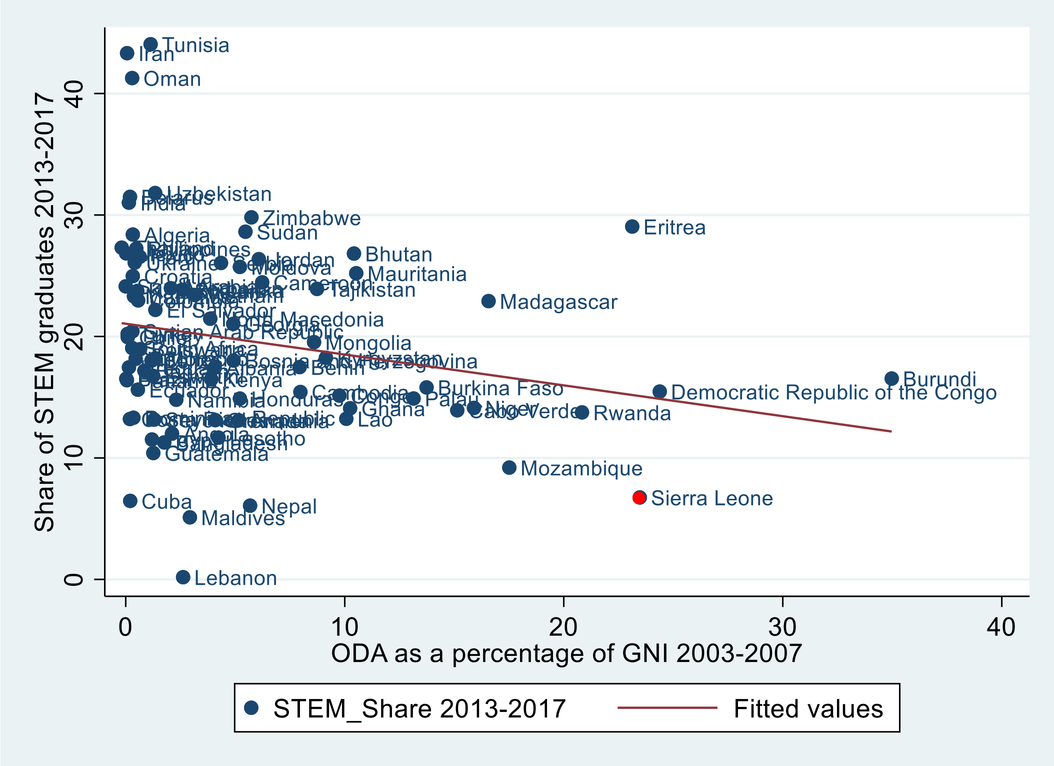


Figure 3.10: Share of STEM graduates 2003-2007 vs ODA as a share of GNI 2013-2017 ($n =$ 83)



One can argue that such adjustments to human capital investment are efficient responses to sustained inflows of aid. In other words, if development sector organisations are a stable feature of the economy and they demand certain skills, investment in such skills is simply driven by the market. However, if we believe that future growth comes from non-aid sectors, which is what is suggested based on data from other countries, a shift towards development sector oriented skills is thus a potential growth problem as countries like Sierra Leone are denied of the stock of skills needed to spur growth.

Moreover, there is also the issue of reduced capacity to train and develop certain skills in future human capital. For instance, as the share of STEM graduates declines, in 20 – 30 years' time say, capacity to teach STEM locally will be lower than present levels given the skills deficit of recent additions to the human capital stock. The process of reducing capacity in STEM subjects is analogous to what Collier and Duponchel (2013, p.56) refer to as "forgetting by not doing" in their analysis of the long-term effects or economic legacy of deskilling during the Sierra Leonean civil war.

The negative effects on the stock of human capital from a large and persistent development sector are likely more pronounced in countries like Sierra Leone where resource constraints often result in periods of inertia in many systems and institutions. This in turn increases the potential period needed to "restock" the human capital stock in relation to other more endowed countries. Hence, adjustments in the skills composition from temporary shocks (like introducing a BA in Peace and Conflict Studies) has the potential to have permanent (and possibly harmful) effects on long-run growth, all else constant.

In such cases, the aid-receiving country then becomes further dependent on development partners. As argued by dependency theorists, the interactions between the dominant (donor) country and dependent state reinforces and intensifies unequal patterns in economic development (Ferraro, 2008). Martinussen (1997, p.89) notes that being 'under-developed' according to dependency theory is "a process and not a state". Here, it is the process of skills development over time as the development sector becomes an ongoing actor in the local economy. It is the effect of aid on the labour market and skill composition that has potential implications for sustainable, home-grown development, and is thus a possible channel which can perpetuate aid dependency.

3.6. CONCLUSIONS

The ongoing presence of a large donor sector changes the skill composition in the labour market. The mechanisms through which this outcome materialises includes skill-development programmes that are funded and implemented by organisations in the development sector; and importantly, individual decisions in the labour market as it relates to skills development.

With respect to skills development in TVET, the findings show that direct donor influence on skills development is poorly linked with market needs. This has been previously documented, and my results add contemporary evidence to this debate. The response to this has been, and is likely to continue to be, improved collaboration when planning and implementing these programmes.

The contribution of this chapter is the evidence put forward specific to the highest skill levels on the direct effects - through collaborations in establishing new university courses; and the indirect impacts – through donor, NGOs and INGOs demanding skilled workers as employers. These effects are often not considered, and one would expect harder to respond to, as it is the ordinary day-to-day operations of development partners that change the skills composition in the aid-receiving country. From the evidence presented here, the change in the skills composition has been a gradual shift towards NGO-demanded skills at the degree level, away from skills related to STEM subjects which are demanded by the private sector. Responding to these issues requires critical reflection on how the development sector operates and what operations mean for skills development and the labour market. There also needs to be a concerted effort to develop human capital that is demanded by and can be absorbed into the formal private sector. Without this, the outcome may be continued dependence on foreign aid and the development sector by small LIC countries like Sierra Leone.

The current chapter has not tested the hypothesis that there is a causal relationship between ODA and the share of STEM graduates; but has put forward arguments as to why skills development is a possible mechanism in the aid-growth nexus. Chapters four and five of the thesis further explore the attractiveness of the development sector as an employment option for early-career graduates.

CHAPTER 4 – OCCUPATIONAL CHOICE OF SKILLED WORKERS IN THE PRESENCE OF A LARGE DEVELOPMENT SECTOR

4.1. INTRODUCTION

Much of the labour economics literature on skilled workers in developing countries has focused on questions related to aggregate supply of and demand for high-skilled labour, and on overall wage determination in the market for skilled workers. In contrast, research on the underlying drivers of the labour supply decisions of high-skilled individuals in these environments is relatively scarce.

This chapter is concerned with deepening our understanding on how the interplay between individual preferences (such as intrinsic financial and prosocial motivations, attitudes towards risks and uncertainty, and desires for social status), specific characteristics (such as education or measured abilities), and beliefs about the labour market determines eventual occupational choice in low-income contexts. Important to the analysis, and a key contribution of the chapter, is the introduction of the development sector as an option for skilled labour in an occupational choice model. In so doing, the chapter provides new empirical evidence of the attractiveness of early-career employment in the development sector among university graduates.

Situated primarily within the job-sorting/occupational choice literature, this chapter addresses four specific questions in a LIC context:

i. Is the development sector an attractive sector for employment among skilled workers?

ii. Do skilled jobseekers sort based on cognitive ability at the sector level?

iii. Do skilled workers sort based on measured preferences (risk, time preferences, prosociality, financial motivation and desire for status) as predicted in the "mission matching" literature?

iv. Do perceptions of different sectors matter for occupational choice?

In order to explore these questions, a combination of survey and experimental methods from behavioural economics was used to study occupational choice and job search behaviour of university graduates in Sierra Leone.

The chapter adds to the body of existing literature in a number of ways. Firstly, by positioning the development sector as a third sector and a viable sector for employment. This is a novel approach of the chapter, and by extension the thesis. Secondly, by testing matching models on skilled workers – an under-studied population in labour markets of developing countries. Thirdly, by introducing cognitive ability into the matching model framework. And fourthly, by introducing a measure of perceptions/beliefs into the standard occupational choice model.

A key finding of the chapter is the significance of cognitive ability to sector choice. Higher ability workers are more likely to choose the development sector over the public sector. This finding speaks to policy and should encourage development organisations to reflect on their impact on the dynamics of the labour market in the countries in which they operate; and the public sector to reflect on its competitiveness as an employer. The results also show that skilled graduates sort by measured preferences to some extent, but these motivations are secondary to jobseekers' perceptions of benefits across various sectors and the opportunities available in the various sectors. This result implies that "mission matching" based on measured preferences may be inhibited in contexts where employment possibilities are limited.

The rest of this chapter is structured as follows. Section 4.2 presents an overview of key theories and empirical findings which have influenced the discourse to date, and from which the research questions were borne. Section 4.3 discusses the methodological approach to answering these questions (with respect to both lab-in-field experiments and empirical estimation methods). Section 4.4 presents the main descriptive findings relating to attributes and sector choice. Section 4.5 presents the Multinomial Probit regression model of occupational choice and discusses the findings. Section 4.6 concludes.

4.2. OCCUPATIONAL CHOICE IN DEVELOPING COUNTRIES – A REVIEW OF THE LITERATURE

Job sorting and matching models are relatively new themes in labour economics in developing countries. Past research into labour markets in developing countries primarily focused on labour market outcomes rather than drivers of worker behaviour. An extensive body of research addresses wage differentials and employment on the basis of formality, education and productivity in developing countries (Falco et al., 2011; Kingdon et al., 2005; Nordman et al., 2011; Rankin et al., 2010; Satchi and Temple, 2009; Teal, 2011b). Within this literature, the role of labour market institutions such as employment protection legislation, trade unions and minimum wage legislation has also been addressed (Almeida and Aterido, 2011; Bhorat et al., 2015; Freeman, 2010; Kugler, 2004). These studies, along with review papers by Berry (2008), Fields (2011) and Frölich and Haile (2011), provide a broad overview of labour market analysis in developing countries, within which this research sits. There are, however, limitations with this body of research.

First, as Schler et al. (2009) argue, the perspective of the researched is absent from the discourse, as few studies have used survey methods to understand the beliefs held by labour market participants before permanently entering the labour market. Second, many of the above studies separated labour markets into formal and informal sectors, drawing on the seminal works of Lewis (1954) and Harris and Todaro (1970). Maloney (1998) showed that movement between the formal and informal sector was often fluid, and separation between the sectors was less rigid than initially conceptualised. And third, studies on returns to education have assumed that individuals are indeed able to find jobs and earn wages, as studies compare the wages of those employed who have different levels of education; but this assumption may not hold if labour markets fail to generate employment. Evidence put forward in Pritchett (2001), Kingdon et al. (2005) and Statistics Sierra Leone (2015) show that graduates have not been easily absorbed into employment. In several African countries studied, growth in the labour force was at least four times as large (and even up to 29 times as large) as changes in wage employment (Fields, 2011).

Taken together, incentives, opportunities and choice become important to the debate. Understanding how people in developing countries are working, and why they have chosen a job is imperative, as this information is vital to labour policy. The rest of this literature review separates a selection of pertinent studies based on two overarching themes: (i) mission matching and occupational choice, and (ii) risk preferences and occupational choice. The section concludes by discussing the contributions of the present research to the occupational choice literature.

4.2.1. Mission matching and labour supply – prosocial and financial motives

Besley and Ghatak (2005) theorised that workers and sectors match based on a given mission, such as philanthropy, profit maximisation, or social efficiency. It follows that if preferences are important to occupational choice, there is "mission matching". The experimental economics literature has tested this to determine if workers 'match' to a sector/occupation based on prosocial or financial motives.

Serra et al. (2011), Ashraf et al. (2014) and Deserranno (2019) studied health workers to determine whether those who opt into the sector are philanthropically/socially driven; and whether such 'mission matching' leads to organisational efficiency gains, as theorised by Fafchamps et al. (2009). Serra et al. (2011) show that mission matching occurs as those with higher prosocial motivation are employed in the lower-paying non-profit sector; and Deserranno (2019) shows that individuals who are more profit-driven were more likely to apply for a higher paying job. In contrast, Ashraf et al. (2014) find that prosocial preferences were equal across groups exposed to different advertisements for the same job. The different advertisements were intended to capture varying prosocial versus financial motivations (Ashraf et al., 2014). The mission matching theory predicts that higher prosociality is correlated with applying to more 'community-based' jobs.

Ashraf et al. (2014) and Serra et al. (2011) implicitly assume a trade-off between financial and prosocial motivations, or a crowding-out effect, as posited in Bénabou and Tirole (2006). Results from Deserranno (2019) confirm this assumption, but it is contested by Dal Bó et al. (2013). In Deserranno's study, individuals in the high-pay treatment were 17 percent more likely than the low-pay group to perceive the job as an income-earning role, rather than a vehicle for improving health in the community (Deserranno, 2019 p.280). On the other hand, it has been shown that higher wages attracted higher quality public-sector workers in Mexico (proxied by higher reservation wage, IQ, and personality traits), who were also more motivated (Dal Bó et al., 2013). This conflicting result indicates that the results may be different across different groups and countries – for example, lower skilled rural health workers in a low-income country (Deserranno, 2019) versus higher skilled non-health workers in a middle-income country (Dal Bó et al., 2013 p.1174).

The first aspect of matching relates to attracting the 'right type', as described above. The second aspect entails the efficiency of the match. Deserranno's (2019) findings show that higher financial incentives increase the application pool and the likelihood of filling vacancies - consistent with Dal Bó et al. (2013) - but negatively affect retention and performance. Deserranno's (2019) results can be explained by a costly crowding-out effect, as put forward in Bénabou and Tirole (2006). Another factor affecting Deserranno's (2019) results is the design of the experiment. Characteristics of the applicant pool are likely to be affected by the treatment, as individuals with weaker prosocial preferences were more likely to apply to the high-paying treatment in the study. This contrasts contrast with Ashraf et al.'s (2014) results which show that rewarding career incentives (as a proxy for financial motives) did not negatively affect performance, but instead was associated with more effective health service delivery.

4.2.2. Risk preferences and occupational choice

Empirical studies testing the 'mission matching' hypothesis have been silent on risk preferences in decision-making. The results may change if these are included. Falco (2014) explores risk preferences, and how these affect the choice between informal employment or queueing for a formal job/unemployment in Ghana. In Falco's (2014) study, risk is modelled in two ways: (i) uncertainty in job search and (ii) uncertainty in income, conditional on being employed (Falco, 2014). Risk preferences were elicited in 2007 and matched with 2004–2006 employment data. This may lead to a case of reverse causation. The author argues that risk preferences influence the choice of informal sector/queuing for the formal sector; however, it may be the case that being in a sector (between 2004 and 2006) could have influenced the risk preferences measured in 2007.

Falco (2014, p.105) argues that such endogeneity is unlikely to be the case by presenting the idea that "attitudes to risk are largely inheritable and therefore exogeneous to labour market outcomes in adulthood." Though this assumption has been used in previous studies, preference stability is still widely debated (Andersen et al., 2008; Chuang and Schechter, 2015). Empirically, Falco (2014) shows that risk-averse workers are more likely to queue for formal jobs (especially younger, more educated risk-averse workers). Risk-aversion decreases with the likelihood of informal employment.

Blattman and Dercon (2016) study occupational choice using a small randomised control trial on low-skilled entry-level jobs in five industrial firms across Ethiopia. One component of the study explored risks in industrial settings related to working conditions. Industrial jobs are poorly paid and risky in terms of health and other occupational hazards, yet these jobs are taken up by workers. Turnover was however very high as workers left not only their firm of employment, but the sector altogether. A year after the intervention, only 32 percent of those assigned to an industrial job still worked in the sector, with many reporting leaving the job without having an outside option (Blattman and Dercon, 2016 p.16). The authors reason that this may be because applicants were not fully aware of the risks and occupational hazards *ex ante* or had limited knowledge and accepted these jobs while searching for better options.

4.2.3. Contribution to the occupational choice literature

The papers reviewed above have all explored labour supply experimentally and contributed to the literature in various ways. From these papers we have learnt that financial incentives increase the application pool (Dal Bó et al., 2013; Deserranno, 2019) and may improve performance (Ashraf et al. 2014) or crowd out more prosocial applicants (Deserranno, 2019), who may opt for a philanthropic mission over financial gain (Serra et al., 2011). Risk preferences matter for occupational choice (Falco, 2014); but knowledge of some occupational risk may be limited *ex ante* (Blattman and Dercon, 2016). Moreover, employment may not be the objective in itself, but instead quality employment (Blattman and Dercon, 2016). Given the contribution of these papers, there remains great scope for further research in this area, which this chapter aims to contribute to.

First, the present research brings together the literature on mission matching (financial versus prosociality) and utility preferences (risk-based matching) in one model and introduces the development sector as a viable occupational choice. Time preferences and desired social status are also added as explanatory variables. There may be a confounding effect of risk and time preferences in the context of employment. For example, a jobseeker who prefers a short-term contract may be a risk-taker, or myopic in the employment choice. Including both in the model can separate marginal effects. A measure of cognitive ability is also included to determine if this matters for sorting across sectors. It has already been established that job-sorting at the firm level is associated with level of education (Fafchamps et al., 2009). Another innovation is the introduction of the development sector as a third sector, or a choice in its own right. Given the size and continued presence of the development sector in many developing countries, it is expected that graduates will consider the development sector as a viable option when choosing employment.

Second, the research questions are applied to skilled workers, an under-researched group. Falco (2014) assumed free entry into the informal sector. This may not be true for highly skilled workers, who may engage in more capital-intensive entrepreneurship, with potential barriers to entry. Similar arguments can be made about the studies by Andersen et al. (2014), Abebe et al. (2016) and Blattman and Dercon (2016), who all randomize over entry-level low-skilled workers. These models may therefore not fit skilled workers. Arguably, low-skilled workers comprise the biggest share of the labour force in developing countries, but this does not preclude research on the labour supply decision of skilled workers. In fact, this area is increasingly relevant given the push to produce a ‘skilled’ labour force in many developing countries and higher levels of financial support for education by both donors and national governments associated with this cause.

Third, this research seeks to introduce perceptions into the occupational choice discourse. Neo-classical models assume that agents are rational and make utility-maximising decisions with complete information. This chapter will look beyond this assumption and consider individual beliefs and perceptions about different employment sectors. These perceptions may be influenced by socio-economic status/information asymmetries, and may in turn affect aspirations and choices made. Decision-making is driven by both incentives and biases in probability judgement or heuristics (Delavande et al., 2011; DellaVigna, 2009). The role of beliefs will be introduced to determine whether/how these interact with intrinsic preferences and occupational choice. For instance, beliefs may taper motivations and/or determine occupational choice if choice is based on beliefs about the structure of the labour market rather than intrinsic attributes/preferences.

4.3. METHODOLOGY

In this section, I first describe the theoretical model which underlies the empirical strategy used to analyse the data in section 4.5. This is a random utility model which allows the estimation of the probability of choosing a sector for employment, conditional on individual characteristics. Subsequent to presenting the theoretical model, I describe the experimental methods used in the study to measure latent individual traits. These traits include risk preferences, time preferences, prosocial behaviour, desired status, financial motives and cognitive ability; and enter the regression model as covariates. Section 1.5.2 of the introductory chapter described the survey in general. I do not repeat this here, but only focus on the experimental methods as these are relevant to the present chapter.

4.3.1. Theoretical framework underlying the empirical strategy

The theoretical framework underlying the empirical model of occupational choice is a Random Utility Model (RUM), drawing on the formative works of McFadden (1973) and Manski (1977); and more recent formulations in Cameron and Trivedi (2005).

In the model, the decision maker/agent is a student who performs a choice operation based on a decision rule. A finite population of decision makers, N, is assumed to exist. This finite population is given by the number of undergraduate university students who are in the final year of the degree programme, excluding those enrolled in medical or teachers' training colleges.

4.3.1.1. Utility and sector choice

U_i is a real-valued utility function of decision maker i. Decision maker i selects a sector for employment j, from the finite choice set $C: j \epsilon C$ such that $U_{ij} \geq U_{ij'}$, for all $j' \epsilon C$. The choice set is defined across four sectors: the public sector, wage-employed private sector, wage-employed development sector and self-employed.

The public sector is as commonly defined and refers to institutions that are part of central government, line ministries, state own enterprises, parastatals or any other state owned and operated agency. The wage-employed private sector covers organisations that are privately owned in the formal sector. The wage-employed development sector comprises organisations whose primary objective is promoting economic and social development in the local country (save for the public sector), through policy, advocacy or implementation. This includes local NGOs, INGOs and donor organisations. Another commonality across these three types of organisations is external sources of finances as funding to NGOs, INGOs and donor organisations derive from aid (either bilateral or multilateral ODA or private donations). And finally, self-employed refers to entrepreneurship. A distinction is not made formal or informal self-employment.

Implicit in a sector-level analysis is the assumption that there are commonalities across jobs within each of the sectors, and differences between the sectors to allow sensible groupings such that similar types of individuals are likely to sort across sectors and match based on these sector characteristics. I argue that this is indeed the case given the different "missions" across the sectors, the types of contracts offered and the visible signs that communicate prestige.

Both the public and development sectors are seen to have a duty to contribute to society, while private sector institutions have a mandate to maximise profits. The majority of private and public sector jobs in Sierra Leone offer contracts in perpetuity (after an initial six-month probation), while employment in the development sector is often short-term. The development sector and public sector are associated with outward status symbols such as special licence plates, passports, and national and international travel (usually at higher career levels). These features are associated with risk/time preferences, prosociality and status; and I argue, are sector specific. I acknowledge there is heterogeneity within each sector in relation to company/organisation size, day-to-day operations and remuneration. The regression coefficients estimated for financial motivation are therefore likely to be noisy as jobseekers with both low and high reservation wages may be attracted to the same sector given the spread of wages in a sector – see Table 2.5.

Finally, I assume that *ex ante*, all skills types included in the study can find a job in any sector. One can imagine the mining company that hires administrative and support staff, the NGO seeking an engineer for a well-digging project, and government offices that hire a range of workers from lawyers to social workers. I do not assume that the sector chosen in this experiment is the sector that the respondent intends to continue working in for their entire career, but rather the sector they would like to start their career in. It can also be argued that the first job or internship has a meaningful impact on the trajectory of the first few years in the labour market due to the experience and connections that the intern gains.

4.3.1.2. Attributes and utility

Let X and Y be attribute representations of individual i and sector j. Attributes refer to varying levels of risk and time preferences, prosociality, financial motives, desires for social status and cognitive ability. Utility is defined as a function of attributes of the decision maker and the sector. $U_{ij} = w(x_i, y_j)$ for all $j \epsilon C$ and $i \epsilon N$, where w is a real valued function. The jobseeker matches to a particular sector by comparing utility from different sectors.

There are elements of the attribute representation X and Y which can be observed, and those which are unobservable. The set-up does not mean that utility maximisation is random, rather, individuals can be deterministic, but randomness arises due to the unobservable component (Louviere et al., 2000). Assuming utility is additively separable, and the observed and unobserved/random segments can be partitioned such that:

$$U_{ij} = V_{ij} + \varepsilon_{ij} \qquad (1)$$

Where V is well defined and the errors (ε) are normally distributed random variables. RUMs usefully allow probabilities to be empirically modelled.

Equation (1) reduces to a multinomial choice model, where the probability of choosing a sector, conditional on attributes, can be estimated using an alternative-invariant Multinomial Logit or Multinomial Probit Model (MNP). The model is alternative-invariant in this case as the regressors vary by individual and not by alternative (Cameron and Trivedi, 2015). Previous studies like Falco (2014) have used Multinomial Logit Models, but these suffer from the assumption of independence of irrelevant alternatives (Manski, 1977). Decision makers are likely to consider options collectively rather than by pairwise comparisons.

4.3.1.3. From RUM to probability

There are C alternatives or sector choices. The dependent variable y is defined to take the value j if the j^{th} alternative is selected: $j = 1, \ldots, C$. The probabilities associated with MNP models are complex given that the errors are not independent of each other. For the sake of illustration, assume there are three alternatives (the private, public and development sector), in line with the notation used in Cameron and Trivedi (2005, p.516-518), the probability that alternative $j = 1$ is chosen is given by:

$$P_j|x_i = Pr(y = 1|x_i) = P\ (U_{i1} > U_{i2}\ and\ U_{i1} > U_{i3})$$

$$= P(V_{i1} + \varepsilon_{i1} > V_{i2} + \varepsilon_{i2}\ and\ V_{i1} + \varepsilon_{i1} > V_{i3} + \varepsilon_{i3})$$

$$= P(V_{i1} - V_{i2} > \varepsilon_{i2} - \varepsilon_{i1}\ and\ V_{i1} - V_{i3} > \varepsilon_{i3} - \varepsilon_{i1})$$

$$= P(V_{i1} - V_{i2} > \tilde{e}_{21}\ and\ V_{i1} - V_{i3} > \tilde{e}_{31})$$

$$= \int_{-\infty}^{V_{i1} - V_{i2}} \int_{-\infty}^{V_{i1} - V_{i3}} f(\tilde{e}_{21}, \tilde{e}_{31}) d\tilde{e}_{21} d\tilde{e}_{31}$$

Where $f(\tilde{e}_{21}, \tilde{e}_{31})$ is a bivariate normal and the limits of the integral $V_{i1} - V_{i2}$ and $V_{i1} - V_{i3}$ depend on the regressors and the β parameters. For MNP models generally, errors are assumed to be drawn from a multivariate normal distribution with mean zero and identity variance-covariance matrix.

RUMs do not require knowledge of how the choice problem is generated as the optimal decision can be determined without this (Manski, 1977). The model assumes that exogenous forces produce a choice problem, and the decision maker selects among the available alternatives. Here, this can be interpreted as employers deciding what jobs to offer and when. This is driven by profit maximisation of private firms, budgets of organisation in the development and public sectors, company/government/donor objectives and hiring practices, for example, and is exogeneous to the decision maker.

From above, we can deduce that sector j is preferred to sector k, if and only if the individual derives a higher level of utility/satisfaction from sector j in comparison to sector k. The research will test if the probability of sector choice varies with elicited individual preferences/attributes related to risk (measured by the Markowitz risk premium), time preferences, prosocial behaviour (measure by the share given), desired social status (using McArthur's ladders), financial motivation and ability (measured by a composite Raven's matrices score using item response theory). Financial motivation, risk preferences and prosocial behaviour were selected based on the literature surveyed in section 4.2. The remaining three attributes are new to this study and relevant to the research questions stated at the beginning. Various socio-demographic factors are controlled for in the model.

4.3.2. Experimental methods – measuring individual traits and occupational choice

As discussed in 1.5.2.1, the target population of the survey was undergraduate university students who are in their final year of the degree programme, excluding those enrolled at medical institutions or teachers' training colleges. One of the key research objectives is to understand the factors influencing occupational choice among degree holders prior to sustained exposure to the labour market. As such, post graduate students were not included in the study. Post graduate students often have years of experience in employment and are enrolled part-time. In contrast, undergraduates often enrol directly from secondary school, and though some may have some internship experience, the majority (but not all) would have less than a year experience in the formal labour market cumulatively.

The survey comprised standard socio-demographic questions, questions on university and employment experience, perceptions of the labour market, desired job and sector of employment. In addition to this, five incentivised games and an incentivised occupational choice question were included as part of a lab-in-field experimental approach. The incentivised occupational choice was explained in 1.5.2.2, but is summarised again here.

4.3.2.1. Preference elicitation

The first and second experimental games administered were a multiple-price list (MPL) risk and time preference game adapted from Andreoni et al. (2015). These were used to measure participants' willingness to take risk in employment earnings and willingness to bring payments forward respectively. For the risk-preference MPL the switching point where the respondent prefers the safe option over the lottery was used to calculate the Markowitz risk-premium. This is the difference between the expected wealth (given the lottery) and the certainty equivalent or maximum willingness to pay to avoid the gamble (Vieider et al., 2015). This method was selected for its simplicity, it makes no assumptions on the functional form of utility and is easy to phrase over the employment domain as risk questions were not abstract, but were asked in relation to employment decisions (Appendix 10). Similarly, with the time-preferences MPL, the switching point allows estimation of the individual-specific discount factor. The discount factor is the rate, which when applied to a future sum, gives the present value of the amount. In essence, it measures how much value is placed on the future.

The third game was a social value orientation game drawing on the work of psychologist like Messick and McClintock (1968) and more recently Schuyt et al. (2010). This game was used to determine if participants make decisions to maximise personal gains, collective gains, or the difference between their outcome and that of others (relative gains). The fourth game was the standard dictator game used in the economics literature and measured how much participants would give from a sum of SLL100,000 (US$13.33) to other students who were less privileged. This is a common measure of prosociality, or willingness to give to a particular charitable cause (Falk et al., 2016). Finally, the fifth incentivised game was a series of ten Raven's matrices questions, and was used to measure cognitive ability. Raven's matrices were selected as this is a widely used measure of cognitive ability, does not require specific language, reading or writing skills, and is easy to administer (Raven, 2003).[51] Raven's matrices have also been used in labour market research in other African contexts (Abebe et al., 2016; Bassi and Nansamba, 2017). Respondents were given as much time as they needed to answer the questions.

The choice of games was determined by the needs of the study, how well-established the methods are, and simplicity given that the games were imbedded in the survey questionnaire. Dave et al. (2010) show that lack of understanding and limited mathematical knowledge can lead to inconsistent choices in risk games, causing noise in risks measurements. Simple measures like the MPL generate more stable estimates of risk over time. Similarly, Falk et al. (2016), argue that the MPL method allows for a simple measurement of the discount rate which is sufficient for this study.[52] The method does not overcome the issue of how perceived trustworthiness of the enumerator affects preferences as some respondents may select an earlier payment if they do not trust that they will be given payment at a later date.

The dictator game is tried and tested in the economics discipline and Raven's matrices are commonplace in psychology. All behavioural games were triangulated with hypothetical questions. All games are presented in Appendix 10. At the end of the survey, participants were asked to roll a die, which determined the game each respondent would receive payment for. This incentivised

[51] A choice was made between using Raven's matrices and student-reported Grade Point Average (GPA) scores, which were also collected in the survey. Reported GPA scores may not actually reflect ability as there is often cheating and "*buying grades*" in Sierra Leone. There is also likely misreporting from students, with leads to measurement error since GPA scores could not be verified by the university for privacy reasons. Cognitive tests like Raven's matrices provide a more objective measure.

[52] Several studies have attempted to measure time preferences and have attempted to update the standard Discounted Utility Model to take account of declining discount rates, hyperbolic discounting, utility anticipation, gains versus losses, habit-formation, and reference-dependence (Frederick et al., 2002). The estimates have varied widely based on the different methods. Given that this research does not aim to provide a methodological contribution to the time preferences literature, a simple MPL to elicit discount rates is sufficient. Similar methods have been used in West Africa before (Dean and Sautmann, 2014).

truthful revelation for each game, while managing the cost of total payoffs. Actual payoffs ranged from SLL15,000 to SLL50,000 (US$2 to US$6.67). Tossing the die to introduce randomness in payment did lead to an unforeseen limitation. Enumerators reported that a very small number of Islamic students (three) viewed this as gambling and therefore declined to participate. The incentivised games were fully funded by the International Growth Centre.

As noted above, desires for social status is an important covariate to the research. This was elicited using MacArthur's community ladders. These ladders are common tools in psychosocial studies and are used to elicit subjective social status (Adler and Stewart, 2007). Enumerators asked respondents to indicate where they stand in their society or community in their present state, and then where they thought they would be after five years, conditional on employment. The original MacArthur's ladders are unanchored and therefore purely based on subjectivity. The ladders in this study were anchored by installing an occupation at the top and the bottom so that all respondents were given the same reference point from which to locate themselves (see Appendix 10).

4.3.2.2. Occupational choice

In addition to preference elicitation, sector choice was also incentivised. One of the key objectives of the research is to understand which sectors skilled jobseekers choose, and the reasons for their choice. In order to elicit this, four internships were created. Participants were asked to express a preference to be considered for an internship in the public sector, private sector, development sector or shadowing someone who had set up their own business (self-employment). The tenure of each internship was three months, the job description was similar (mainly administrative tasks) and the monthly stipend of SLL600,000 (US$80) was the same across all four internships.

Respondents were told they would only be considered for one sector and were therefore required to name one preferred sector. After the survey, respondents were asked to submit their CVs to the lead researcher. These were screened, and three CVs were sent to each employer for selection based on the employer's demands. Internships are very desirable in Sierra Leone as jobseekers struggle to obtain work experience, which is demanded by many employers. The four interns were placed at Bollore (a large private sector logistics company), Sierra Leone Grass Roots Agency (a small self-run NGO), Apex Bank (a government bank which oversees rural financial institutions) and the Centre for Coordination of Youth Activities (a large national NGO). Interns were placed between November 2017 to April 2018, depending on employer's needs.

4.4. DESCRIPTIVE RESULTS

This section presents the results from analysis of the survey data and experimental games. The descriptive results provide a snapshot of the financial motives, risk preferences, time preferences, desire for social status, inclination to prosocial behaviour and cognitive ability of the average university leaver entering the labour market. This section usefully describes the key variables that will be included in the regression analysis in section 4.5.

Descriptive statistics are presented in Table 4.1- Table 4.7. Table 4.6 and Table 4.7 compare the means of the key regressors across sector choice and faculty of enrolment. Appendix 7 presents the sample sizes needed for varying levels of power to determine statistically significant differences in means across sectors. As shown in the appendix, the study may not be powered to estimate effects for financial motivations to the same extent as the other regression variables (Table A1).

From Table 4.1, we can see that: the majority of the sample was male (65.3 percent); more students live in West Freetown relative to East Freetown; the majority is originally from the provincial regions rather than the capital Freetown; just under a third have at least one child; just over 10 percent are married; almost half have financial dependents and approximately 60 percent had some employment experience or had volunteered. Of those with some employment experience, the largest share had experience in the public sector.

The majority of respondents stated that they selected their course as a means of contributing to society (Figure 4.1). Only four percent named influence from a family or friend having studied a similar course as a reason, which is unsurprising given that only 16 percent had a father that attended university and 2.5 percent had a mother that attended university. Twenty-six point five percent of the sample were enrolled in the Arts faculty, 48.4 percent in Social Sciences, 15.8 percent in Pure and Applied Sciences and 9.2 percent in Engineering.

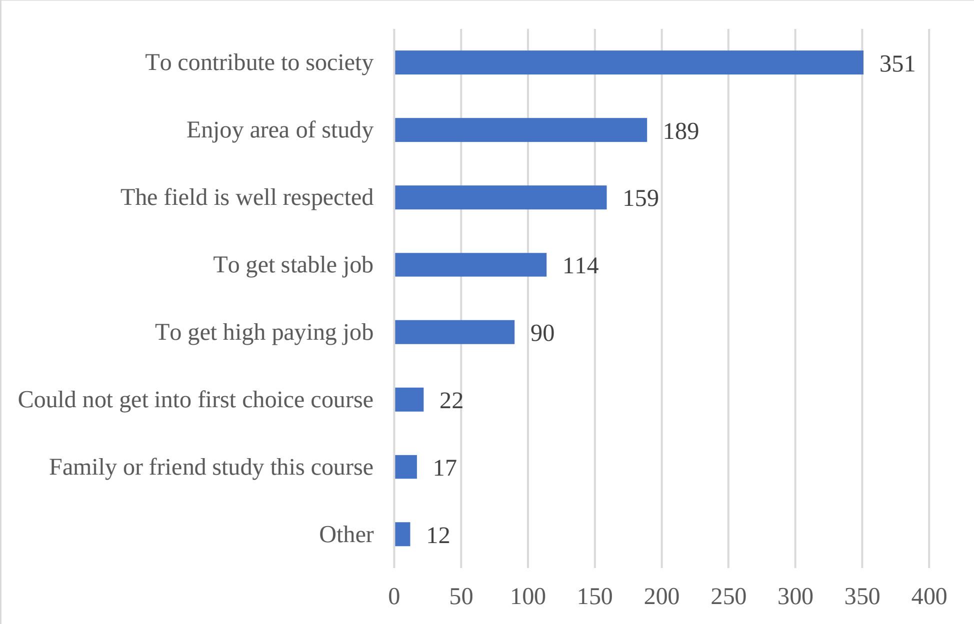
The average age of a respondent in the sample was 26 years. The youngest respondent was 20 years and the oldest 45. Such a large range is not uncommon is Sierra Leone as many older students whose education were disrupted by the war enrol at the university at older ages. There were also students who had already completed a bachelor's degree and were reading for a second one. This was most common among respondents studying law.

Table 4.1: Summary of sample characteristics ($n = 392$)

Variables	Sample Proportion
Female	0.3469
Live in East Freetown	0.4031
Originally from Freetown	0.4719
Has children	0.3061
Married	0.1122
Has financial dependents	0.4694
Ever employed	0.5944
in the public sector	0.2806
in the private sector	0.1888
in the development sector	0.1582
in self-employment	0.0255
Volunteer experience	0.6173

Source: Author collected survey data

Figure 4.1: Reasons for choosing course of study (multiple responses were selected) ($n = 392$)



Source: Author collected survey data

The inferential model focuses on six latent traits: risk and time preferences, prosocial behaviour, desire for social status, financial motivation and cognitive ability, which were elicited from the incentivised games. Summary statics are presented in Table 4.2, followed by a discussion of each attribute.

Table 4.2: Summary statistics for key latent variable ($n = 392$)

Variable	Mean	Std. Dev.	Min	Max
Reservation wage	334.65	291.496	66.67	2666.67
Prosociality	0.2374	0.1414	0	1
Risk premium	1.6308	0.7449	-1	2
Discount factor	0.9800	0.0170	0.9567	1
Desired status change	2.7526	1.3523	0	9
Cognitive ability	-0.0015	0.7646	-1.6572	1.9333

Source: Author collected survey data

Financial motivations

There is significant variation in the monthly reservation wage (as a proxy for financial motives). This is mainly driven by different aspirations across courses. In particular, students reading for a Bachelor of Law degree are outliers as they reported exceptionally high reservation wages because of perceived earnings potential in the field. On the other hand, one may argue that financially driven individuals are more likely to choose law as a profession. Excluding the 27 law students from the sample reduces the mean monthly reservation wage from US$334.66 to US$293.30. The average reservation wage for law students only is US$893.83. The average reservation wage was highest for those opting for employment in the private sector, followed by self-employment and the development and public sector, which have very similar average reservation wages (Table 4.4). The differences in average reservation wage between those choosing the private sector versus both the public and development sector are statistically significant (Table 4.6).

Prosocial behaviour

The average amount given away to a less advantaged student was 23.7 percent of the total allocated sum of SLL100,000 or US$13.33 (Table 4.2). This is slightly below previous estimates in the prosocial literature. Engel (2011, cited in Caviola and Faulmuller, 2014) reviewed 41,433 dictator games and found that on average, 28.4 percent of endowments were given away. Results from dictator games across 60 villages in Sierra Leone showed participants gave just over 25 percent (Cilliers et al., 2015 p.403).

From the data, those wanting to work for the development sector gave the most, while those interested in private sector employment gave the least (Table 4.4). This difference is statistically significant, but only at the 10 percent level (Table 4.6). There are no statistically significant differences in giving between faculties (Table 4.7). Forty-two point one percent of all respondents gave at least 20 percent. The results from the dictator game are in line with other measures of prosocial behaviour used in the study. Results from the social value orientation game (see Game 3 of Appendix 10) show that 69.9 percent of respondents maximise joint gains, 17.6 percent maximise their own gains and 12.5 percent maximise the relative difference between themselves and others. From the hypothetical survey question, 46.7 percent answered no to the statement: "It is difficult for me to support a cause that does not directly affect me".

Risk preferences

The Markowitz risk premium was used to determine how much participants were willing to pay to eliminate risks. By design, scores range from -2 to +2 going from risk loving to risk averse. The average university student entering the labour market is risk averse as the average risk premium equalled 1.63 (Table 4.2). Risk aversion is lowest (though still positive) for those who opted for self-employment and highest for those who wish to work in the public sector, in line with Falco (2014). Students in the arts faculty were most risk averse (Table 4.5) and were willing to take less risk in comparison to students from other faculties (Table 4.7). Separating the risk premiums categorically shows that overall, the population is highly risk averse in the employment domain as over 91 percent of respondents had a positive risk premium, that is, they were willing to pay to eliminate the risk. Two percent are risk-neutral, and seven percent are risk-takers.

Time preferences

The largest share of respondents (28.6 percent) would accept SLL10,000 today rather than waiting seven days for SLL100,000. The second largest percent (14.3 percent) opted to wait the full seven days. The discount factor was calculated using net present value methods, as done in many previous studies (Frederick et al., 2002). The average discount factor was 0.98 (Table 4.2), which is approximately located in the middle of the distribution. In addition to the incentivised game, the unwillingness to wait for higher gains was also measured in hypothetical questions administered. Eighty-three percent of respondents reported that they would not wait for a better job, even if this job was promised to them by someone they trusted and respected.[53]

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[53] The question related to this was:
"Imagine that you have been offered a job which you can say yes to now. Someone from your network (for example a lecturer) who you trust informs you of another job that will become available in the future. If you wait, you will get this job. The two jobs are certain. The second job is better and pays more, but is not yet available. You can only accept one job. Would you be willing to wait for the better job? □ Yes □ No"

For the internships created as an incentive compatibility, different payment schedules were offered to further elicit time preferences. From this data, 78.06 percent stated they would prefer a monthly payment schedule of SLL500,000 (US$66.67) over fortnightly earnings of SLL200,000 (US$26.67, equivalised to US$53.33 monthly). In reconciling these contrasting results, the issue of uncertainty becomes important (Frederick et al., 2002) and the correlation between time preferences, risk preferences and trust (Falk et al., 2016). In the incentivised time preferences multiple price list game, the uncertainty of not receiving the money from the enumerator exists and may lead to a present bias. In the hypothetical question, there is uncertainty that the promised job would materialise. The incentivised payment schedule removes the uncertainty between options as the probability of getting the internship is the same if the payment schedule is SLL500,000 monthly or SLL200,000 fortnightly. The key difference is the timing (and resultant net present value) of the payments. This allows binary identification of those willing to bring future gains forward and those unwilling to do so. This binary categorisation is used as a dummy variable in the regression analysis.

Desired social status

Table 4.2 shows the average respondent hoped to use employment to climb the social status ladder by 2.75 rungs (on average from position five to eight). Those opting for employment in the development sector had the highest average desired status change (Table 4.4), but the difference between the development sector and other sectors is only significant when the development sector and public sector are compared (Table 4.6). Employment-linked status is a key feature in the labour market, which was expressed by agents on both the demand and supply side. Forty-one percent of respondents chose their field of study because it was well respected (Figure 4.1).

Cognitive ability

Ability was measured using a series of Raven’s matrices - a cognitive ability test; and predicted ability levels were estimated using Bayesian methods embedded in Item Response Theory (IRT). Item Response Theory has been widely used in psychology research to analyse cognitive tests. Appendix 8 provides a detailed explanation of these method and estimates. In the model estimated using IRT, ability levels can range from -4 (least able) to +4 (most able), where zero represents average ability. The mean ability for the sample is -0.0015 (just below average), with a standard deviation of 0.7646, and a range of -1.6572 to 1.9334 (Table 4.2). It should be noted that questions selected for the study were similar to those administered to 8th graders (13-14 years) in the United States. Hence the below average performance of university finalist at the most reputable university in the country is telling of the quality of education in Sierra Leone.

Average ability is highest among those enrolled in Pure and Applied Sciences, and lowest among Arts students (Table 4.5). There does not appear to be any real difference in ability by sector choice (Table 4.6). This will be tested in the regression model, controlling for other variables. Differences across faculty of enrolment are statistically significant (Table 4.7).

Correlation across attributes

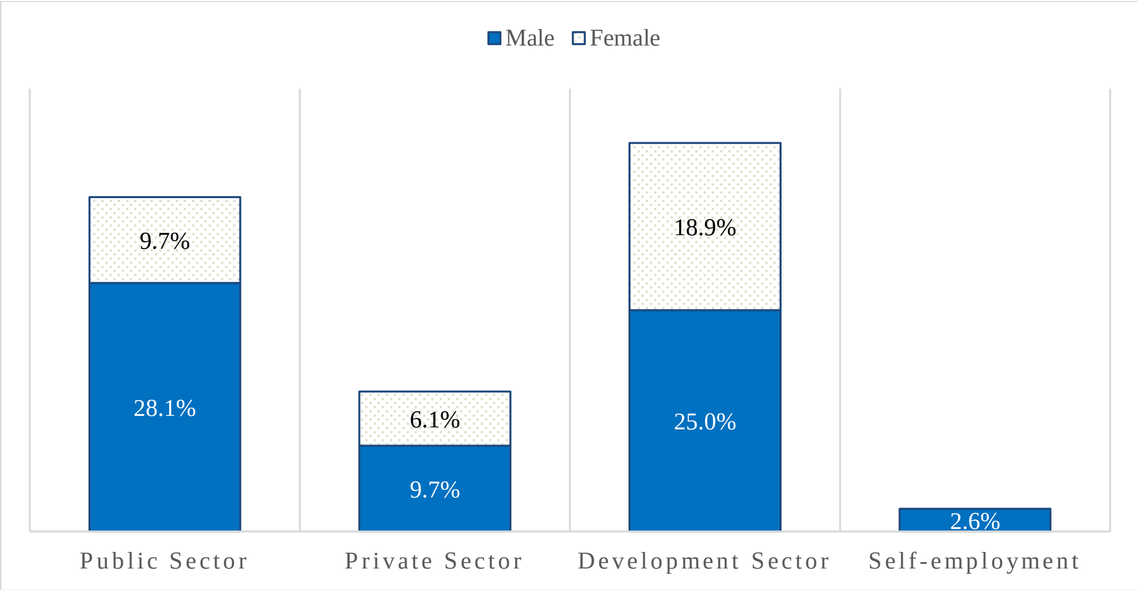
Table 4.3 presents the correlation between different latent variables. As expected, there is a negative (and statistically significant) correlation between risk preferences and financial motivation ($\rho_{risk\_reswage} = -0.2493$) indicating a risk-reward trade off. There is a small positive correlation between prosociality and financial motivation ($\rho_{prosocial\_reswage} = 0.0347$) which may imply that this sample behaves more like the participants in Dal Bó et al. (2013) where higher wages attracted more prosocial individuals, and not like those in Deserranno (2019) where financial motives crowded out prosocial tendencies. The correlation coefficient between time and risk preferences is negative indicating that participants who were willing to wait for future payment more risk-taking. However, the correlation coefficient is very close to zero ($\rho_{risk\_time} = -0.0797$) and is not statistically significant. Cognitive ability is positively correlated with financial motivations, the discount factor, prosocial behaviour; and negatively correlated with desired status and risk-taking.

Sector choice

Finally, sector choice. Respondents were asked in which sector they wished to be considered for an internship. This was tied to a real internship and therefore incentivised truthful revelation.

Proportions estimated show that 43.9 percent opted for the development sector, followed by 37.8 percent for the public sector, 15.8 percent for the private sector, and a mere 2.6 percent for self-employment (Figure 4.2). Given that the largest share of respondents opted for the development sector, this sector is established as an attractive choice in the employment decision, which is absent from previous literature. This is one of the first key findings of the chapter.

Figure 4.2: Sector choice of respondents based on incentivised occupational choice ($n = 392$)



Source: Author collected survey data

Table 4.3: Correlation matrix of latent variables

	Reservation wage	Prosociality	Status change	Discount factor	Risk premium	Cognitive ability
Reservation wage	1.0000					
Prosociality	0.0347	1.0000				
Status change	0.0213	-0.0130	1.0000			
Discount factor	-0.0730	-0.0096	-0.0263	1.0000		
Risk premium	-0.2493***	0.0596	-0.0011	-0.0797	1.0000	
Cognitive ability	0.0854*	0.0785	-0.0241	0.0018	-0.1464**	1.0000

*** p<0.01, ** p<0.05, * p<0.1

Source: Author collected survey data

Table 4.4: Key latent traits by chosen sector of employment ($n = 390$)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Reservation wage	Prosociality	Risk premium	Discount factor	Status change	Cognitive ability
Public Sector	312.7	0.227	1.693	0.979	2.608	-0.0986
	(22.05)	(0.0123)	(0.0574)	(0.00142)	(0.105)	(0.0666)
Private Sector	437.2	0.214	1.484	0.980	2.742	0.0566
	(43.08)	(0.0178)	(0.104)	(0.00207)	(0.158)	(0.0893)
Development Sector	313.1	0.254	1.650	0.981	2.894	0.0457
	(22.04)	(0.0103)	(0.0563)	(0.00132)	(0.111)	(0.0560)
Self-Employed	364.0	0.227	1.300	0.984	2.600	0.252
	(90.93)	(0.0354)	(0.318)	(0.00530)	(0.476)	(0.320)

Standard deviation in parentheses.

Source: Author collected survey data

Table 4.5: Key latent traits by faculty enrolled in ($n = 390$)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Reservation wage	Prosociality	Risk premium	Discount factor	Status change	Cognitive ability
Arts	225.6	0.231	1.801	0.977	2.864	-0.225
	(14.67)	(0.0130)	(0.0518)	(0.0017)	(0.139)	(0.0776)
Engineering	419.6	0.235	1.556	0.976	2.750	0.219
	(37.11)	(0.0244)	(0.142)	(0.0029)	(0.234)	(0.144)
Pure/Applied Sciences	442.8	0.222	1.589	0.982	2.435	0.217
	(32.78)	(0.0186)	(0.0986)	(0.0019)	(0.127)	(0.0923)
Social Sciences	341.0	0.245	1.566	0.982	2.799	0.00587
	(25.35)	(0.0105)	(0.0585)	(0.0012)	(0.102)	(0.0523)

Standard deviation in parentheses.

Source: Author collected survey data

Table 4.6: Comparison of mean values of key latent traits by chosen sector of employment (differences of mean presented)

	Reservation wage	Prosociality	Risk premium	Discount factor	Status change	Cognitive ability
Public Sector vs Private Sector	-124.5***	0.013	0.209*	-0.001	-0.134	-0.1552
Public Sector vs Development Sector	-0.4	-0.027*	0.043	-0.002	-0.286*	-0.1443*
Public Sector vs Self employment	-51.3	0	0.393	-0.005	0.008	-0.3506
Private Sector vs Development Sector	124.1**	-0.04*	-0.166	-0.001	-0.152	0.0109
Private Sector vs Self employment	73.2	-0.013	0.184	-0.004	0.142	-0.1954
Development sector vs Self employment	-50.9	0.027	0.35	-0.003	0.294	-0.2063
F-test for equality of group means	0.0238	0.1623	0.1375	0.6250	0.3108	0.2111

*** p<0.01, ** p<0.05, * p<0.1

Source: Author collected survey data

Table 4.7: Comparison of mean values of key latent traits by faculty of enrolment (differences of mean presented)

	Reservation wage	Prosociality	Risk premium	Discount factor	Status change	Cognitive ability
Arts vs Engineering	-194***	-0.004	0.245*	0.001	0.114	-0.444***
Arts vs Pure/Applied Sci	-217.2***	0.009	0.212*	-0.005*	0.429*	-0.442***
Arts vs Social Sciences	-115.4***	-0.014	0.235***	-0.005**	0.065	-0.231**
Engineering vs Pure/Applied Science	-23.2	0.013	-0.033	-0.006*	0.315	0.002
Engineering vs Social Sciences	78.6	-0.01	-0.01	-0.006*	-0.049	0.213
Pure/Applied Science vs Social Science	101.8**	-0.023	0.023	0	-0.364*	0.211*
F-test for equality of group means	0.0000	0.7066	0.0605	0.0445	0.2363	0.0007

*** p<0.01, ** p<0.05, * p<0.1

Source: Author collected survey data

4.5. REGRESSION MODEL AND DISCUSSION OF FINDINGS

The regression model (based on the RUM framework presented in section 4.3.1) estimates the probability of choosing a particular sector, conditional on the individual traits described above. The probability of choosing sector j, conditional on attributes x_i (taking marginal effects) is given by:

$$P(\, y = j|x_i) = \Phi(\beta_{1j}\, cognitive\_ability_i + \beta_{2j} financial\_motives_i + \beta_{3j} prosociality_i + \beta_{4j} desired\_status_i + \beta_{5j}\, time\_preferences_i + \beta_{6j} risk\_preferences_i + \gamma_j Z_i + \varepsilon_{ij})$$

Z_i represents a vector of controls, and includes: sex, age, faculty enrolled in, if the respondent is originally from Freetown, current area of residence and parents' education. Differences in latent traits and sector choice are expected based on sex so this is also controlled for. Age is included as older respondents are more likely to have previous exposure to the labour market, which may affect sector choice. Area of residence is a dummy variable and captures if the respondent lives in the richer western side of the capital or the poorer eastern side. Similarly, being originally from Freetown is a dummy variable and equals one if the respondent was raised in the capital and zero otherwise. Father's education, mother's education and faculty enrolled in are a series of indicator variables. Parents' education level and enrolment faculty are likely to affect latent traits through socialisation. The Probit link function is represented by Φ, and allows probabilities to be estimated (Cameron and Trivedi, 2005).

Results are represented in Table 4.8. For the regression analysis, I restrict the sector choice to the public, private and development sectors by excluding respondents who opted for self-employment. This is done for three reasons. Firstly, in Sierra Leone, the self-employed operate in both the private sector and development sector. Therefore, self-employment is not strictly mutually exclusive. Secondly, comparing the differences between choosing the public, private and development sector is useful analytically if we conceptualise the development sector as a third and competing sector. Thirdly, only 10 out of the 392 respondents chose self-employment so computationally, excluding these respondents allow for an easier maximisation problem.

For the multinomial models, the development sector is considered as the base category for interpreting estimates in columns one and two of Table 4.8 and Table 4.9. Using the development sector as the base category is done for two reasons. First, descriptively it is the modal choice category. Second, it is analytically useful to interpret choosing the public and private sector relative to the development sector.

As seen in Table 4.8, the model produces significant results for prosociality, desired status and cognitive ability of the six attributes measured. Estimates in columns one and two of Table 4.8 can only be interpreted with respect to higher/lower probability of sector choice relative to the base sector. For instance, the negative sign on the ability coefficient in column one suggests that as cognitive ability increases, the relative probability of choosing the public sector versus the development sector decreases. In other words, jobseekers with higher cognitive ability are more likely to choose the development sector relative to the public sector.

From columns one and two of Table 4.8, we can also see that respondents who are more prosocial are less likely to choose the private sector in favour of to the development sector, and those who desire social status are more inclined towards the development sector relative to the public sector. Gender and faculty of enrolment are also important predictors of occupational choice. Females are more likely to choose the development sector over the public sector. Relative to Arts students (the baseline faculty), engineers are more likely to choose the private sector over the development sector and social scientists the public sector over the development sector.

Columns three, four, and five give marginal effects at the mean (MEM), which estimates the change in the probability of choosing each sector conditional on the covariates in the model. The effects can be interpreted as the change in probability when there is an instantaneous change from the sample average for continuous variables, and a change from the base level for categorical variables. Evaluating the margins of the Multinomial Probit model in Table 4.8 at the means of all covariates, the predicted probability of choosing the public sector is 0.338, 0.123 for the private sector and 0.538 for the development sector for the average university graduate surveyed. All marginal effects described below take these predicted probabilities as the base level for comparison.

Table 4.8: Multinomial Probit regression results for sector choice[+]

	MNP regression estimates		Marginal effects (evaluated at the mean) - MEM		
	(1)	(2)	(1)	(2)	(3)
VARIABLES	Public	Private	Public	Private	Development
Measured attributes					
Cognitive ability	-0.253*	-0.0779	-0.0665*	0.0053	0.0612*
	(0.132)	(0.138)	(0.0341)	(0.0194)	(0.0357)
Reservation wage	-0.00007	0.00054	-0.00006	0.00009	-0.00003
	(0.0004)	(0.0004)	(0.0001)	(0.00005)	(0.00012)
Prosociality	-0.858	-1.883**	-0.1132	-0.238**	0.351*
	(0.699)	(0.811)	(0.1829)	(0.118)	(0.191)
Desired status	-0.172**	-0.0665	-0.0442**	0.0014	0.0427**
	(0.0693)	(0.0806)	(0.0182)	(0.0117)	(0.0189)
Present bias	0.239	0.0722	0.0637	-0.0056	-0.0581
	(0.228)	(0.276)	(0.0604)	(0.0386)	(0.0633)
Risk preference	0.0506	-0.0600	0.0185	-0.0130	-0.0055
	(0.141)	(0.154)	(0.0362)	(0.0217)	(0.0384)
Controls					
Age	-0.525**	0.0127***	-0.0017	-0.0068	0.008
	(0.237)	(0.004)	(0.0097)	(0.0052)	(0.010)
Female	-0.511**	0.044	-0.145***	0.0422	0.102*
	(0.222)	(0.251)	(0.0544)	(0.0381)	(0.059)
West Freetown	-0.0857	-0.219	-0.0089	-0.0290	0.0379
	(0.1983)	(0.230)	(0.0520)	(0.0335)	(0.0541)
Freetown origins	-0.195	0.171	-0.0671	0.0406	0.0264
	(0.1996)	(0.228)	(0.0519)	(0.0331)	(0.0543)
Faculty-Engineering	0.0928	1.36***	-0.0827	0.283***	-0.200**
	(0.3998)	(0.388)	(0.0824)	(0.0845)	(0.0981)
Faculty-Pure/App Sci	0.427	0.519	0.0844	0.0508	-0.135
	(0.0314)	(0.352)	(0.0801)	(0.0497)	(0.0827)
Faculty-Social Sci	0.576**	0.422	0.135**	0.242	-0.159**
	(0.232)	(0.282)	(0.0578)	(0.0341)	(0.0616)
Parents education[++]	Yes	Yes	Yes	Yes	Yes
constant	7.854**	9.381***			
	(3.50)	(3.597)			
N	380	380	380	380	380
F (44, 333)	2.27	2.27			
Prob > F	0.0000	0.0000			

Standard errors in parentheses. Standard errors are calculated based on sample weights.
*** p<0.01, ** p<0.05, * p<0.1
[+] Choosing the development sector is the base outcome
[++]Dummies are included for both mother's and father's level of education and produce insignificant coefficients.
Source: Author collected survey data

As cognitive ability increases by one unit above average (1.3 standard deviations), from a score of -0.0015 to 0.9985 on scale ranging from -4 to +4 which is used to measure ability, the probability of choosing the development sector increases by 0.061, while the likelihood of choosing the public sector reduces by 0.067. The result is weakly significant at the 10 percent level.

Similarly, an increase in desire for social status by one unit increases the probability of choosing the development sector by 0.043 and reduces the chances of choosing the public sector by 0.044. Those with prosocial traits marginally above average (0.1 units higher) are less likely to choose the private sector (a change in probability of -0.024) but more likely to choose the development sector (a change in probability of 0.035). The probability of females choosing the public sector is reduced by 0.145, but they are more likely to choose the development sector higher (increased probability by 0.102). The latter is only significant at the 10 percent level. Finally, engineers are 28.3 percent more likely to choose the private sector (increased probability by 0.283) and social scientists are more likely to opt for the public sector (increased probability by 0.135).

The result for cognitive ability indicates a type of internal brain drain from the public sector to the development sector at the time of sector choice, where higher ability workers are more inclined to work for development organisations. Evidence of a shift of workers from local organisations to development-oriented ones like NGOs has been documented with respect to medical professionals (Bristol, 2008). This study provides evidence that such an internal brain drain is not constrained to nurses and doctors who opt for employment in the NGO-sector instead of local private and public institutions, but to skilled workers more generally. This has likely implications for homegrown growth if local companies and the Government are not able to access required talent, or lose talent to development organisations. This finding speaks to policy and should encourage development organisations to reflect on their impact on the dynamics of the labour market in the countries in which they operate; and the public sector to reflect on its competitiveness as an employer. The appeal of the development sector is highest among those enrolled in the Arts faculty, while engineers have a preference for the private sector and social scientists for the public sector. About 27 percent of graduates belong to the Arts faculty.

With respect to “mission matching”, the appeal of the development sector to those with higher prosocial scores is expected as the development sector is seen as *“making a contribution to society*” and attracts those more socially driven jobseekers. This is consistent with findings by Serra et al. (2011). The positive sign of the status coefficient is also expected as the development sector is well respected in local communities. The negative coefficient of the status indicator with regards to the public sector may seem counterintuitive as government jobs are highly demanded in developing countries and often associated with long queues (Mazumdar and Mazaheri, 2018). One potential explanation for this is the general low favourability of the Government of Sierra Leone amid corruption allegation in the fight against Ebola (DePinto, 2016).

Though the other results are not significant, the direction and size of the estimated coefficients are worth considering, nonetheless. There is a negative relationship between financial motivation and choosing the public and development sectors, while the sign is positive for the private sector - similar to findings by Serra et al. (2011). As highlighted in sections 2.3.5 and 4.3.1, there is heterogeneity in remuneration packages within sectors, which may lead to proving the null for the financial motivation coefficient. Risk averse jobseekers are more (less) likely to choose the public sector (private sector) given the positive (negative) sign of the coefficient, which was also established in Falco (2014). The negative sign on the coefficient for the development sector indicates risk-takers are attracted to the development sector, which is unsurprising given the sector is characterised by uncertainty due to short-term contracts. Finally, those who are willing to wait for future gains are also more likely to choose the public sector and less likely to choose the development sector. Again, this makes sense intuitively as public sector employment requires more waiting/queuing than development sector employment, which arises more frequently, but is often short-term.

There are also gender implications given that females are less likely to choose employment in the public sector. At present, the public sector in Sierra Leone is male dominated, and the results documented here show an opting-out effect at the choice level. This may be because women have less chances of progressing to senior roles and are more likely to be assigned more menial administrative tasks in the public sector. Another possible explanation is that network-based recruitment in the public sector as discussed in chapter five, may disproportionally affect women.

As discussed above, though the signs are as expected based on predictions from the mission matching literature, some of the measured preferences do not have significant coefficients. These results are robust to various specifications of the model, including hypothetical measures of risk and time preferences, categorical scales which measure risk and time preferences, interactions between time and risk preferences, and hypothetical questions which ask respondents about their willingness to give to a good cause. The results also remain unchanged when robust standard errors are included in the estimation.

The lack of significant results on these latent variables is different from previous studies discussed in section 4.2 where significant results were found for risk, prosocial behaviour and financial motives. I argue that proving the null in this instance is useful and demonstrates that findings in middle-income and larger low-income countries are not necessarily transferable to smaller least developed countries. Falco's (2014) study looked at Ghana, Ashraf et al.'s (2014) at Zambia and Dal Bó et al.'s (2013) at Mexico, which are all middle-income countries. Deserranno's (2019) study focused on Uganda and Serra et al.'s (2011) on Ethiopia; both of which are large low-income countries with populations around 42.7 million and 109.2. million respectively (World Bank, 2020). Sierra Leone is classified as low-income and has a small population of just over 7.5 million (World Bank, 2020). Arguably population size and income likely determine the size and structure of product markets and factor markets like the labour market.

Moreover, previous studies have assumed that individuals can freely choose between the public and private sectors (Falco, 2014), the for-profit and non-profit sector (Serra et al., 2011) or can trade between options that are more financial or prosocial (Dal Bó et al., 2013; Deserranno, 2019); either neglecting how the choice set is generated or, in the case of randomised control trials, creating the choice set for the study. One of the main aims of this chapter is to test occupational choice based on measured preferences in low-income contexts. I argue that in instances where economic and social factors influence the generation of the choice set (employment options in this case), agents are constrained and modify their behaviour accordingly. In other words, the least altruistic respondent may choose the development sector because perceived chances of employment are higher rather than because of their level of prosocial traits. Utility is therefore maximised probabilistically, and sector choices are based on perceptions about the labour market, and not only intrinsic preferences. It follows that the perception of the different sectors is a likely predictor of occupational choice.

I therefore modify the model above to include an individual-specific composite score which measures perceived attractiveness of the sector, relative to other sectors. This score is based on individual perceptions of how each sector ranks in terms of salary, status, contribution to society, opportunities for training, career progression and job stability. Respondents were asked to rank each sector based on these categories, and a composite "perception score" for each sector was calculated using multiple correspondence analysis (MCA). Appendix 9 provides a detailed explanation of the MCA method, and how these scores were generated. Given that this is an individual-specific measure and not a sector-specific measure, the Multinomial Probit model can again be used.[54] As DellaVigna (2009) note, decision-making is driven by both incentives and biases in probability judgement or heuristics. This composite score takes account of these heuristics by considering individual beliefs and perceptions.

The role of perceptions is introduced to determine if this is associated with sector choice, and if introducing perceptions into the model changes the significance of intrinsic traits as an explanation of sector choice. For instance, beliefs may taper motivations and/or determine occupational choice if this is made based perceptions about the structure of the labour market rather than intrinsic attributes/preferences. The updated model is presented in Table 4.9, and the coefficients are now more significant. Again, the predicted probability of choosing the public sector is 0.338, 0.123 for the private sector and 0.538 for the development sector for the average university graduate surveyed, and serves as the baseline for the comparisons below.

[54] In the case of a sector-specific measure that varies across sector but is the same for all individuals, the Alternative-Specific Multinomial Probit model is a better fit.

Table 4.9: Multinomial Probit regression results for sector choice – including sector perception score

	MNP regression estimates		Marginal effects (evaluated at the mean) - MEM		
VARIABLES	(1) Public	(2) Private	(3) Public	(4) Private	(5) Development
Measured attributes					
Cognitive ability	-0.312**	-0.111	-0.0789**	0.0031	0.0758**
	(0.133)	(0.139)	(0.0335)	(0.0198)	(0.0357)
Reservation wage	-0.0001	0.0005	-0.0001	0.0001	-0.00003
	(0.0004)	(0.0004)	(0.0001)	(0.0001)	(0.0001)
Prosociality	-1.264*	-2.009**	-0.2160	-0.235*	0.451**
	(0.727)	(0.832)	(0.1853)	(0.1217)	(0.198)
Desired status	-0.185***	-0.0421	-0.0484**	0.0056	0 .0428**
	(0.0715)	(0.0837)	(0.0187)	(0.0124)	(0.0192)
Present bias	0.261	0.102	0.0664	-0.0018	-0.0646
	(0.241)	(0.284)	(0.0633)	(0.0407)	(0.0663)
Risk preference	-0.0046	-0.0955	0.0051	-0.0149	0.0098
	(0.147)	(0.155)	(0.0374)	(0.0223)	(0.0393)
Perception measures					
Pub sect perception	3.033***	0.678	0.794***	-0.0945	-0.6996***
	(0.499)	(0.531)	(0.1265)	(0.0768)	(0.1334)
Priv Sect perception	0.182*	0.317**	0.0292	0.0383*	-0.0674**
	(0.107)	(0.136)	(0.0275)	(0.0198)	(0.0293)
Dev Sect perception	-0.345***	-0.425***	-0.0672**	-0.0445**	0.1117***
	(0.116)	(0.123)	(0.0288)	(0.0174)	(0.0317)
Controls					
Age	-0.827***	-0.943	-0.0192**	-.0009*	0.028***
	(0.241)	(0.254)	(0.0096)	(0.005)	(0.010)
Female	-0.316	0.046	-0.089	0.028	0.061
	(0.234)	(0.267)	(0.057)	(0.040)	(0.063)
West Freetown	-0.518	-0.185	-0.002	-0.026	0.028
	(0.210)	(0.240)	(0.054)	(0.037)	(0.056)
Freetown origins	-0.284	0.059	-0.082	0.028	0.054
	(0.211)	(0.802)	(0.054)	(0.034)	(0.057)
Faculty-Engineering	-0.173	1.18***	-0.127	0.256***	-0.129
	(0.429)	(0.390)	(0.085)	(0.080)	(0.103)
Faculty-Pure/App Sci	0.0717	0.404	-0.004	0.056	-0.0512
	(0.338)	(0.371)	(0.083)	(0.052)	(0.089)
Faculty-Social Sci	0.351	0.379	0.075	0.032	-0.107
	(0.248)	(0.300)	(0.225)	(0.052)	(0.067)
Parent education+	Yes	Yes	Yes	Yes	Yes
Constant	13.00***	12.93***			
	(3.562)	(3.689)			
N	380	380	380	380	380
F (50, 327)	3.60	3.60			
Prob > F	0.0000	0.0000			

Standard errors in parentheses. Standard errors are calculated based on sample weights.
*** p<0.01, ** p<0.05, * p<0.1
+Dummies are included for both mother's and father's level of education. The coefficients are not significant.
Source: Author collected survey data

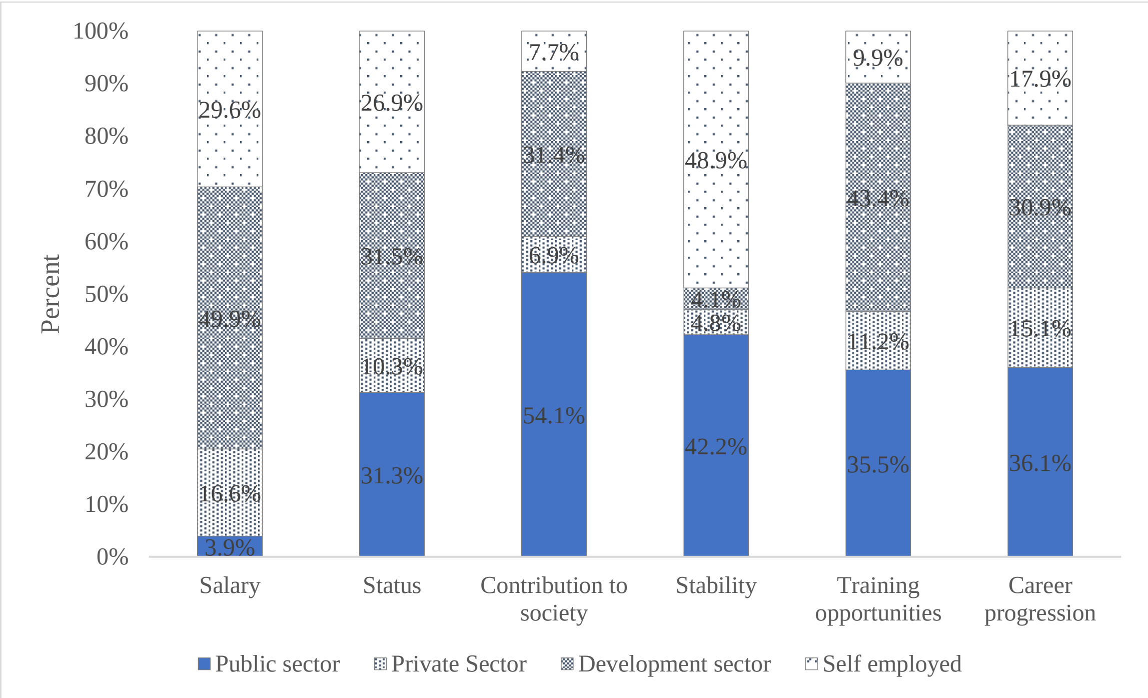
In this augmented model, an internal brain drain effect is again observed as higher (lower) ability jobseekers are more (less) likely to choose the development sector (public sector). Here, a one-unit change in ability above average increases the probability of choosing the development sector by 0.076 and decreases the probability of choosing the public sector by 0.079. This effect is larger than results in Table 4.8 and significant at the five percent rather than 10 percent level.

As expected, the coefficients on the perception indices are significant. From columns three and four (Table 4.9), opinions on the private sector do not influence the probability of choosing the public sector, and vice versa. However, a favourable opinion of the development sector reduces the probability of choosing the public and private sectors. As esteem of the development sector increases by one unit (or one standard deviation), in other words from a score of zero to one on scale ranging from -4 to +4 which is used to measure perception, the likelihood of choosing the public sector and private sector reduces by 0.067 and 0.045 respectively. Both results are significant at the five percent level. The sign and significance of the coefficients for perception measures indicate a trade-off between the public and development sectors, and private and development sectors; but not between the two traditional sectors, that is the public and private sectors.

The largest share of respondents ranked the development sector as their first choice for salary, status (jointly with the public sector) and training opportunities (Figure 4.3). The development sector was the second most attractive for career progression as many see the development sector as providing experience and access to networks that will be beneficial to their career. Despite being the most preferred sector, respondents are fully aware of the instability in the development sector as many contracts are short-term and contingent on project/programme funding. The development sector was therefore ranked last for stability. Respondents were still willing to choose the development sector, indicating that the rewards offered by the sector compensated for the riskiness associated with contract insecurity.

Surprisingly, self-employment is seen as the second most stable as respondents felt that they did not face the risk of contract termination if they work for themselves. This is a different interpretation of risks to self-employment traditionally explained in the literature, and again signifies the importance of perception among respondents and how different meanings may be ascribed to terms. In addition to this, respondents cited that more information on vacancies were provided by organisations in the development sector, which led to an increased awareness of these jobs and feelings of increased chances of employment in the sector. This is discussed in more detail in chapter five.

Figure 4.3: Preferred sector by employment characteristics.



Source: Author collected survey data

The interpretations of the regression models above are based on marginal effects evaluated at the mean (MEM). This can be interpreted as the effect on occupational choice for a 'representative agent' with the average of all continuous variables and the baseline values for the categorical variables. For comparison, the classical average marginal effects (AME) are given in Table 4.10 and Table 4.11. The AME measure takes the average of a marginal change across all individual effects. Comparing Table 4.8 with Table 4.10 and Table 4.9 with Table 4.11, the results are similar, with a marginal decline in some of the probability estimates when AME are calculated - in most cases a percentage point or less. I have opted for MEM interpretation, as a representative agent interpretation is more intuitive for representing the results of the study.

Table 4.10: Multinomial Probit regression results for sector choice – AME+

	MNP regression estimates		Average Marginal Effects (AME)		
	(1)	(2)	(1)	(2)	(3)
VARIABLES	Public	Private	Public	Private	Development
Measured attributes					
Cognitive ability	-0.253*	-0.0779	-0.0587*	0.0063	0.0525*
	(0.132)	(0.138)	(0.0300)	(0.0203)	(0.0312)
Reservation wage	-0.00007	0.00054	-0.00006	0.00009	-0.00004
	(0.0004)	(0.0004)	(0.0009)	(0.00006)	(0.0001)
Prosociality	-0.858	-1.883**	-0.0759	-0.249**	0.325*
	(0.699)	(0.811)	(0.1625)	(0.123)	(0.168)
Desired status	-0.172**	-0.0665	-0.0388**	0.002	0.0368**
	(0.0693)	(0.0806)	(0.0161)	(0.0122)	(0.0165)
Present bias	0.239	0.0722	0.0562	-0.0066	-0.0496
	(0.228)	(0.276)	(0.0536)	(0.041)	(0.0559)
Risk preference	0.0506	-0.0600	0.0175	-0.0139	-0.0036
	(0.141)	(0.154)	(0.0322)	(0.0228)	(0.034)
Controls					
Age	-0.525**	0.0127***	-0.0015	-0.0091	0.0106
	(0.237)	(0.004)	(0.0087)	(0.0064)	(0.0092)
Female	-0.511**	0.044	-0.134***	0.0467	0.0873
	(0.222)	(0.251)	(0.0509)	(0.0397)	(0.054)
West Freetown	-0.0857	-0.219	-0.005	-0.0303	0.0353
	(0.1983)	(0.230)	(0.0463)	(0.0359)	(0.048)
Freetown origins	-0.195	0.171	-0.0636	0.0438	0.0198
	(0.1996)	(0.228)	(0.0473)	(0.0349)	(0.0485)
Faculty-Engineering	0.0928	1.36***	-0.0931	0.285***	-0.192**
	(0.3998)	(0.388)	(0.0785)	(0.0816)	(0.0889)
Faculty-Pure/App Sci	0.427	0.519	0.0716	0.0541	-0.126*
	(0.0314)	(0.352)	(0.0733)	(0.0533)	(0.0756)
Faculty-Social Sci	0.576**	0.422	0.119**	0.255	-0.144**
	(0.232)	(0.282)	(0.0528)	(0.0378)	(0.0567)
Parents education++	Yes	Yes	Yes	Yes	Yes
constant	7.854**	9.381***			
	(3.50)	(3.597)			
N	380	380	380	380	380
F (44, 333)	2.27	2.27			
Prob > F	0.0000	0.0000			

Standard errors in parentheses. Standard errors are calculated based on sample weights.
*** p<0.01, ** p<0.05, * p<0.1
+ Choosing the development sector is the base outcome
++Dummies are included for both mother's and father's level of education. The coefficients are not significant.
Source: Author collected survey data

Table 4.11: Multinomial Probit regression results for sector choice – including sector perception score.

	MNP regression estimates		Average Marginal Effects (AME)		
	(1)	(2)	(3)	(4)	(5)
VARIABLES	Public	Private	Public	Private	Development
Measured attributes					
Cognitive ability	-0.312**	-0.111	-0.0607**	0.005	0.0556**
	(0.133)	(0.139)	(0.0261)	(0.0195)	(0.027)
Reservation wage	-0.00009	0.000499	-0.00006	0.00009	-0.00003
	(0.000430)	(0.000399)	(0.00009)	(0.00006)	(0.00011)
Prosociality	-1.264*	-2.009**	-0.1332	-0.224*	0.358**
	(0.727)	(0.832)	(0.1444)	(0.117)	(0.149)
Desired status	-0.185***	-0.0421	-0.0378**	0.0068	0 .031**
	(0.0715)	(0.0837)	(0.0146)	(0.0122)	(0.0146)
Present bias	0.261	0.102	0.0506	-0.0033	-0.0473
	(0.241)	(0.284)	(0.0491)	(0.0402)	(0.0502)
Risk preference	-0.00461	-0.0955	0.0059	-0.0147	0.0087
	(0.147)	(0.155)	(0.0293)	(0.0220)	(0.0299)
Perception measures					
Pub sector perception	3.033***	0.678	0.620***	-0.1131	-0.507***
	(0.499)	(0.531)	(0.088)	(0.0705)	(0.091)
Priv Sect perception	0.182*	0.317**	0.0171	0.0367*	-0.0538**
	(0.107)	(0.136)	(0.0219)	(0.0198)	(0.0223)
Dev Sect perception	-0.345***	-0.425***	-0.0453**	-0.0418**	0.0872***
	(0.116)	(0.123)	(0.0218)	(0.0164)	(0.0233)
Controls					
Age	-0.827***	-0.943	-0.0136*	-.0101*	0.024***
	(0.241)	(0.254)	(0.0077)	(0.006)	(0.008)
Female	-0.316	0.046	-0.0736	0.031	0.043
	(0.234)	(0.267)	(0.0467)	(0.039)	(0.049)
West Freetown	-0.518	-0.185	-0.002	-0.026	0.023
	(0.210)	(0.240)	(0.043)	(0.036)	(0.043)
Freetown origins	-0.284	0.059	-0.068	0.030	0.037
	(0.211)	(0.802)	(0.043)	(0.034)	(0.044)
Faculty-Engineering	-0.173	1.18***	-0.131	0.245***	-0.114
	(0.429)	(0.390)	(0.075)	(0.073)	(0.0823)
Faculty-Pure/App Sci	0.0717	0.404	-0.011	0.056	-0.0452
	(0.338)	(0.371)	(0.067)	(0.053)	(0.071)
Faculty-Social Sci	0.351	0.379	0.053	0.031	-0.084
	(0.248)	(0.300)	(0.049)	(0.037)	(0.053)
Parent education	Yes	Yes	Yes	Yes	Yes
Constant	13.00***	12.93***			
	(3.562)	(3.689)			
N	380	380	380	380	380
F (50, 327)	3.60	3.60			
Prob > F	0.0000	0.0000			

Standard errors in parentheses. Standard errors are calculated based on sample weights and linearised.
*** p<0.01, ** p<0.05, * p<0.1
Source: Author collected survey data

Table 4.12: Multinomial Probit regression results for sector choice – including sector perception score and with/without enumerator effects.

	MNP regression estimates		MNP regression estimates	
	(1)	(2)	(1)	(2)
VARIABLES	Public	Private	Public	Private
Measured attributes				
Cognitive ability	-0.312**	-0.111	-0.254*	-0.0614
	(0.133)	(0.139)	(0.138)	(0.145)
Reservation wage	-0.00009	0.0005	-0.00001	0.0001
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Prosociality	-1.264*	-2.009**	-1.258*	-2.466***
	(0.727)	(0.832)	(0.727)	(0.911)
Desired status	-0.185***	-0.0421	-0.167**	-0.0043
	(0.0715)	(0.0837)	(0.0718)	(0.0953)
Present bias	0.261	0.102	0.252	0.231
	(0.241)	(0.284)	(0.249)	(0.300)
Risk preference	-0.00461	-0.0955	0.0391	-0.0922
	(0.147)	(0.155)	(0.149)	(0.159)
Perception measures				
Pub sector perception	3.033***	0.678	3.226***	0.473
	(0.499)	(0.531)	(0.504)	(0.567)
Priv Sect perception	0.182*	0.317**	0.170	0.400***
	(0.107)	(0.136)	(0.111)	(0.153)
Dev Sect perception	-0.345***	-0.425***	-0.358***	-0.477***
	(0.116)	(0.123)	(0.116)	(0.133)
Controls				
Age	-0.827***	-0.943***	-0.842***	-0.946***
	(0.241)	(0.254)	(0.244)	(0.265)
Female	-0.316	0.0462	-0.341	0.111
	(0.234)	(0.267)	(0.237)	(0.279)
West Freetown	-0.0518	-0.185	-0.0560	-0.327
	(0.210)	(0.240)	(0.212)	(0.244)
Freetown origins	-0.284	0.059	-0.333	-0.0547
	(0.211)	(0.235)	(0.216)	(0.240)
Faculty-Engineering	-0.173	1.18***	-0.165	0.851**
	(0.429)	(0.390)	(0.442)	(0.389)
Faculty-Pure/App Sci	0.0717	0.404	0.0473	0.0910
	(0.338)	(0.371)	(0.345)	(0.377)
Faculty-Social Sci	0.351	0.379	0.397	0.206
	(0.248)	(0.300)	(0.253)	(0.312)
Parent education	Yes	Yes	Yes	Yes
Enumerator Effects	No	No	Yes	Yes
Constant	13.00***	12.93***	13.04***	13.82***
	(3.562)	(3.689)	(3.619)	(3.851)
N	380	380	380	380
F	3.60	3.60	3.34	3.34
Prob > F	0.0000	0.0000	0.0000	0.0000

Standard errors in parentheses. Standard errors are calculated based on sample weights.
*** p<0.01, ** p<0.05, * p<0.1
Source: Author collected survey data

Finally, to verify the results above, I re-specify the model to include an enumerator dummy (Table 4.12) as another robustness check. Though all enumerators were given a standard script to read to participants, it is not impossible that the enumerator administering the survey and preference elicitation games could have had an influence on the traits measured as argued in Cilliers et al. (2015), as well as the sector rankings. Controlling for enumerator effects mitigate any potential bias in the estimated coefficients. The results are robust to including these dummies.

4.6. CONCLUSIONS

This chapter began by asking three research questions: (i) is the development sector an attractive sector for employment among skilled workers? (ii) do skilled jobseekers sort based on cognitive ability at the sector level? (iii) do skilled workers sort based on measured preferences as predicted in the "mission matching" literature? and (iv) do perceptions matter for occupational choice? The results show that cognitive ability is important to occupational choice at the sector level; some preferences matter when sorting across sectors, but perceptions are also a key determinant. The evidence shows that individual financial, risk and time preferences do not significantly factor into the decision-making process. Prosociality, status and ability emerged as important factors. The results show that the development sector is an attractive option and perceived favourably among university graduates. Importantly, favourable perceptions of the development sector reduce the probability of choosing the public and private sectors for early career employment. One reason for this is that more information on jobs in the development sector is made publicly available.

Overall, these results force us to think more critically about the factors external to the decision-maker which can drive the choice process. If the results of this study are indicative of future trends, ceteris paribus, there may be further skills development geared at employment in the desirable development sector, and a movement of the highest skilled to development sector jobs. Both national governments and international actors need to be aware of and act on this, as such a sectoral shift can have important consequences for long-term development, particularly home-grown development driven by the local public and private sectors.

CHAPTER 5 – WHO YOU KNOW OR WHAT YOU KNOW? JOB SEARCH AND MATCHING IN THE PRESENCE OF PATRONAGE

5.1. INTRODUCTION

This chapter explores how networks and social connections affect the labour market in a small developing country. In so doing, the chapter makes two important contributions. Firstly, distortions in the labour market that result from network-based recruitment and patronage are analysed and the behavioural responses of firms and workers documented. Secondly, the development sector is shown to be an attractive option to unconnected jobseekers as this sector is perceived to practise fairer recruitment.

Central to the analysis is the concept of homophily or social networks that form around political, ethnic, familial and institutional groups. I argue that these networks can lead to a matching friction by distorting outcomes, as labour market actors navigate these frictions. The data from this study shows that in low trust contexts where the functions of networks surpass information-sharing and include hiring based on patronage, both firms and jobseekers excessively build and draw on networks when engaging in search. Observed and reported individual behaviour reveal individual clustering to various groups/networks and deliberate efforts to become connected and use networks.

Despite this observed behaviour, use of such “connections” are widely regarded by respondents as disadvantageous and harmful to the labour market collectively. As Schelling (1971, p.144) notes, “the active choice is more like congregation than segregation”; but in effect, as agents form and utilise networks based on homophily, an insider-outsider situation is created where the connected are insiders and the unconnected are outsiders.

Previous research has considered social networks and job referrals in obtaining employment, primarily focusing on the benefits. For example, networks provide more information on candidates and reduce information asymmetries (Montgomery, 1991; Calvó-Armengol and Jackson, 2004) and have been reported to be cost-effective ways to search (Beam, 2016). These examples are valid uses of networks and have different efficiency implications to the use of networks at the intensive margins – that is being employed because of membership of a network. As such, I do not argue that networks are not advantageous to increasing the candidate pool if the recruiter uses the networks of their employees (and their networks' networks) to advertise vacancies more broadly in addition to general advertisement. Or if jobseekers utilise their networks to obtain a meaningful referral letter which gives a positive signal to the recruiter as shown in Abel et al. (2017). There is evidence that the use of networks in such settings have led to matching in the labour market. The analysis presented in this chapter takes this as given, and asks three further research questions:

i. How does the existence of networks, and homophily more broadly, affect decision-making and behaviour in the labour market?

ii. Is the observed outcome an optimal outcome for the labour market? In so doing, the chapter establishes homophily as a matching friction in the labour market.

iii. What is the role of the development sector in such contexts?

Throughout this chapter, I refer to a firm or jobseeker that is networked or connected. Being networked or connected is defined as having a link based on political affiliation, ethnicity, common familial or social group, or common institutional affiliation. A firm is connected to jobseekers if they can draw on a pool of jobseekers from within their network without advertising. A jobseeker is connected to a firm if he/she is able to utilise a contact point within the firm or someone associated with the firm to improve the chances of his/her application being considered. Importantly connections, in most cases, are independent of the jobseeker's ability to perform as an employee. For example, networks formed around political affiliation, ethnicity, common familial or social group are orthogonal to ability to perform as an employee; whereas networks based on shared former educational or employment institutions may inform the recruiter of the jobseeker's ability. A firm is unfair if recruitment is based on some weighted combination of connectedness and jobseeker ability, and not solely jobseeker ability.

I argue that once there is a proportion of unfair firms in the labour market who recruit based on homophily/networks/connections rather than ability only; perceptions and behaviour in the labour market adjust; and ultimately labour market outcomes are affected. If jobseekers perceive some proportion of firms to be unfair, with each unsuccessful application, they update their prior information/beliefs based on evidence from their search process, as well as the success or failure of others around them. The unemployed jobseeker uses this data to update their subjective probability of gaining employment. The process is iterative, and perceptions are updated after each vacancy is observed. There is a tipping point. At some point, the unemployed jobseeker shifts their search to other sectors with a higher perceived probability of success, attempts to build networks and become connected or ultimately becomes discouraged and exits the labour market altogether. Ultimately, the individual quest for employment/finding a candidate by using connections changes the fabric of the labour market and the level of confidence agents have in the recruitment process.

The result is a probabilistic approach to decision making where workers match not on the most compatible or desired job, but on the job that they believe they have a higher probability of acquiring. The results offer an explanation to one piece of the puzzle where we observe low levels of search by firms and jobseekers in the presence of an expanding skilled workforce. Network-based recruitment also impacts the ability distribution of the employed, and thus provides one likely reason why we observe low productivity in many developing countries. Collectively, these results can be characterised as a negative externality where the actions of connected firms and jobseekers (and those attempting to make connections) impose costs on other agents in the labour market; and labour market outcomes are less than what is socially desirable.

The analysis in this chapter largely focuses on the jobseeker side of the problem; but also draws on the firm's decision. Methodologically, the analysis utilises a mix of analytical models and analyses data from gradautes' CVs, interviews and focus group discussions (see section 1.5.2 for a description of the data sources). The overall analysis is an iterative one, with the primary data informing the set-up of the analytical models, while at the same time giving empirical backing to some of the behavioural or outcome predictions of the analytical models.

The rest of the chapter is organised as follows. Section 5.2 reviews the literature on search and matching. Section 5.3 defines the concept of homophily in the labour market and why the use of networks emerges as a type of market friction. Section 5.4 presents a simple analytical model of the search process in the context of homophily. Section 5.5 provides illustrative evidence based on both qualitative and quantitative data on search and matching of skilled workers in Sierra Leone. Section 5.6 links this chapter to the DPhil thesis by discussing the role of the development sector in such an ecosystem. Section 5.7 concludes.

5.2. JOB SEARCH AND MATCHING – A REVIEW OF THE LITERATURE

Sierra Leone, like several other African countries, has not seen a noteworthy expansion in formal employment and/or boost in job creation despite an increasing skilled labour force. As noted in the labour force survey, the unemployment rate is highest about skilled workers (SSL, 2015). This places attention on the differences between expected and realised returns to human capital in such countries. In addition to this, there have been low levels of search using formal channels such as responding to advertised vacancies and/or registering with recruitment agencies (SSL, 2015 p.36). In essence, there are too many workers chasing too few formal sector jobs and limited search to ensure the most efficient match.

In this section, I review the literate that has addressed these two issues: paucity in hiring and limited search. First, I begin with macro-level factors or first-order conditions that drive aggregate employment in a country, namely demand and supply factors. Thereafter, I discuss factors that affect the allocation process as it relates to search and matching; grouping these factors based on overarching themes such as: (i) information and search frictions, (ii) discrimination, (iii) networks and (iv) clientelism in the labour market.

5.2.1. Macro-factors that drive aggregate employment

According to Fields (2011), workers in poor countries want "good jobs" which are steady, secure and well-paid, but there are insufficient "good jobs" for those who are willing and capable. This speaks to issues of insufficient labour demand at the macro-level to absorb all workers. Labour demand is likely to be lower in contexts of stagnant economic growth (Fields, 2011). Relatedly, low levels of investment and capital accumulation is argued to limit growth and the generation of productive employment (Nichter and Goldmark, 2009; Campbell, 2013; Tan et al., 2016). Other factors postulated to positively affect the growth of firms and consequently stimulate labour demand include a favourable business environment, intra-firm cooperation, value chains in the country, and the experience and education of the owner/manager of the firm (Nichter and Goldmark, 2009). At the macro-level, theoretical and empirical evidence also identify effective public infrastructure as a contributor to raising the productivity of private investment and labour (Morrison and Schwartz, 1992; Straub, 2008).

Furthermore, given that labour is a derived demand, the performance of firms in local product markets needs to be considered. In essence, firms must be able to sell their products in order to demand workers. Low product demand in local markets, may stem from low income among the population in developing countries; or tastes and preferences for imported goods that are associated with status (Zhou and Hui, 2003; Kinra, 2006). Moreover, the inability for firms in small open price-taking economies to compete in the presence of globalisation and liberalisation policies may lead to substituting away from locally produced goods, which puts downward pressure on employment and wages by lowering industry output and labour demand (Revenga, 1997; Egger and Kreickemeier, 2009).

It is possible that firms would like to hire, but issues on the supply side limit employment. For example, despite increasing populations in many developing countries, the types of workers demanded may not be readily available in local labour markets. This has become an important policy question in the development discourse with respect to skills levels of the labour force (World Bank, 2018), though questions as to whether graduates are overqualified or under skilled are not unique to developing countries (Quintini, 2011).

Survey data from Tanzania show that firms reported deficiencies in technical, communication, report writing, IT and problem-solving skills to name a few (Tan et al., 2016 p.29). Similar types of skill-deficits have been reported in Sierra Leone - see chapter three for a complete discussion on this and corroboratory findings in Mannah and Gibril (2012) and Darwich (2018). In order to alleviate the skills deficit, firms either train workers or hire expatriate staff (Tan et al., 2016 p, 36). Both these strategies can affect local employment. In the first case, if the firm absorbs some of the costs of training (and does not pass all the cost to workers in the form of lower wages) less employees will be hired. In the latter case, hiring expatriate staff is a direct substitution away from local workers.

5.2.2. Information and search frictions

It is possible that firms would like to hire workers, and the right types of workers are available, but there are hinderances or search frictions that prevent firms and jobseekers from coming together. Recent studies have attempted to explore search frictions on both the demand and supply side. On the supply side, Abebe et al. (2016) analyse obstacles to job search of low-skilled youths in Ethiopia. A random selection of geographic clusters was treated with either transport subsidies (of varying saturation) or with participation in a job application workshop. The results show that both interventions helped workers get better quality jobs as treatment of the application workshop and transport subsidy increased the probability of permanent employment by approximately 40 percent and 20 percent respectively. Both treatments increased the probability of formal employment by approximately 25 percent (Abebe et al., 2016 p.13-14).

Further to monetary search costs and efforts related to application documents, other studies have looked at information as a constraint to search. From the employer side, when there is imperfect information on ability levels and match quality, hiring from within a network is a likely strategy to improve the information set (Montgomery, 1991). Montgomery's (1991) argument rests on the assumption that referrals from within a network provide preliminary screening of candidates. Arguably, network-based recruitment as an initial screening tool may be even more important for entry-level workers where little is known about their abilities. As posited in Pallais (2014), there is likely inefficiently low hiring of inexperienced workers simply because they have not had a means by which to demonstrate their abilities. On the jobseeker side, acquiring information on opportunities in the market may be costly and may reduce search. Acquiring such information from within a network is therefore cost-effective (Ioannides and Loury, 2004). Studies have looked at both sides of information imperfections in the market.

Using a randomised control trial in the Philippines, Beam (2016) shows that jobseekers were incentivised to attend a job fair using a small voucher which was conditional on attendance. Ten months after the intervention, attendees where 7.1 percent more likely to broaden their search outside of the provincial areas, and 9.1 percent more likely to receive a job offer (Beam, 2016 p.33). The fair did not increase the chances of being employed by employers attending the fair, and thus the author argues that by merely attending the job fair, jobseekers obtain information and knowledge that are beneficial to future search. Similar results were found in Ethiopia by Abebe et al. (2017). Again, bringing firms and jobseekers together at the fair did not increase the chances of a match, but instead led to more intensified search by both firms and workers after the fair.

Other recent studies provide evidence that informational constraints to search may need to move beyond bringing firms and workers together, but by easing frictions with respect to selecting workers.

Abel et al. (2017) show that reference letters from former employers mitigate information asymmetry and increase call backs in South Africa. The authors design standardised reference letter templates and encourage jobseekers to have it completed by a former employer. In one experiment of the three in the study, the research team then submitted applications with and without reference letters on behalf of the jobseeker. The results show that for the same candidate, attaching a reference letter to the application increases the probability of a response from the firm from 4.2 percent to 6.7 percent; and being invited to an interview from 2.4 percent to 3.9 percent (Abel et al., 2017 p.2)

Similarly, Bassi and Nansamba (2017) and Brown et al. (2015) provide empirical evidence that providing more information to employers can be beneficial to the recruitment process. Bassi and Nansamba (2017) study the effect of certification of soft skills on the beliefs of the firm and the perceived employment prospects of workers. Firms were separated by high or low ability manager-type and results are reported based on this demarcation. The authors find that high ability managers update their beliefs on the skills of workers because of the skills certificate and workers that interacted with high ability managers update their reservation wage. No results were found for the subset of low ability managers. For workers in the middle of the skill distribution, revealing information through certification increased the probability of employment from 2.3 percent to 5.5 percent (Bassi and Nansamba, 2017 p.4).

5.2.3. Discrimination in the labour market

The literature has established that low hiring may be observed in the labour market as a consequence of low levels of labour demand, lack of an appropriately skilled labour force, transaction costs related to search, and information asymmetries that cause frictions. This literature, however, has implicitly assumed a theoretical market of impersonal exchange where there is no relationship between the buyer and seller of labour. As Arrow (1998) notes, this simple assumption breaks down in cases where there are direct personal relationships between employer and employee, or between employee and other employees. For example, the pioneering works of Gary Becker (1959) attached disutility to Whites from entering into contracts with Blacks in America. Arrow (1971) built on Becker's work, analysing two forms of taste-based discrimination: employer-employee and employee-employee discrimination. Taste-based discrimination are forms of non-market discrimination (Arrow, 1971). Arrow's predicted result for both is a segregated labour market, but no wage differential between groups.

The employer-employee form of taste-based discrimination though rational in the economic-sense, is not profit-maximising in a competitive labour market; and it follows that non-discriminating firms should drive out those that discriminate (Arrow, 1971). Yet racial discrimination in the labour market has persisted. For example, Lang and Lehmann (2012) review a series of empirical studies conducted between 1990 and 2010 and show there is consensus among researchers on the existence of wage differentials between White and Black American males. Moreover, policy and research on affirmative action are direct responses aimed at combating discrimination in the labour market - see Fang and Moro (2011) for a survey of the literature.

One explanation of observed discrimination put forward by Arrow (1971) relates to the costs associated with firing white workers because of upfront investments in labour say. If the firm has invested in training of white workers, the firm may be willing to pay white workers more as compensation for their dislike of working with Black workers to prevent them from leaving the firm. Arrow’s reasoning predicts wage differentials between groups. Hence, by introducing up-front investment costs which make separation costly, taste-based employee-employee discrimination can be reconciled with profit-maximising by the firm.

A second explanation consistent with profit-maximisation is statistical discrimination in cases of asymmetric information. For instance, if group A is on average less productive than group B as a result of some unobservable characteristic, over time the employer uses the observable trait of group A (say race or gender) as a proxy for the unobservable trait that is correlated with lower productivity (Phelps, 1972). Though the theory of statistical discrimination provides a market-based explanation of discrimination in the labour market, distinguishing this from non-market explanations like taste-based discrimination is difficult as this requires the ability to observe labour’s marginal product (Arrow, 1998).

Another non-market explanation relates to social capital and falls under “the theme that social linkages alter resource allocation processes” to borrow the words of Arrow (1998, p.97). The principle holds that although social networks are initially developed for non-economic reasons, there is still an impact on economic efficiency. It follows that the value placed on maintaining social interactions, or one’s place in the network, overcomes profit maximisation (Arrow, 1998). Arrow’s evidence of this stems from Granovetter’s (1974 cited in Arrow, 1998) work on job referrals through social networks.

The categorisation of different employment prospects and outcomes in the labour market in this chapter aligns with network-based explanations as described in the paragraph above. As such, selected recent studies are presented in the next subsection.

5.2.4. Networks and the labour market

Workers have used networks to access employment opportunities. Topa (2011) synthesises the body of literature and the evidence suggests that the use of networks span continents and national income levels. In the US, based on the sample, estimates range from 50 to 87 percent of people who secured their jobs through networks (Topa, 2011 p.1199-1200). In the Philippines, "social networks are the most cost-effective way to look for work in the capital region" (Beam, 2016 p.33).

The same phenomenon appears to be present in Sierra Leone. According to the labour force survey, 62.8 percent of the labour force found their current job through a family, friend of acquaintance (SSL, 2015 p.26). Finding employment through networks is common in both rural and urban areas of Sierra Leone. Finding employment through one's network is reported to decline with education level, reducing from 67 percent for those with no formal education, to 59.8 for those who competed primary education, to 42.4 percent for those who completed secondary education, to 31.4 percent for those with some level of tertiary training (SSL, 2015 p.27).

Arbex et al. (2019) build a theoretical model to show the effects of networked-search on labour market outcomes. In their model, employment can be found through direct contact with a firm or through the jobseekers' network. The authors show that networked workers are more likely to find jobs, have longer tenured contracts and earn higher wage. The underlying argument is that those who are better connected are better able to obtain referrals. Better connected in Arbex et al.'s model implies that the connected are in turn connected to other highly connected individuals who are higher up the job ladder. It is through these connections that networked workers can be referred and negotiate higher wages and better contracts (Arbex et al., 2019 p.694).

Earlier work by Brown et al. (2015) confirm Arbex et al.'s (2019) theoretical predictions. Brown et al. (2015) use firm-level data on job applications in the US to show that employee referrals are associated with an increased probability of being interviewed and hired (7.3 percent and 2.4 percent respectively), an initial 2.1 percent premium on their starting salary that gradually disappears, and longer tenure at the company (p.181-182).

Though the use of referrals has been shown to ameliorate information asymmetries for firms and cost of search for jobseekers as described in section 5.2.2, they can lead to an insider-outsider situation as theorised by Calvó-Armengol and Jackson (2004) where outsiders are disadvantaged in the labour market. When networks are formed around gender, ethnicity, race for example, it follows that these minority groups may be disadvantaged in employment outcomes (Montgomery 1991; Tassier and Menczer 2008).

Beaman et al. (2018) provide empirical evidence of this insider-outsider effect with respect to gender using a randomised control trial in Malawi. The study shows that women are statistically less likely to be referred by men, and if female referrals are made by women, they are less qualified on average. The result is that less qualified women are referred, and this is statistically different from the outcome where women apply through observing the advertisement themselves (Beaman et al., 2018 p.123).

5.2.5. Clientelism, corruption and the labour market

In the developing country context, the ills of using networks in the labour market have been primarily discussed in relation to corruption and the effects on workers and firms. The corruption literature is broad and spans the causes of corruption and its effect on institutions, private sector investment, growth, inequality, to name a few (Ades and Di Tella, 1999; Szeftel, 2000; Svensson, 2005; Olken and Pande, 2011; Williams and Kedir, 2016). There is also a budding discourse on clientelism and patronage in political and development studies research, from which applications to the labour market can be made. Here, I review a selection of papers from this literature. In so doing, political networks are considered as a special type of network.

Szeftel (2000 p.427) defines corruption as "the misuse of public office, public resources or public responsibility for private - personal or group – gain". The use of office to promote or directly influence the career advancement of a candidate either for personal gain or that of one's political or social group is therefore an example of corruption, patronage or clientelism in the labour market. Clientelism specifically is built on the principle of a give-and-take or quid-pro-quo relationship, which allow both patron (the individual with higher status or power) and client (the person of lower status or power) to benefit, though at times not equally (Roniger, 2004).

The mechanisms driving those relationships range from pure exchange, to political identity or coercion (Szeftel, 2000; Hicken, 2011) and manifest in "vote buying, jobs for the boys, schools being built in key constituencies" (van de Walle, 2007 p.13), to name a few. As Szeftel (2000 p.435) note, if clientelism "permits access to state office and resources that would otherwise be denied, that access is hardly democratic". Analogously, if political networks give access to employment opportunities for some groups over others, such access can be deemed unfair. Some studies have sought to tease out the effects of corruption on the labour market.

Bouzid (2016) attempts to establish a causal relationship between corruption and youth unemployment using a global dataset. The results show that higher corruption perception measures increased youth unemployment, especially among the educated. This then reinforces a vicious cycle of using corruption to find jobs. Similar evidence was found by Fafchamps and Labonne (2017) at the country level, who show that relatives of current office holders in the Philippines are more likely to be employed in better paying jobs.

Though corruption may be bad for youth employment (Bouzid, 2016) and the distribution of jobs (Fafchamps and Labonne, 2017), there may be positive benefits at the firm-level. Williams and Kedir (2016) show that corruption has a positive effect on the annual sales, permanent employment growth and productivity growth of firms across 40 African countries. In Williams and Kedir's (2016) study, 32.9 percent of firms believe a bribe needs to be paid to get things done. The authors note that the effects may be positive at the firm-level, but may not be optimal for the country as a whole. Kong et al. (2017) similarly find that corruption greases the wheel and improves firm performance in non-state-owned enterprises (non-SOEs), but may be disadvantageous to SOEs.

5.2.6. Situating the current study in the existing literature

Based on the literature reviewed, in order for there to be a thriving labour market with efficient levels of search and optimal matching, I posit that four things are needed, at the macro-level: (i) labour must be demanded by firms and (ii) jobseekers must have the requisite skills that are demanded in the labour market. With respect to labour allocation: (iii) barriers to search such as direct search costs and information asymmetries must be minimised and (iv) networks should not be excessively used in the search and matching process. The first three of these features have been established in the literature presented in this section. The rest of the chapter evaluates the fourth and contributes to the literature by introducing network-based recruitment as a search friction.

5.3. PATRONAGE BASED ON HOMOPHILY AND NETWORKS IN THE LABOUR MARKET: A CONCEPTUAL FRAMEWORK

"Similarity breeds connection"

McPherson et al (2001, p.415)

The conceptual framework underpinning the subsequent analysis of patronage in the labour market is multidisciplinary. I borrow the notion of homophily from the sociology literature, apply mechanisms of clientelism and patronage from political science, and study the effects of search and matching from the economics discourse.

I argue that the use (and over-use) of all types of networks to secure employment has distortionary effects in the labour market. Throughout the analysis, I refer to patronage rather than corruption, to broaden the focus beyond political groups only. Though political connections have been shown to be important (section 5.2.5 above), belonging to other types of network or groups can drive employment outcomes (sections 5.2.3 and 5.2.4 above). I take a Cambridge dictionary definition of patronage to be "the power of a person to give someone an important job or position."[55] In the analysis, the patron is someone from the same network or group as the prospective candidate (client).

[55] See online definition here: https://dictionary.cambridge.org/dictionary/english/patronage

5.3.1. A conceptual framework

According to McPherson et al (2001, p.416), "homophily is the principle that a contact between similar people occurs at a higher rate than among dissimilar people". The term was coined by sociologists in the 1950s to explain homogeneity in social networks. In reviewing the many ways in which homophily has been conceptualised over the years, McPherson et al (2001) identify various types or causes of homophily which include race and ethnicity; sex and gender; age; religion; education, occupation, social class, geography, family ties, or organisational foci (school, church, community group). Irrespective of the cause, differences which arise from these traits translate into differences in social networks and network distances. This is problematic to the labour market when cases of labour market discrimination or clientelism are formed around types of homophily.

Historically, three mechanisms of clientelism have been presented in the literature, namely: (i) coercive dependence (uses violence or threats to secure support), (ii) politicised identity and (iii) exchange relations (Szeftel, 2000). These mechanisms have all emerged in the Sierra Leonean data. Firstly, there is evidence of compliance to political pressures to hire staff for fear of retribution (for instance withholding operations licences). Secondly, there is a mass of evidence both historical (Kandeh, 1992) and from the present data that speak to the politicisation of ethnic identities in Sierra Leone. And thirdly, there is sufficient evidence of exchange relations such as complying with requests to hire an individual to secure a kickback or pay-off, future contract, or reducing the burden of support. The latter of these three mechanisms is essentially a monetised form of clientelism.

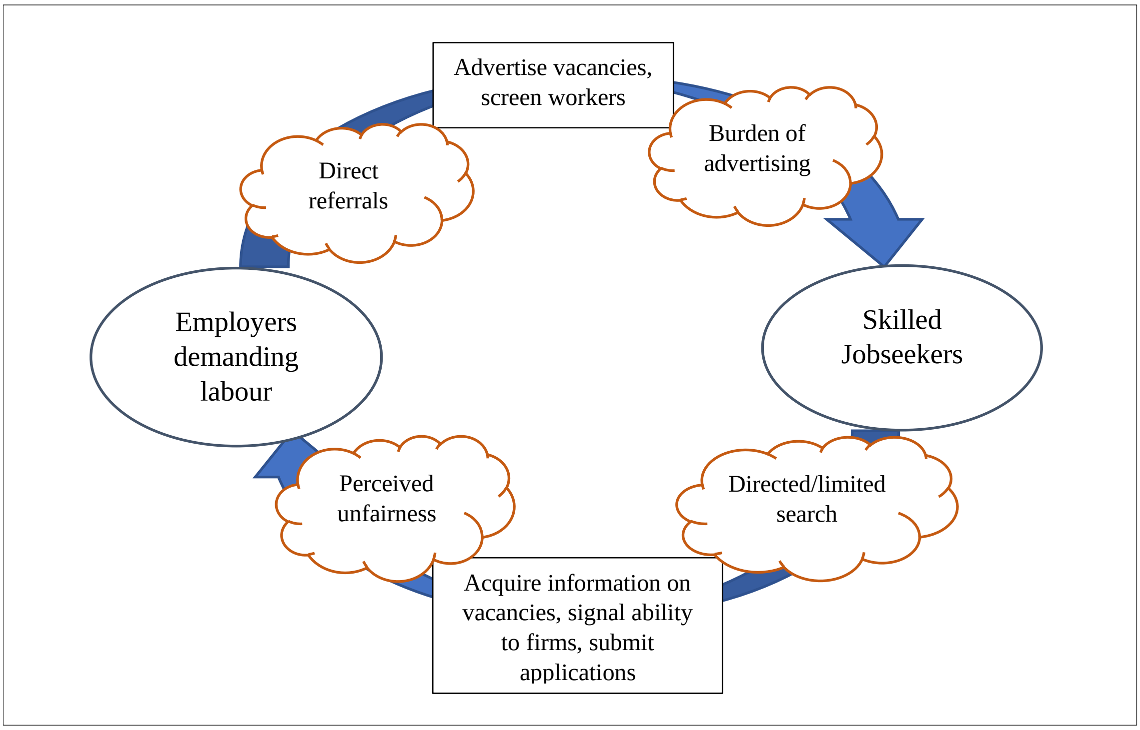
Arrow (1971, 1998) observe that taste-based discrimination though rational, is not profit-maximising. Through the lens of clientelism, specifically the exchange mechanism of clientelism, discrimination can be monetised by way of a kick-back or pay-off to the employer for hiring from a particular group. Section 5.4.1 of this chapter models the employer decision and shows that hiring from within a particular network, though discriminatory or unfair, can be rational, and depending on what drives patronage, profit-maximising as well. Moreover, one of the results of the model shows that it is possible to knowingly hire a lower ability worker when the gains to patronage are sufficiently large for the employer. This result distinguishes the model from statistical discrimination models which follow the works of Arrow (1971) and Phelps (1972).

The chapter engages with the search and matching literature by conceptualising patronage in the labour market as a market friction in its own right, and one that is different from conventional characterisations of search frictions. For example, Abebe et al. (2016) show that transport subsidies to jobseekers are likely to increase search. The result may not hold if jobseekers do not believe they have a fair chance of being hired because they are not part of the employers' network. In such cases, jobseekers decide to search not by a simple comparison of costs and benefits, but by also considering the probability of securing employment. Similarly, interventions aimed at bringing firms and workers together through job fairs as in Abebe et al. (2017) and Beam (2016) may not lead to increased employment for jobseekers attending the fairs if firms recruit from within their networks. Policies to promote increased levels of open advertising by employers may not lead to an increase in applications if the advertisements are not perceived to be credible. Homophily-based networks therefore warrants its own assessment as the policy recommendations are likely to be different.

As outlined above, based on evidence from existing literature, I posit that four things are needed to facilitate a thriving labour market with efficient levels of search and matching: (i) labour must be demanded by firms, (ii) jobseekers must have the requisite skills that are demanded in the labour market, (iii) barriers to search such as direct search costs and information asymmetries must be minimised and finally, as I will argue in the rest of this chapter (iv) networks should not be excessively used in the search and matching process. Figure 5.1 graphically illustrates this conceptual framework.

In other words, firms should be able to and want to search (the circle on the left), they need to search for something that they want, that is, appropriately skilled labour (the circle on the right), there should be little barriers to do so for both firms and workers (the blue arrows are relatively smooth with little impediments), and this is done within a setting or environment that encourages free uninhibited search. As I will give reasons for in the subsequent sections, use of networks through homophily fosters perceptions of unfairness in the labour market, which in turn *muddies* the labour market by limiting the flow of information, the intensity of search and causing some jobseekers to withdraw from the labour market altogether. Networks therefore change the environment of the labour market, and in so doing, may limit the number of jobs created and advertised and by extension, the number optimal matches.

Figure 5.1: Homophily in the labour market – a conceptual framework



This chapter thus reassess the role of social networks based on homophily by studying networks not only as a source of richer information for agents in the labour market and as a facilitator to the search process, but as a type of search and matching friction. I use the common definition of a market friction to be something that limits the smooth exchange of goods or services. I take as given that there are gains to individual jobseekers and firms from using network. What this chapter is more interested in is the potential negative externalities that may arise, which negatively impact on and distort the overall functioning of the labour market.

A simple example can shed light on the potential externality effects. One can imagine that in societies with multiple religious, ethnic and political groups, the flow of information may be more fluid within groups than across groups. A job vacancy advertised by a Christian human resource (HR) manager may be informally discussed when the HR manager attends church or other Christian gatherings and shares the information with his Christian friends. The HR manager does not attend mosques and other Islamic gatherings so Muslim candidates may be exposed to less information. In this case, the limited flow of information is a by-product of circumstances. This may however be deliberate as well. Take for instance a job that is internally advertised, and employees are able to refer non-employees who are members of their network. In addition to restriction on information, one can imagine a third scenario where a government position is widely advertised, but in reality, reserved for someone politically connected. These examples lead to limited information in the market and consequently fewer applications, and in the case of the latter, recruitment that is not solely based on merit. Taking the definition of a negative externality as a third-party cost, the use of networks based on homophily can be costly to both firms and workers.

Before proceeding, I will explain how homophily manifests in the Sierra Leonean labour market in order to give context to the analytical section that follows in section 5.4. The types of networks described below are grounded in the qualitative data collected.

5.3.2. Homophily in the Sierra Leonean labour market

Homophily in the labour market in Sierra Leone stems from political, ethnic, social and institutional/organisational networks. Religious networks are another likely cause, but this was not largely observed in the data. Each of these manifests in different ways with varying impacts.

Political networks appear to be the biggest and most pervasive of all types, and is deep-rooted in Sierra Leone's history.[56] They manifest when the hiring organisation actively seeks out a political connection (in cases where a public sector organisation is hiring) or uses political influence to affect

[56] Reflecting on 1970s Sierra Leone, Harris (2014, p.71) traces political patronage to colonial times noting that: "following on from colonial patterns of control, patrons in the state disburse state resources to clients in a cascading vertical chain in exchange for vital political support in an uncertain political arena, whether authoritarian or democratic."

the hiring process in a private company or NGO. The latter is often part of a *quid pro quo* situation where the recruiter expects a future favour from the politically connected or where the recruiter complies for fear of retribution - for example non-renewal of operating licences. In the first case, the recruiter's aim is to maximise his/her benefits from a nepotistic system, while in the second case, the recruiter aims to minimises his/her costs.

Ethnic networks form around common ethnic groups. In Sierra Leone, this mirrors political networks to a large extent as the two dominant political parties are divided along ethnic lines – the All People's Congress (APC) affiliated with Temnes and the Sierra Leone People's Party (SLPP) affiliated with Mendes.[57] In addition to the Temnes and Mendes, there are at least 15 other ethnic groups according to SSL (2015), but these groups historically align with one of the two dominant parties. Knowledge of ethnicity in the labour market cannot be avoided as applicants can be easily sorted into an ethnic group based on their surname, which is present on all application documents. Anecdotally jobseekers muse about the power of a Krio surname. Krios are originally from the Americas and Caribbean, and often have traditionally 'English' surnames (like Williams or Roberts, for example).

Social connections include networks comprising friends, family and members of one's local community. Sierra Leoneans take pride in what is colloquially known as *"the cotton tree culture"* – a culture whereby, those endowed, provide "*shade"* to others in the community. Shade can range from offering a meal to helping someone to secure employment. In this case, the individual helping someone to secure a job in his/her social network is seen as being powerful and respected for this ability. According to respondents, another incentive to secure employment for those in one's social network is to lessen the burden if the candidate being helped is financially dependent on the referee.

And finally, institutional/organisational networks. Networks form around educational institutions at both the secondary and university levels. Some human resource managers report drawing on connections from their alma mater and asking the respective heads of department to suggest able

[57] Kandeh (1992) discusses this in his paper: "Politicisation of Ethnic Identities in Sierra Leone".

candidates. Lecturers who are full-time employed in industry and also engage in part-time teaching often create internships for students at their place of employment. These internships, in a significant number of cases, lead to full-time employment. The rationale is that having been through and/or exposed to a particular pedagogical system, the employer is able to ascertain, to some extent, the types of knowledge and skills that a graduate from that institution would attain. In essence, some recruiters use this strategy to minimise information asymmetries in the market.

Collectively, these types of homophily in the labour market manifest in three ways. In the first instance, the recruiting organisation uses the networks of their employees (and their networks' networks) to advertise vacancies more broadly. In the second case, jobseekers utilise their networks to obtain a meaningful referral letter which gives a positive signal to the recruiter. In the third case, members of the same network use their connection to suggest someone be hired. In this instance, the role of the contact transcends an informative role to a more suggestive role, introducing patronage into the labour market. The third scenario was most dominant in the primary data and is integral to the rest of the analysis.

In sum, the specific nature of homophily (the type of group), the mechanism through which clientelism and patronage manifest (identity, coercion or exchange), the network distance between the recruiter and connected candidate (the precise relationship between patron and client) and the default strategy of the recruiter (to be fair or unfair) inform the size of the gains/losses to nepotistic recruitment. This is captured by the variable λ in the next section.

5.4. MODELLING SEARCH IN THE CONTEXT OF HOMOPHILY - THE FIRM AND JOBSEEKER DECISIONS AND BEHAVIOURAL RESPONSES

This section explores the labour market in the context of homophily using a series of decision-making models. Throughout this section, I take a similar approach to Arbex et al. (2019), Calvó-Armengol and Jackson (2004) and Ioannides and Loury (2004) assuming that there are two ways in which the firm and jobseeker can make contact: either through a network or directly without a network. The models themselves have been influenced by various search theoretic models in the literature - see Rogerson et al. (2005) for a review of search models.

First, I explore the decision-making of the firm and worker in the search process when recruitment from networks is a feature of the labour market. In so doing, I show that there are conditions under which it is in the firm's interest not to advertise vacancies and/or to recruit from within their network. Second, I explore the jobseeker's application decision when faced with an advertised vacancy. I show that in certain situations, it will be in the jobseekers interest not to apply for vacancies, apply to some collection of firms that are perceived to be fairer (a given sector for example) and/or develop and exploit networks for personal employment gain. These decision-making models demonstrate the role of individual perceptions, incentives and behaviour in shaping collective labour market outcomes.

The analytical models presented below are founded on observations from the labour market in Sierra Leone and attempts to formalise the qualitative data collected. The models may be applicable to other contexts, but they have been formulated to fit the data from Sierra Leone – a small low-income country with a small formal sector, a development sector of a noteworthy size, surplus university graduates and weak signals of ability given deficiencies in the education system which produce skilled workers.

5.4.1. Modelling the employer's recruitment decision

The employer observes the pool of potential recruits in the labour market and must make a selection for a current vacancy. The employer must decide if to recruit based on responses to an advertisement or from within their network. The decision is taken by comparing the net benefits of each strategy, which varies with the type of candidate the organisation can recruit with and without advertising. Advertising attracts a wide range of applicants which increases the chances of the match being optimal, but screening is costly as there are information asymmetries as theorised by Akerlof (1970) and firms experience difficulties in separating low ability from high ability candidates. All variables relevant to the employer model are defined in Box 5.1.

Box 5.1: Key variables - the employer's model

p is the share of high ability workers among the pool of potential recruits, $0 \leq p \leq 1$

q is the share of high ability workers in the firm's network, $0 \leq q \leq 1$

y^H is the value of output produced by a high ability worker, $y^H > 0$

y^L is the value of output produced by a low ability worker, $y^L > 0$. $y^H > y^L$ by definition.

N is the total number of applicants that apply, $N = N^H + N^L > 0$, where N^H are high ability applicants and N^L are low ability applicants

n is the number of applicants that apply from within the network without any advertisement. $n > 0$ and $N > n$ by definition as $n \subset N$.

s is the cost of screening each application, $s > 0$.

α is the screening technology of the firm, $0 \leq \alpha < 1$

c is the fixed cost of placing an advertisement, $c \geq 0$

w is the wage paid by the firm and earned by the successful applicant, $w \geq 0$. w is fixed and not contingent on ability type.

λ is the net benefit of being nepotistic. $-\infty \leq \lambda \leq \infty$. λ may be positive if the firm gains from nepotism, or negative if being nepotistic is burdensome.

Assume p and $(1 - p)$ are the shares of high and low ability workers in the pool of potential recruits who generate output y^H and y^L respectively, and output from a high ability worker is larger than that of a low ability worker ($y^H > y^L$). High ability here refers to someone who is qualified and is able to successfully fulfil the job requirements.

The employer also has access to a subset of all potential recruits through their network, which contains q and $(1 - q)$ high and low ability workers respectively. The employer has access to these workers through political, ethnic, familial, social or institutional networks, and is able to limit the recruitment to their network. The employer may or may not be able to tell ability type from within their network depending on the type of network. One can imagine a recruiter may know graduates from church, within the local community, or through family friends that they think may be well-suited to the vacancy. These types of networks are likely to be independent of the worker's ability.

The employer may also have a network where data are compiled from volunteers and interns who previously worked at the organisation. Here the network confers some information on ability. In both cases, the employer is able to recruit without advertising.

The costs of open recruitment to the firm includes the fixed cost of placing the advertisement (c) and marginal costs of screening each application received (s). The former is simply the financial cost of creating and posting an advertisement. The latter is linked to information asymmetries. The employer is unable to distinguish high ability from low ability jobseekers by observing university degrees due to deficiencies in the education system. In this context acquiring a university degree is not a clean signal as Spence's (1973) model might suggest. The employer therefore screens candidates using a combination of interviews and assessments.

The quality of the screening process when ability is unknown is given by α. The higher the quality of the screening process, the higher the chances of identifying and recruiting a high ability worker versus a random draw from the distribution. By assumption, $0 \leq \alpha < 1$. By defining $\alpha \neq 1$, there is always a small chance that the employer is unable to distinguish ability-type. Because of this, the employer observes the worker in the six-month probation period. If $\alpha = 0$, screening is essentially useless and adds no information. In such a case, the employer cannot distinguish high from low ability and therefore a pooling equilibrium results. Regardless of the quality of the screening process, the firm will incur screening costs s for each application received. These costs include staff time utilised to read through applications, sort CVs, contact candidates and conduct interviews. A higher quality of screening does not imply lower screening costs; but increases the chances of selecting the best candidate. These costs are incurred for both networked and general applicants.

Finally, I assume there are additional costs/benefits that derive from using networks for recruitment. These are intangible and arise from the nepotistic nature of the firm and the signals advertising can send about the reputation of the firm. This is captured by λ, which may be positive or negative depending on the firm. λ will be larger (and positive) if the firm derives benefits from recruiting within its network. One can imagine the respect gained for assisting someone to secure a job, the *quid pro quo* with an influencer, the "kick back" or claiming a share of the recruit's salary, or the reduced burden of supporting the previous unemployed person if they are part of a familial or social network. These are all examples of the nepotism benefits or the gains to the employer from not recruiting from advertisements. λ will be smaller (and in some cases negative) if recruiting from within the network is a burden to the firm. In this instance, one can imagine a firm that advertises to genuinely recruit and may be approached by someone in their network to hire someone. λ will also be smaller if the reputational benefits of advertising are high. For example, by advertising a vacancy, the firm may be complying with employment laws, human resource policies or simply maintaining an external image of transparency.

I assume that there are surplus graduates in the market, and once the employer decides to advertise or not, workers will respond, and the vacancy will be filled. There are instances where a skills gap might exist as discussed in chapter three, but I assume the firm then seeks out a different market where the requisite skills are available, for example a market where expatriate workers are sourced. The advertisements and recruitments I discuss here are therefore for local recruits, and advertisements are done using local media. The successful recruit is paid a wage (w), which is independent of ability and determined by the firm's internal salary grade for graduates.

The firm's decision rule is to recruit through advertising if the expected net benefits of filling a vacancy through advertising (that is, the contribution to output from recruitment less the costs from advertising and screening) is greater than the net benefits of recruiting using networks without advertising. Intuitively, the firm will only advertise to recruit if it is in its interest to do so.

There are two cases to consider. In the first case, the employer is unable to determine the ability of those in his/her network when networks are orthogonal to ability. In the second case, homophily is not orthogonal to ability. Each of the cases are considered below.

Case 1: Network is independent of ability.

In this case, the screening quality is the same for general and networked applicants.

$$net\ benefits\ of\ recruiting\ through\ advertising$$
$$> net\ benefits\ of\ recruiting\ without\ advertising$$

$$\alpha y^H + (1-\alpha)[py^H + (1-p)y^L] - w - c - sN$$
$$> \alpha y^H + (1-\alpha)[qy^H + (1-q)y^L] - w - sn + \lambda$$

$$(1-\alpha)[py^H + (1-p)y^L] - (1-\alpha)[qy^H + (1-q)y^L] > s(N-n) + c + \lambda$$

$$(1-\alpha)[(py^H + (1-p)y^L - qy^H - (1-q)y^L] > s(N-n) + c + \lambda$$

$$(1-\alpha)[(p-q)y^H - (p-q)y^L] > s(N-n) + c + \lambda$$

$$(1-\alpha)(p-q)(y^H - y^L) > s(N-n) + c + \lambda$$

From the left-hand side of the equation, the employer looks at the relative share of high ability workers in the potential recruitment pool and in his/her network $(p-q)$ and the difference in output of a high and low ability worker against $(y^H - y^L)$. This is adjusted by the screening error $(1-\alpha)$. The left-hand side therefore gives the expected benefits of using advertising to recruit and is compared to the costs on the right-hand side. From the right-hand side, the first two terms are the cost of screening and the cost of placing the advertisement. These are fairly standard and can be seen as the marginal cost of screening those that respond to the advertisement $(s(N-n))$ and fixed costs (c) of placing the advertisement. The last term on the right-hand side is an adjustment cost (λ) and directly relates to the presence and use of networks in the labour market. These costs may be intangible and determined by the value placed on information and reputational gains from advertising versus recruiting from within existing networks. λ may be monetised if the recruiter is given (foregoes) payment for hiring from within their network (from advertising).

From above, the employer will be more likely to use advertising to recruit in the following instances, ceteris paribus:

i. The larger the share of high ability workers in the pool of potential recruits relative to the share in the employer's network

ii. The higher the added value to output of recruiting a high ability worker

iii. The cost of screening falls

iv. The net benefits of nepotistic recruiting falls and/or the reputational value of advertising increases

v. The quality of the screening process is lower, and $q \neq 0$.

The first four results are intuitive. To understand the fifth, we need to also consider the employers network and the types of workers that are available. In this simple world of dichotomous workers (high ability versus low ability) if the recruiter has a high quality screening process and is able to distinguish between types, then when there are some high ability workers in the recruiter's network ($q \neq 0$) the recruiter would easily identify this/these worker(s) and offer the job to them, rather than bearing the costs of advertising.

Case 2: Network is not independent of ability

In this case, the firm can identify high ability workers from within their network with probability one. I take the special case where there is at least one high ability worker in the recruiter's network, and he/she is able to identify that jobseeker. One can imagine a candidate that was taught by the recruiter or someone who volunteered at the organisation previously. In both cases, the recruiter would have been able to observe (to some extent) the ability of the networked candidate. The chances of a pooling equilibrium from recruiting within the network disappears and the employer problem reduces to the following:

$$net\ benefits\ of\ recruiting\ through\ advertising$$
$$> net\ benefits\ of\ recruiting\ without\ advertising$$

$$\alpha y^H + (1-\alpha)[py^H + (1-p)y^L] - w - c - sN > y^H - w - sn + \lambda$$

$$(1-\alpha)[py^H + (1-p)y^L] - (1-\alpha)y^H > c + s(N-n) + \lambda$$

$$(1-\alpha)[py^H + (1-p)y^L - y^H] > c + s(N-n) + \lambda$$

$$(1-\alpha)[(p-1)y^H + (1-p)y^L] > c + s(N-n) + \lambda$$

$$(1-\alpha)(1-p)(y^L - y^H) > c + s(N-n) + \lambda$$

As above, the recruiter compares the expected differences in output from open recruitment versus recruiting from their network to the relative costs. The costs on the right-hand side are the same as in case 1 above. On the left-hand side, the benefits depend on the screening technology, share of high ability worker in the recruitment pool and difference between outputs of high and low ability worker. The third term on left-hand side is negative given that $y^H > y^L$. The first and second terms are positive, so the left-hand side is negative. It follows that for the right-hand side to be smaller than the left-hand side, (λ) must be negative and sufficiently large since the first two cost variables $(c + s(N-n))$ are positive. λ is negative when there are costs to nepotism, or the additional benefits to advertising is large. In other words, a firm with known high ability workers in their network only turns to advertising as a means of recruitment if the cost of nepotism is high or the intangible benefits of advertising are high.

And finally, it may be the case that the recruiter cannot source a high ability worker from within his/her network, that is, the network comprises only low ability workers and this is known to the recruiter. The problem reduces to:

$$\begin{aligned} &net\ benefits\ of\ recruiting\ through\ advertising \\ &\qquad > net\ benefits\ of\ recruiting\ without\ advertising \end{aligned}$$

$$\alpha y^H + (1-\alpha)[py^H + (1-p)y^L] - w - c - sN > y^L - w - sn + \lambda$$

$$\alpha y^H + (1-\alpha)[py^H + (1-p)y^L] - y^L > c + s(N-n) + \lambda$$

Again, the recruiter compares the expected differences in output from open recruitment versus recruiting from their network to the relative costs. From the left-hand side, if the firm’s screening technology is good and the firm is able to select a high ability worker, the left-hand side is positive. The firm would therefore opt for market-based recruitment, unless the benefits from nepotism λ is sufficiently high to make hiring a low ability worker rational. If the screening technology is poor and the firm has a high chance of selecting a low ability worker, they would recruit from within their network if λ is positive as the output from a recruit within or outside the network is likely to be similar. Table 5.1 summarises these results.

Table 5.1: The employer's hiring decision

	Case	Conditions under which the firm hires from advertisement
1	Network is independent of ability	If there are more high ability workers in the potential recruitment pool relative to the firm's network $(p-q)$, high ability workers are valuable $(y^H - y^L)$, the cost of advertising and/or screening are relatively low $(s(N-n)+c)$, the additional gains to nepotism is low and/or the reputational gains from advertising are high (λ is small)
2	Network is not independent of ability and there is a known high ability worker in network	If the cost of nepotism is large and/or the reputational benefits from advertising are high (λ is large and negative)
3	Network is not independent of ability and no known high ability workers in network	If the costs of nepotism is large (λ is large and negative)

In sum, the analysis above allows the derivation of conditions under which the firm would recruit through advertisement. It has been shown that a rational firm recruits from within their network if the conditions in the second column of Table 5.1 are not satisfied. Williams and Kedir (2016) similarly show that engaging in corruption and bribery can be rational. Network based recruitment, similar to corruption, can negatively affect systems though the decisions are rational at the individual level.

In the case where the firm selects from within their network, the firm recruits based on some combination of ability and personal characteristics based on homophily. Such behaviour affects the functioning of the labour market as jobseekers perceive recruitment based on a combination of ability and connectedness as unfair. If a percentage of firms opt to recruit from their network, this impacts on the jobseeker decision. I now turn to explore how the firm's decision to recruit from within their network affects the behaviour of jobseekers.

5.4.2. Modelling the jobseeker's application decision

Firms are perceived to be fair or unfair by graduates. A firm is perceived to be fair if observed recruitment is based on ability only, and unfair if recruitment is based on some combination of ability and connectedness. Both connected and unconnected jobseekers have information on the proportion of fair employers in the labour market. One can imagine this information is received from graduates in previous years, members of their cohort and friends employed.

The unconnected jobseeker is an outsider and is aware of the share of fair employers, but not specifically which firms are fair. The connected jobseeker is an insider and can identify unfair firms that they are highly connected to. These connected jobseekers can be recruited by firms they are connected to without open advertising. The employer knows whether they are fair or not. Having observed a vacancy, the jobseeker must decide whether to apply or not. All relevant terms used in the model are presented Box 5.2.

Box 5.2: Key variables - the jobseeker's model

w is the wage earned by the successful applicant and paid out by the firm. w is assumed to be independent of ability and connectedness

$\bar{w}^i$ is the reservation wage, or outside option for jobseeker i

a is the cost of making an application

β is the share of fair firms in the market. $0 \leq \beta \leq 1$

θ^i is the ability level of the i^{th} candidate

γ^i is the probability of a successful application, where $\gamma^i = \alpha(\theta^i)$. That is, the probability of being selected is based on the firm's capacity to observe ability level. $\alpha(\theta^i) = \gamma^i = \gamma^L$ for low ability workers and $\alpha(\theta^i) = \gamma^i = \gamma^H$ for high ability workers. For high screening capacity, $\gamma^H = {}^1/_{N^H}$ and $\gamma^L = 0$. Whereas for low screening capacity, $\alpha(\theta^i) = \gamma^i = \gamma^H = \gamma^L = {}^1/_N$.

η is a dichotomous variable representing connectedness. $\eta = 1$ if the jobseeker is sufficiently connected to be employed through his network and $\eta = 0$ if the jobseeker is not connected. One can imagine that there is some threshold level of connectedness above which the jobseeker can utilise his/her network to improve employment prospects and be recruited without open advertising.

υ is the weight the recruiter places on ability. $0 \leq \upsilon \leq 1$. The higher the gains from nepotism, the smaller the weighting on ability in selection, $\frac{\partial \upsilon}{\partial \lambda} < 0$.

$1 - \upsilon$ is the weight the recruiter places on being connected to the jobseeker.

The probability of a successful application is given by $\upsilon\gamma^i + (1-\upsilon)\eta$ and is bounded on the interval $[0,1]$. υ is the weight the recruiter places on the applicant's ability and the remaining weight $(1-\upsilon)$ is given to connectedness. In this simplified world, the employer recruits based on a weighted average of two parameters only: ability and connectedness. The employer attempts to observe ability as a measure of capacity to successfully carry out the job, and connectedness as a measure of homophily which minimises the network distance between the employer and the jobseeker.

The true ability of the candidate is θ^i. The probability of being selected based on ability as observed by the firm (γ^i) is determined by the firm's screening capacity (α from the firm model), such that $\gamma^i = \alpha(\theta^i)$. If the firm has a high screening capacity and can separate ability types, the probability of a high ability worker being selected is a random draw of high ability applicants ($\gamma^H = {}^{1}/_{N^H}$) and low ability workers have no chance of selection based on ability $\gamma^L = 0$. Whereas for low screening capacity the probability of a high or low ability worker being selected is a random draw of all applicants ($\gamma^i = \gamma^H = \gamma^L = {}^{1}/_{N}$).

In the case of the fair firm, where selection is purely based on ability ($\upsilon = 1$), the applicant's probability of being hired for a job is γ^i, and there is a $1 - \gamma^i$ chance of not being selected by a fair firm. On the other hand, a firm that is completely unfair and recruits purely based on connections ($\upsilon = 0$) will only be interested in networked candidates ($\eta = 1$). The jobseeker is able to ascertain if they are an insider ($\eta = 1$) or an outsider ($\eta = 0$) in a networked labour market. The majority of firms select based on a combination of ability and networks. The jobseeker observes an advertised vacancy and must decide if to apply given the information. The process can be analysed using the decision tree in Figure 5.2.

If the jobseeker deems the wage rate to be below his/her reservation wage ($\overline{w}^i > w$), he/she does not apply to the vacancy and is not hired, but bears no application costs. Here, the net payoff is the reservation wage or outside option. Should the jobseeker decide to apply to the vacancy, he/she encounters a fair recruiter with probability β, and an unfair recruiter with probability $1 - \beta$. If the jobseeker encounters a fair firm, he/she can be successful or not, but this is entirely contingent on the jobseeker's ability and how this matches the job description. The jobseeker therefore estimates the probability of success as γ^i. If the vacancy was posted by an unfair firm, the jobseeker has little confidence on being selected based on ability only and modifies the estimated probability of a successful application taking into account their connectedness.

The payoffs for each outcome are given at the end of the final branch. If the applicant is selected, the payoff is the wage net of the cost of making the application ($w - a$). If the jobseeker applies and is not selected, the payoff is outside option less the cost of applying ($\overline{w}^i - a$).

The payoffs in Figure 5.2 differ in expectation depending on if the jobseeker is a connected insider or an unconnected outsider. This results as the probability of success is modified by connectedness and the weight the unfair firm places on connections. Table 5.2 summarises the differences in probabilities for the connected and unconnected. From the table, υ functions as a discounting factor by reducing the probability of success for outsiders who encounter unfair firms. Insiders have a higher (lower) probability of success (failure) relative to outsiders when the firm is unfair. The probabilities of success and failure are the same for outsiders and insiders when the firm is fair.

Table 5.2: Matrix of probabilities for insiders vs outsiders

Type of Firm	Success/Failure	Insider	Outsider
Fair firm	Successful	γ^i	γ^i
	Unsuccessful	$1-\gamma^i$	$1-\gamma^i$
Unfair firm	Successful	$\upsilon\gamma^i + (1-\upsilon)$	$\upsilon\gamma^i$
	Unsuccessful	$1-\upsilon\gamma^i-(1-\upsilon)$	$1-\upsilon\gamma^i$

In the model set-up above, the assumption made by the jobseeker is that a fair recruiter's dominant strategy is to hire based on ability only. For an unfair recruiter, assuming the gains to nepotism are positive (λ from the employer model), the dominant strategy is to recruit based on some combination of ability and connectedness. As noted above, connected jobseeker will be aware of the fairness of firms in their network. The analysis that follows therefore assumes the jobseeker is unaware of the fairness of the firm at the time of applying for the advertised position and is therefore unconnected to the firm. The expected payoffs for applying and not applying are given below.

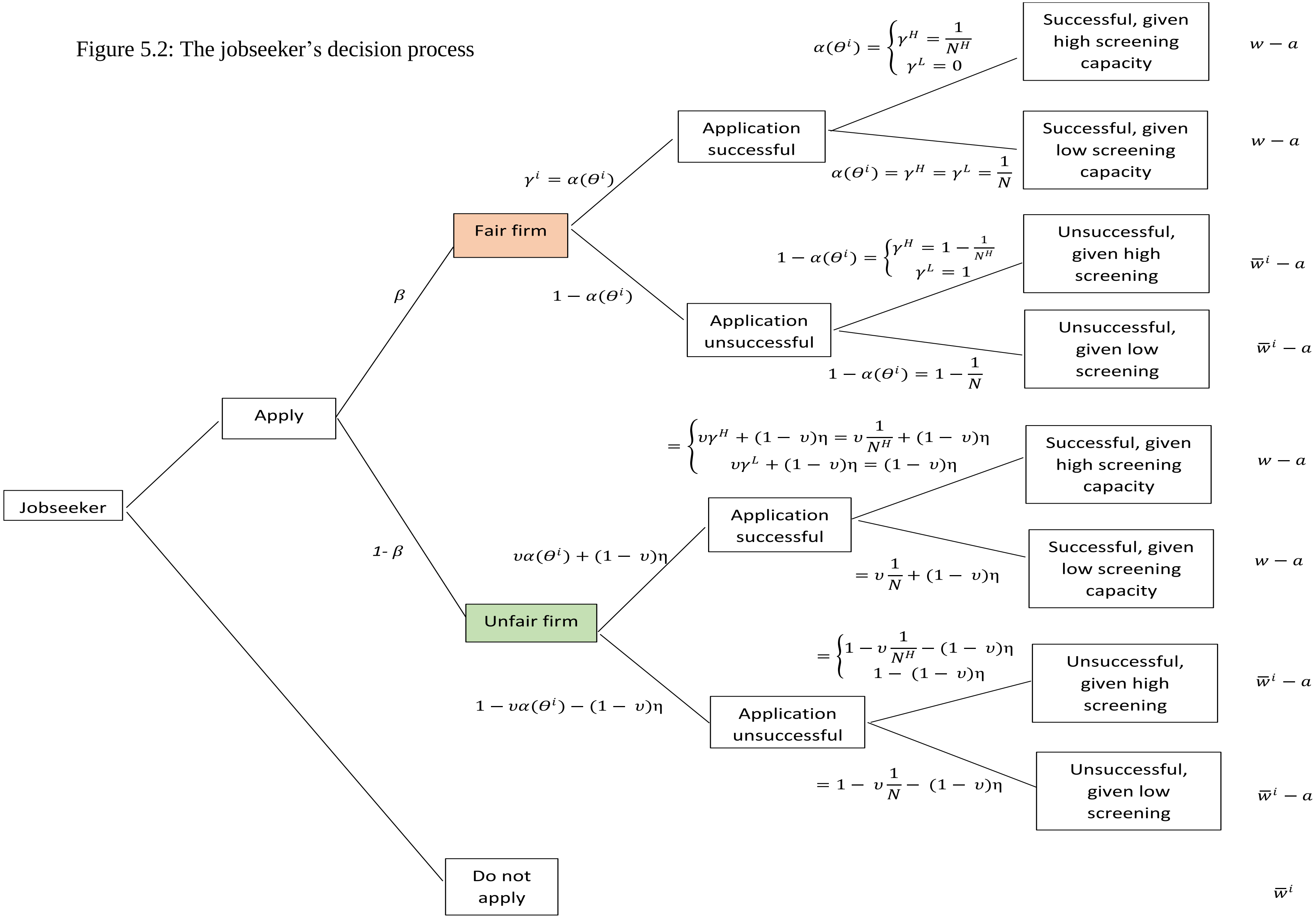
$$\begin{aligned} apply = {} & \beta\gamma^i(w-a) + \beta(1-\gamma^i)(\bar{w}^i - a) + (1-\beta)\upsilon\gamma^i(w-a) \\ & + (1-\beta)(1-\upsilon\gamma^i)(\bar{w}^i - a) \end{aligned}$$

$$do\ not\ apply = \bar{w}^i$$

The jobseeker therefore applies if the expected payoffs of applying exceeds that of not applying. This reduces to:

$$\beta > \frac{a - \upsilon\gamma^i(w-\bar{w}^i)}{\gamma^i(w-\bar{w}^i) - \upsilon\gamma^i(w-\bar{w}^i)} = \beta^*$$

Figure 5.2: The jobseeker's decision process



The jobseeker will apply to the observed vacancy if the proportion of fair recruiters β, is greater than some threshold β^* which depends on the cost of applying (a), the relative difference between the wage rate and reservation wage $(w - \overline{w}^i)$, their perceived probability of success conditional on ability (γ^i), and relative fairness of the firm (υ), that is, how much weight is placed on ability relative to connectedness. From the inequality above, the following can be observed in Table 5.3. Derivations are provided in Appendix 11.

Table 5.3: Comparative statics of the jobseekers model when fairness of the firm is unknown

	Variable Change	Derivative	Predicted Effect for Outsiders
1	If the cost of applying (a) increases	$\frac{\partial\beta^*}{\partial a} > 0$	As the cost of applying increases, unconnected jobseekers require a larger share of fair firms in the market to apply for vacancies. The threshold β^* increases when a increases.
2	If the wage (w) for the advertised job is lower	$\frac{\partial\beta^*}{\partial w} < 0$	As the wage rate decreases, unconnected jobseekers will desire a greater share of fair firms in the labour market to incentivise job applications. The threshold β^* increases when w decreases.
3	If the reservation wage $(\overline{w}^i)$ increases	$\frac{\partial\beta^*}{\partial\overline{w}^i} > 0$	As the reservation wage increases, a larger share of fair firms will be needed to incentivise applications from outsiders. The threshold β^* increases when $\overline{w}$ increases.
4	If the probability of success based on ability (γ^i) increases	$\frac{\partial\beta^*}{\partial\gamma^i} < 0$	As the share of fair firms decreases only higher ability applicants will apply. The threshold β^* decreases when γ^i increases.

The results show that in a labour market where there is some proportion of unfair firms that recruit based on a combination of ability and connectedness, the jobseeker's application decision is not based on a simple comparison of costs versus benefit, but is weighted by the probability of successfully gaining employment. For those that are not connected, the probability of success based on ability is discounted when the jobseeker encounters an unfair firm.

Further, the unconnected jobseeker responds to changes in the estimated proportion of unfair firms in the labour market. If the share of unfair firms increases (or the share of fair firms decreases) the unconnected jobseeker will be incentivised to make an application if the wage rate is higher or the cost of applying is lower. Unconnected jobseekers with higher reservation wages will need to be motivated to apply by a larger share of fair firms and only the very able unconnected jobseekers will apply if the share of fair firms is low.

It follows that if the wage rate declines or the cost of applying increases, without a change in the share of fair firms in the market, some unconnected jobseekers will not apply to vacancies. Jobseekers with lucrative outside options will not participate in the labour market, and only those at the top of the ability distribution will actively participate when there are very few fair firms. These results indicate that in a labour market where some firms recruit based on networks, an outcome results where there is reduced search and discouraged workers who do not participate in the labour market. The results hold for those that are not connected in the labour market.

If we take the special (but unlikely) case where there is no cost to making an application and the reservation wage is zero. The condition for applying, becomes:

$$\beta > \frac{-\upsilon\gamma^i w}{\gamma^i w - \upsilon\gamma^i w}$$

$$\beta > \frac{-\upsilon}{1 - \upsilon}$$

The right-hand side is negative. Since $0 \leq \beta \leq 1$, it follows that when application costs are zero and the reservation wage is sufficiently close to zero, any value of β will still lead to applications.

Another special consideration is where firm screening is high enough for there to be a separating equilibrium, and there is at least one high ability worker. In this case, $\gamma^H = {}^{1}/_{N_H}$ and $\gamma^L = 0$. For low ability workers, the condition above reduces to $\beta > 0$. It follows that low ability workers will still apply when firm screening is high, in instances when costs are close to zero. This likely explains why some candidates adopt for the "*apply to everything strategy*" if their costs are close to zero and they are desperate for employment. Others may reduce applications if their costs are high and/or have high reservation wages (for instance they benefit from financial support from family members or friends). The link between the predications and observed behaviour are discussed in section 5.5 based on empirical data from Sierra Leone.

5.4.3. The jobseeker - updating beliefs

Sections 5.4.1 and 5.4.2 presented a static story of firms and jobseekers respectively. For the firm, it was shown that it can be rational to recruit from within their network; and for unconnected jobseekers it was shown that depending on the share of unfair firms in the market, some jobseekers may limit search or exit the market altogether. In this sub-section, I explore a dynamic setting by presenting an analytical description of how jobseekers update beliefs about the fairness of the labour market using a Bayesian updating process.

The analysis that follows is specific to cases where a separating equilibrium emerges and the employer is able to partition high and low ability workers using some screening technique. Where a pooling equilibrium exists, high and low ability workers have the same probability of being selected as the firm randomly samples from all workers. There is no basis for updating in this case as the employee is unable to distinguish nepotism from poor screening.

Each unconnected jobseeker engages in the process described in section 5.4.2 each time a vacancy is observed, and an application is made. This continues until a position is secured. The jobseeker updates his/her beliefs each period based on the experiences of himself/herself and others observed in the labour market in the previous period, based on a given updating rule. All variables relevant to the process of updating beliefs are defined in Box 5.3.

Box 5.3: Key variables – updating beliefs

θ_j^s is the ability of the successful candidate for the j^{th} vacancy

$$\theta_j^s = \begin{cases} \theta^H & \text{for high ability workers} \\ \theta^L & \text{for low ability workers} \end{cases}$$

$\theta_j^{\bar{s}max}$ is the ability of the most able unsuccessful candidate for the j^{th} vacancy

g_t is the propensity of firms to recruit based on connectedness where,

$$g_t = \begin{cases} \dfrac{number\ of\ vacancies\ \ filled\ where\ \theta_j^{\bar{s}max} = \theta^H > \ \theta_j^s = \theta^L}{number\ of\ vacancies} & , \theta_j^{\bar{s}max} \ > \ \theta_j^s \\ 0 \qquad , & \theta_j^{\bar{s}max} \ = \theta^L \ < \ \theta_j^s = \theta^H \end{cases}$$

v_t is the weight unfair firms place on ability at time $t.$ $v_t = \emptyset(g_t)$ and $\frac{\partial v_t}{\partial g_t} < 0$

β_t is the estimated share of fair firms at time $t.$ $\beta_{t+1} = z(v_t)$ and $\frac{\partial \beta_{t+1}}{\partial v_t} > 0$, $\frac{\partial \beta_{t+1}}{\partial g_t} < 0$

The updating rule derives from the observed propensity of firms to recruit based on connectedness (g_t). The jobseeker observes the share of vacancies filled by low ability workers when there is an unsuccessful high ability candidate. Observations on ability level are possible, as unlike the firm, the jobseeker can discern where they and other jobseekers lie in the ability's distribution. In observing candidates' abilities, there are two cases: (i) $\theta_j^s - \theta_j^{\bar{s}max} \geq 0$ and (ii) $\theta_j^s - \theta_j^{\bar{s}max} < 0$. Only the latter adds new information and factors into the updating rule.

In the first case ($\theta_j^s - \theta_j^{\bar{s}max} \geq 0$), the candidate selected has ability level at least as large as the next best candidate. The jobseeker making the observation gleans no new information on the fairness of the firm in this case, as the recruitment can be reasoned to be based on ability. For a high ability worker, he/she accepts the selection of another high ability worker. Similarly, a low ability worker does not challenge the hiring of a high or low ability worker.

In the second case where $\theta_j^s - \theta_j^{\bar{s}max} < 0$, the selected candidate's ability is less than the highest ability applicant who was not selected. One can imagine a high ability worker observing the recruitment of a low ability worker for an advertised position. The jobseeker cannot, to his/herself, understand or justify why a lower ability candidate was selected over the higher ability candidate, and reasons that the firm is unfair in their recruitment. This increases the function g_t, the propensity for the firm to recruit based on connectedness. In other words, connections have supplemented the lower ability level of the selected candidate implying that the firm attaches some weight to connectedness.

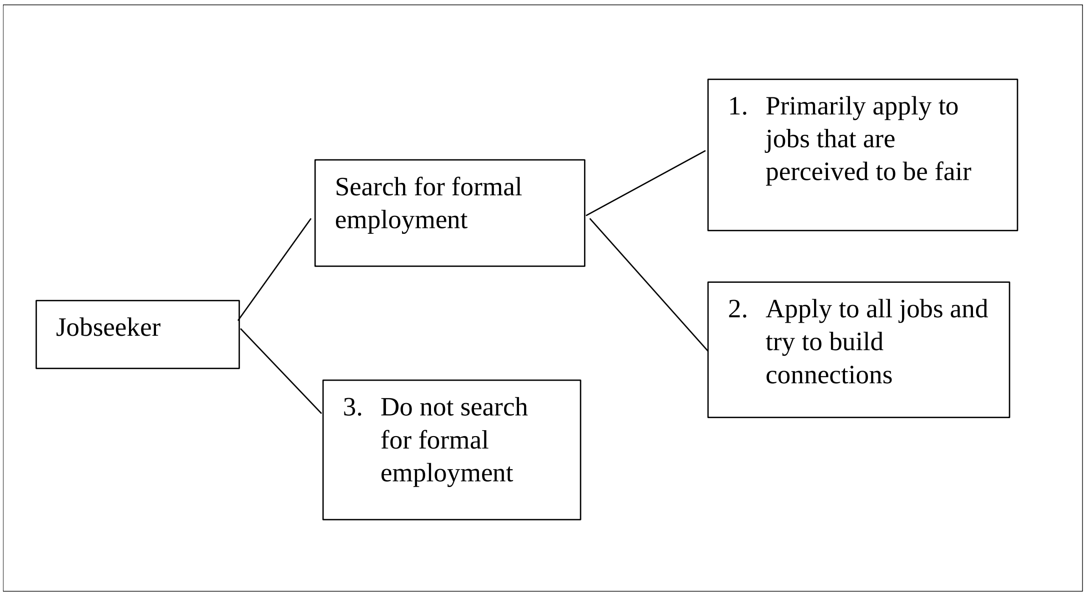
It follows that if the jobseeker believes that firms have a higher propensity to recruit based on connectedness, the estimated weight placed on ability by unfair firms in the jobseeker decision-making model, $v_t = \emptyset(g_t)$, will be lower as $\frac{\partial v_t}{\partial g_t} < 0$. The final stage of updating is dynamic in nature and links current period experiences to future beliefs. As the jobseeker adjusts his/her estimation of the weight placed on ability by unfair firms in the market, this affects future beliefs of the share of fair firms in the market. Namely, if the propensity to recruit on connectedness is observed to be higher, this implies a lower weighting on ability, and in the subsequent period, a downward posterior estimate of the share of fair firms in the labour market, that is, $\beta_{t+1} = z(v_t)$ and $\frac{\partial \beta_{t+1}}{\partial v_t} > 0$.

From the decision tree above (Figure 5.2), it follows that a primary incentive is thus to become more connected in a bid to increase the probability of success, if the jobseeker believes more weight is assigned to connectedness when recruiting. This is one of several responses of the jobseeker.

5.4.4. The jobseeker response – an individual action

Having updated the estimated probability of fair firms in the market, the jobseeker responds in one of three ways (Figure 5.3): (i) by limiting applications to jobs that are perceived to be fair; (ii) by attempting to build networks and to become connected, or (iii) by exiting the formal labour market altogether. These responses are not mutually exclusive. Jobseekers may do a combination of the first two with varying intensities, or swap between options one/two and option three at different points in the search process.

Figure 5.3: The jobseeker response



The first response is tantamount to crossing observed unfair organisations off the list of potential employers to apply to. Relating this to subsection 5.4.2 above; for a given firm, if the jobseeker applies, is not hired and observes the ability level of the successful candidate θ_j^s to be less than his/her ability θ^i, the jobseeker updates his/her beliefs on the weight the firm places on ability but may also decide not to apply to said firm in the future. The jobseeker may also draw conclusions on the industry or sector the firm operates in if similar observations are made of other firms in the same sector or industry. In so doing, the jobseeker makes future applications to a subset of all employers, and within this subset, the proportion of fair firms β' is perceived to be larger than the overall proportion β. Alternatively, the applicant calculates a new β_k for each sector k, and applies primarily to the sectors with higher levels of β.

The second response attempts to influence the probability of securing employment through connections (η) by seeking out networks. This can manifest in several ways. For example: volunteering as an intern for free at an organisation, asking a friend or family member to submit one's CV even when no job has been advertised, or joining various social and political clubs.

The third and final response is symptomatic of a discouraged worker effect where the jobseeker exits the formal labour market. In exiting the formal labour market, the jobseeker either enrols in further study (to improve his/her chances of future employment by increasing γ^i), engages in the informal labour market as self-employed, or remains economically inactive.

All three responses outlined above change the composition of the pool of potential recruits and networks of firms. Recall from section 5.4.1, there are p and q high ability workers in the potential pool of candidates and firm's network respectively. If jobseekers attempt to improve connectedness to enhance their chances of success, q will change in the employer model. In the case where q increases (relative to p), this may lead to the firm increasingly recruiting from within their network and advertising less. This reinforces the strength of networks and is symptomatic of a divergent process that is not self-correcting. In other words, as more jobseekers attempt to become, and subsequently become connected, firms are less incentivised to advertise if the share of high ability workers in their network increases. This in turn increases the value of being connected, so more jobseekers aim to become connected, etc, etc. A vicious cycle emerges where the importance of networks becomes increasingly high and obtaining employment without being part of a network becomes increasing rare. This imposes a negative externality on some agents in the labour market.

If some jobseekers exit the labour market or modify applications to a specific sector, p will change depending on the ability levels of those who modify their behaviour. If p decreases, firms that would like to recruit through advertising will have a smaller pool of high ability workers to choose from. Such firms may then respond by seeking out high ability workers in their network. Again, the process is not self-correcting. It is a version of Akerlof's *"market for lemons"* and of Gresham's law where lower ability connected workers push higher ability unconnected workers out of the market. These mechanisms essentially destroy markets.

5.4.5. The labour market outcome – a collective result

The models and subsequent responses discussed above all lead to jobseekers and firms using information and networks to their best advantage. Though such behaviour may be rational and optimum at the individual level, collectively the effect on the labour market is likely to be less than optimum.

As discussed above, the three jobseeker responses lead to changes in the ability distribution of the candidate pool and firm's network. Namely:

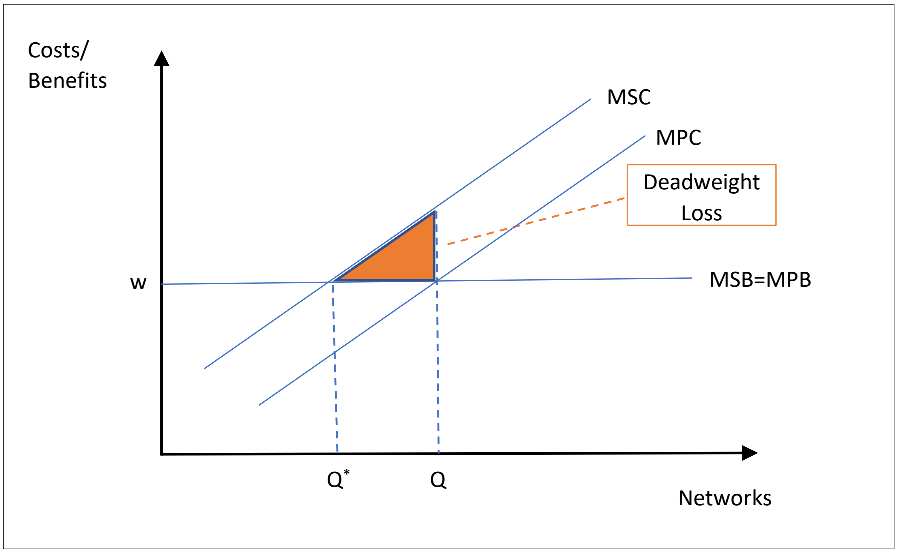
i. As some jobseekers apply to only fair firms or shift focus to a particular sector, the candidate pool for those firms attempting to recruit from advertising but operating in a sector deemed to be unfair will be lower. This is a cost to some fair firms.

ii. For jobseekers who aim to become more connected, in attempting to use connections, they do not consider the social costs and benefits of their actions, but merely personal costs and benefits. This is different to a general equilibrium analysis of the labour market where there is a price-effect – for instance where an increase in the supply of lawyers drives down the wages of all lawyers. In the present case, the actions of the connected and those trying to become connected does not affect the wages of the unconnected for a given job (beyond changes expected in a normal labour market). Instead, the chances of getting a job (and consequently earning a wage altogether) are affected. Again, this is beyond the normal probabilistic changes when there are large number of graduates to few jobs. The added dimension here is that some applicants are shifted to the "back of the queue" or assigned a lower probability of being selected. This is reinforced if the relative share of networked high ability workers (q) increases, which further encourages firms to recruit from within their network. This is a cost to unconnected jobseekers who then have a lower probability of exiting a state of unemployment.

iii. Those unconnected jobseekers may be pushed out of the labour market. This changes the relative share of high ability workers in the potential pool of recruits. If a large share of high ability workers is discouraged and exit the labour market, some firms lose out as the candidate pool is less able on average. Those that exit are also unable to reap the rewards of investing in education and training. There is a cost to both firms and jobseekers.

Use of networks is therefore a self-reinforcing mechanism that imposes costs on some agents in the labour market, ultimately destroying the labour market if left unchecked. By utilising networks, the marginal social costs (MSC) are higher than marginal private costs (MPC) of those using networks. The wedge between MSC and MPC arises as: (i) information is distorted (via non-credible advertising), (ii) there is reduced search and lower wages from un/underemployment of "outsiders", (iii) discouraged workers exit the labour market limiting the pool of candidates available to fair firms, (iv) there is sub-optimal matching as connected low ability jobseekers may be recruited, and (v) there are elements of jobseekers matching based on the probability of success (and fairness) rather than intrinsic preferences. In essence, there is a negative externality as networks are used beyond a point that is socially optimum, leading to a deadweight or social welfare loss.

Figure 5.4: Negative externality from the overuse of networks in the labour market



In Figure 5.4, I assume that the marginal private benefits (MPB) of using networks is the wage rate from employment and this fixed at some value w. This equals the marginal social benefit (MSB) as I assume under perfect competition the wage rate equals the employee's value addition to the firm and by extension society. A horizontal $MPB = MSB$ curve also follows from the assumption in the jobseeker model in section 5.4.2 that the use of networks increases the chances of obtaining a job, but does not affect the level of earnings. The marginal private costs (MPC) of expanding and utilising networks increase with the size of the network so the curve is upward sloping. One can imagine time and financial costs associated with networking. This lies below the marginal social costs (MSC) curve as marginal social costs considers MPC as well as third-party costs imposed on some firms and jobseekers when networks are used. These third-party costs or negative externalities were discussed in i.–iii. above.

The outcome which results from equating $MPB = MSB$ and MPC is an overuse of networks in the labour market with an equilibrium level Q. Should MSC be considered instead, the use of networks would be lower at Q^*, the optimal level. There is therefore a wedge in the market which leads to a deadweight loss. This aligns with the general sentiment from respondents that everyone would be better off if there was less nepotism and network-based recruitment in the labour market.

Figure 5.4 is drawn in such a way that the socially efficient level of network usage is not zero. This stems from the fact that some use of networks can be good in the labour market based on both theoretical arguments and empirical studies as discussed in section 5.2 of this chapter. Information asymmetries about worker type related to a low-quality education system may imply that some use of networks in recruitment can be positive. Another theoretical perspective is that large inefficient bureaucratic systems may require "greasing the wheels" to achieve a more efficient outcome (Bouzid, 2016; Williams and Kedir, 2016). I therefore do not suggest that the use of networks is altogether harmful, but the excessive use of networks might be. Importantly, the effect on the labour market depends on if networks are used to share information, rather than to circumvent ability-based recruitment and recruit based on patronage.

5.4.6. A summary of the decision-making models and links to the research questions

Sections 5.4.1 and 5.4.2 formalised the firm's and jobseeker's decisions based on their respective incentives, and section 5.4.3 added a dynamic element to the model. The response of the firm and jobseeker to utilise networks is a self-interested strategy as this maximises the firm/recruiter's desire to either find a good candidate or engage in nepotism. For the jobseeker, this may be the best strategy to secure a job. However, as discussed, individual actions can negatively influence collective results.

I will conclude this section by discussing the first two research questions posed at the beginning of this this chapter, that is:

i. How does the existence of networks and homophily more broadly affect decision-making and behaviour in the labour market?
ii. Is the observed outcome an optimal outcome for the labour market?

In response to the first research question, decision-making and behaviours are distorted when networks are used to recruit workers. From the decision-making models presented, there are several behavioural predications. On the firm side, some firms will not advertise if they have ready access to a network of jobseekers and can identify high ability workers in their network, have high screening costs, and/or benefit from engaging in patronage.

On the jobseeker side, in addition to the usual factors considered in the search process (for example costs, being qualified for the job), the applicant decides to apply for a vacancy probabilistically, basing this on the subjective probability of fair firms in the market. With each additional application submitted, the applicant updates his/her estimate of the weight firms place on ability and the fairness of firms by observing the difference in ability of the successful candidate and others in the labour market. As this estimate falls, the result is that fewer applications are made to advertised vacancies by perceived unfair firms and more to fairer firms, the desire to access and use networks increases, and some jobseekers exit the formal labour market.

The effects do not end here, as labour market interactions are ongoing over many periods. Given that some unconnected jobseekers limit their applications because of perceived unfairness, fair firms incur a cost because of the actions of nepotistic firms that change the behaviour of some jobseekers. For these firms, there is now a smaller applicant pool when a vacancy is posted as a percentage of jobseekers lose trust in advertisements and reduce the number of applications made. Moreover, given that some proportion of jobseekers are now actively trying to become connected to secure employment; the number of connected workers in the firms network increases and if the share of high ability in the network increases, there is an even smaller incentive to advertise. Jobseekers thus adjust their estimate of fair firms downward again.

Following the logic described above, the prediction is a fairly dystopian labour market where the outcome is below optimum levels should the use of networks for recruitment be limited. This answers the second research question above.

Patronage in the labour market therefore leads to three types of economic/social ills. Firstly, there is likely an output effect as lower ability workers are hired. Secondly, there are distributional consequences of being an outsider versus an insider in the labour market, which are exacerbated if being an outsider is systematically correlated with other socio-economic/demographic characteristics of marginal groups. And finally, human capital choices are distorted as search behaviour is modified.

The models above have looked at the employer and jobseeker separately, and the interactions between the two have been discussed based on the dynamics at play when jobseekers update their beliefs. In the next section I provide empirical evidence from the labour market in Sierra Leone as an illustrative case of the theoretical arguments made in this section.

5.5. EVIDENCE AND DISCUSSIONS – AN ILLUSTRATIVE EXAMPLE FROM THE DATA

This section analyses a mix of data collected from focus group discussions, interviews and CVs of over 200 recent graduates in Sierra Leone. All names have been changed to protect anonymity. The data analysis provides an illustrative example of the analytical models present in section 5.4.

5.5.1. Search and matching of skilled workers in Sierra Leone

> "Last year they advertised vacancies for Economists at [organisation name removed]. I was called to do an exam. They said that those who did the best in the exam would be interviewed first. My interview was on the first day. Then my friend who works there told me I was successful. She sent me a WhatsApp with my name on the list. I was so happy. I went and bought new clothes for the job. But then I did not hear from them officially. Then I saw on Facebook other people were posting photos who had started the job. I say '*eh-bo'*. When I called my friend, she said a new list came from above. What can I do? I have to look for another job".
>
> Mohammed, Economics graduate 2012 – unemployed in 2017

> "It's true. Even if you are applying you need someone to push your application. I had a close relative at [organisation name removed]. She told me to apply for a holiday job. I was not applying before. I started working and became interested in being full-time. I then spoke to the HR to learn about formal opportunities. I started in finance at [organisation name removed]. Then I moved to IT. My business and IT degree was useful. Now I am in marketing. Someone pushed my application who was in the job. You also need people to tell you when there are vacancies. In some cases you might not have the requirements but you might still get chosen. It happens differently depending on the power of the referee. The other workers just get on with it if they know someone has come in like that.
>
> Alpha, Business and IT graduate 2012 – employed in 2017

> "I liked auditing and forensics. I wanted to work for the government. I applied but it's political. I was accepted at [organisation name removed] and [organisation name removed]. I took the job at the second one. It might be harder now getting a job for me. I am a Conteh so they will know I am not Mende."
>
> Aminata, Accounting graduate 2016 – employed in 2017

Mohammed's, Alpha's and Aminata's stories are not unique. These three examples were extracted from the data to illustrate that the use of networks in the labour market spans gender, area of study, types of organisation applied to and employment status.

There are many like Mohammed who shared accounts of being side-lined in the recruitment process for another candidate who may not necessarily be *better*, but is better connected. Connections, connectivity, nepotism, favouritism, discrimination were all words used to describe what graduates perceive as one of the biggest challenges in the labour market. According to respondents, connections affect both the creation of jobs, and the allocation of jobs.

Fewer jobs are created as workers inside the system negotiate contracts to work beyond the legal retirement age, and resurface as experts on fixed-term contracts. This limits progression up the organogram and prevents new vacancies being created at entry-level positions. With respect to allocation, a dominant theme arising from the focus group discussions (as shown in Mohammed's and Alpha's stories) is that meritocracy can at times be second to patronage in the selection process. This perception is common among the unemployed who are still searching, but also those who are permanently employed. Aminata's account gives evidence of the pervasiveness of political and ethnic homophily. The data analysis that follows is positioned within the search and matching aspect of the labour market; thus focusing on the allocation rather than the creation of jobs. Using interview and focus group discussion data, I describe and discuss how jobs are advertised, how candidates are screened and subsequently recruited, relating this back to the theoretical discussions in sections 5.3 and 5.4.

The majority of organisations interviewed advertise using print and online media, and at times, radio advertisements. Some companies also outsource to recruitment firms such as Careers.sl, AfRecruit, Revolutum and Job Search. The UNDP-funded Career Advisory and Placement Services also works with these recruitment companies and various employers to advertise vacancies; and in the past, have hosted careers fairs to bring employers and jobseekers together. Standard practice across sectors shows that after advertising a vacancy, short-listed candidates are invited to an interview, where there is either an oral interview or a combination of written test and oral interview.

At the surface level, it may appear that information is available, and recruitment is fair – though there is the usual cost of procuring the information, for example, the cost of buying a newspaper or accessing the internet. However, jobseekers complained that some positions were not advertised, and even positions that were advertised “were not for them”. There is a culture of mistrust among jobseekers based on responses from the 15 focus group discussions (across 70 respondents from various disciplines and years of experience in the job market). The majority of respondents believe that job advertisements are merely a formality and candidates have already been cherry-picked by the employer either from their network, or as a favour to someone else (political or otherwise).

As such, the majority of respondents who were just about to enter the job market anticipated high spells of unemployment and estimated waiting at least a year before finding full-time employment. Those who had been searching for at least a year already (some up to ten years) had all but given up hope of finding a permanent job and relied on: (i) working informally as a barber, hairdresser, electrician/plumber, making and selling cakes, tailoring, (ii) engaging in short-term casual work to gain experience (usually related to donor funding), for instance working as an enumerator on a project, (iii) teaching – science and engineering graduates, and some social science graduates, often teach at private schools on a part-time basis,[58] (iv) volunteering for free in the formal sector with the hope of being absorbed and/or (v) relying on friends and family members for financial support. For those employed, some had waited up to seven years before securing a permanent job, while others were employed immediately after graduating.

Lack of confidence in the recruitment process is not without reason, as many HR managers reported facing external pressures on hiring decisions which led to "having their hands tied" to the situation, and simply adhering to instructions from above. Respondents commonly referred to "interference", "connectedness" and more colloquially "*sababu* or potato leave/cassava leave *fambul*" to indicate the series of networks that they perceive have become more important to merit in recruitment.

It is possible that the unemployed may explain their employment state by lack of connections, rather than their failure to secure work because of their ability or search behaviour. I therefore analyse data collected on a subset of workers who were full-time employed at the time of the second round of data collection in August 2018. The data in its purest form is qualitative and collected through snowball sampling (see Appendix 12). As such, no attempts are made to conduct statistical analysis. Nonetheless, some interesting patterns emerge.

Thirteen out of 30 respondents knew someone working at the organisation at the time of making an application. Three respondents reported that they had never made a job application, but were gainfully employed. All three were connected to someone at the organisation before being hired. Two of these three were interns and then interviewed when a vacancy arose. The third was informed by a friend employed at the organisation to attend an interview. Those who were not connected at the time of applying made more applications, on average, since graduating and faced a longer average waiting period between applying and securing their current employment (Table 5.4).

The boxplot in Figure 5.5 shows that there was more variability in search experience among the unconnected versus the connected in terms of applications made and waiting time between applying and being made an offer. This gives an indication of the precarious nature of job-search for those

[58] Teaching as a short-term option and its implications are explored in Harris (2020).

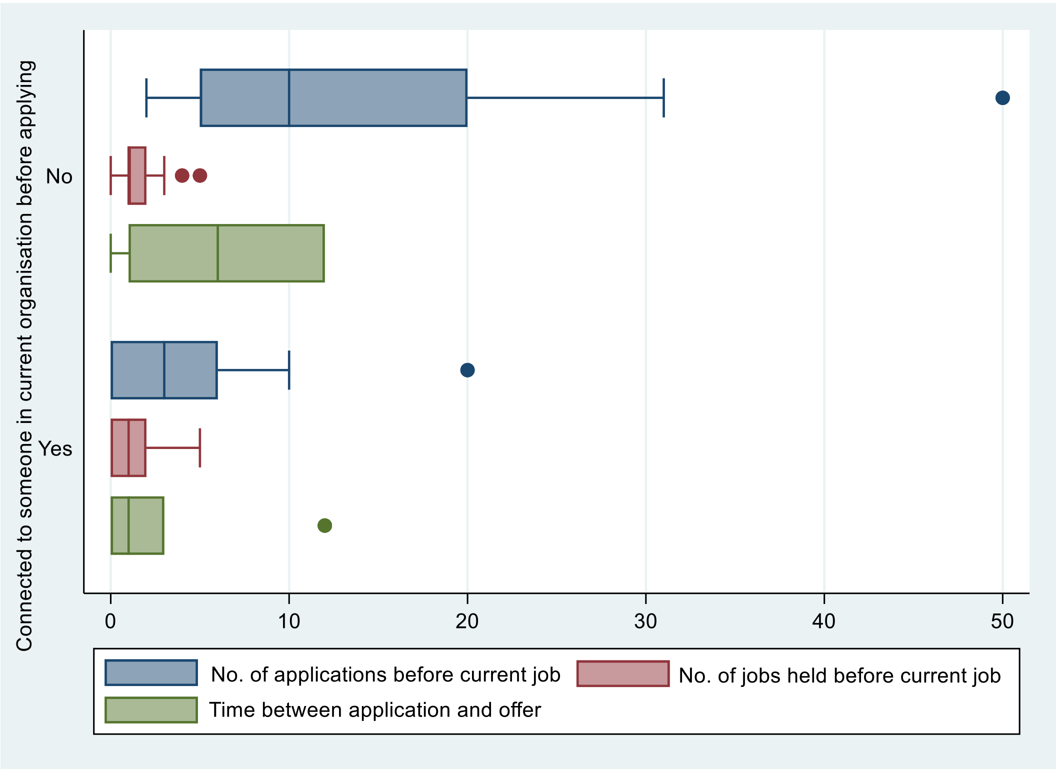
unconnected in the labour market. For instance, one unconnected jobseeker made up to 50 applications, while the maximum for a connected jobseeker was 20 applications.

Table 5.4: Search experience of employed respondents

	Connected ($n = 13$)	Unconnected ($n = 17$)
Average number of applications	4.27	14.71
	(6.03)	(13.50)
Average number of jobs held	1.46	1.71
	(1.56)	(1.36)
Average time between application and offer	2.77	6.13
	(4.27)	(1.36)

Standard deviation in parenthesis
Source: Author collected focus group data

Figure 5.5: Search experience of connected versus unconnected employed graduates ($n = 30$)



Source: Author collected focus group data

In keeping with the sector-level analysis of this thesis, I separate the sector of current employment of the 30 employed respondents into the public, private and development sectors (see Appendix 12). Some interesting patterns emerge from the data at the sector level. Five out of eleven respondents employed in both the public and private sectors were connected at the time of applying, a share of 45.5 percent each. This is marginally larger than the 37.5 percent in the development sector (three out of eight). Furthermore, in the development sector, connections appear to play a role in recruitment at the local NGO level, but not at INGOs or donor organisations. As noted above, the analysis is not statistically robust, but corroborates other qualitative data.

5.5.2. Political connections as a key friction

> "There was some political influence in 2011, but management understood what I was trying to do. But now it's bad. Back then, the GM used to bring a list from State House, from the First Lady's office. Now they just say take this person, give this grade. From the Ministry, State House. Not even an interview. The GM says they've done us a favour so take this guy and see if he performs. We had an IT guy we had to let go. Sometimes those brought in like this, they do perform. But we as HR prefer them to come through a recruitment process. I don't think the other staff members know who comes in like this. Just HR because we need to fix the paperwork."
>
> Human Resources Manager, Private Sector Company

> "When I applied for this job in 2007, it was fair. It's not like that now. It used to be based on qualifications, but not now. Now I am not sure I would get this job with my experience since I am not politically connected."
>
> Manager, Government Organisation.

"Political interference" in the labour market was cited as the most dominant friction. As with Aminata's and Mohammed's experiences reported at the beginning of section 5.5.1, there is widespread belief among jobseekers that they must be politically connected in order to secure employment in the public sector. In addition to this, employers from across sectors (see quotes above) report political pressures to hire certain workers and often refer to "lists that come from State House" that suggests which candidates should be invited for an interview, or even hired.

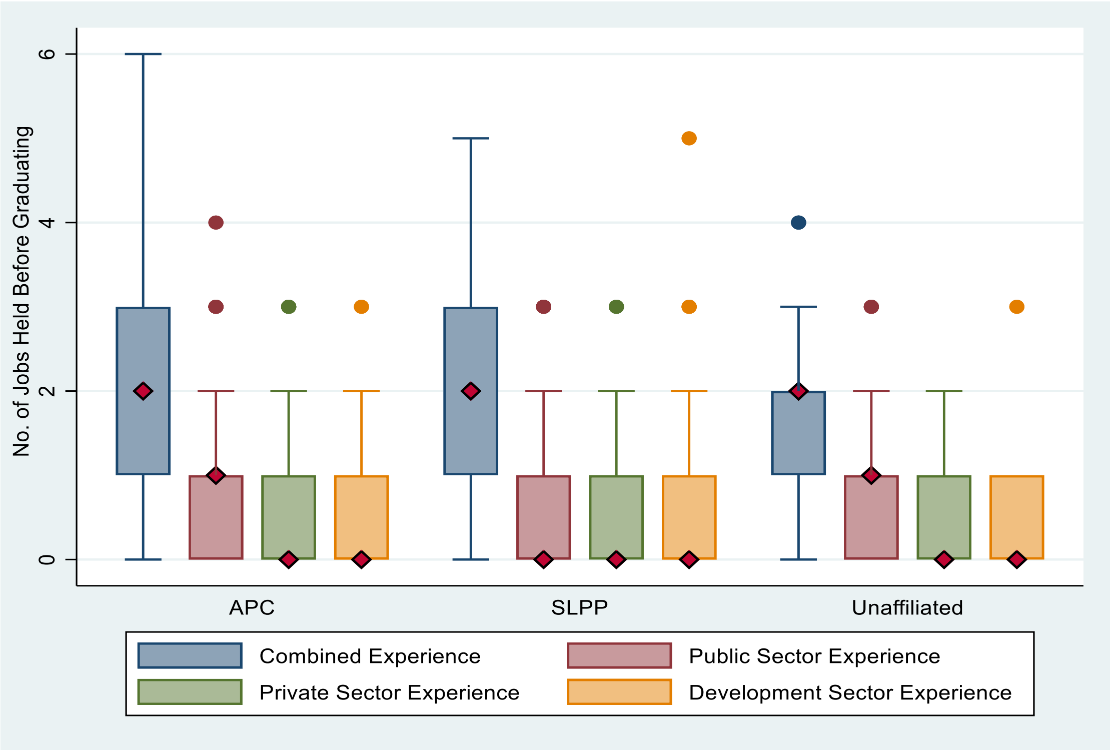
I use CV data to further explore the claim that political affiliation (and by extension ethnicity) influences labour market outcomes by teasing out basic relationships between indicators of ethnic/political/regional affiliation and the labour market experience of university students. As noted in Kandeh (1992), ethnicity has been politicised in Sierra Leone and the two are closely related. Research participants submitted their CVs to be considered for an internship which was organised by this research as explained in section 1.5.2.2. From the CVs submitted, data on the work experience of jobseekers (mainly internships and part-time work during the degree programme), ethnicity and area of origin were extracted. The latter two variables were triangulated using the data collected from the survey.

Casey (2015, p.2415-2416) estimated loyalty for a political party by taking the share of voters of a given ethnic group who reported voting for a particular party. This was then used to classify ethnic groups by party affiliation to one of the two major political parties - the All People's Congress (APC) or Sierra Leone People's Party (SLPP), or unaffiliated. I use this classification to sort jobseekers by expected political affiliation based on their reported ethnicity in the survey conducted for this study.

Data for 150 university leavers show that respondents belonging to the main ethnic group associated with the opposition party at the time, the SLPP, had a lower median work experience in the public sector (Figure 5.6). In other words, 25 percent of respondents belonging to ethnic groups affiliated with the APC party or unaffiliated to any party had no experience in the public sector, while 50 percent of those affiliated with the opposition SLPP had no public sector work experience. The result is especially noteworthy as the midpoint of the distribution does not vary across groups for the development and private sector.

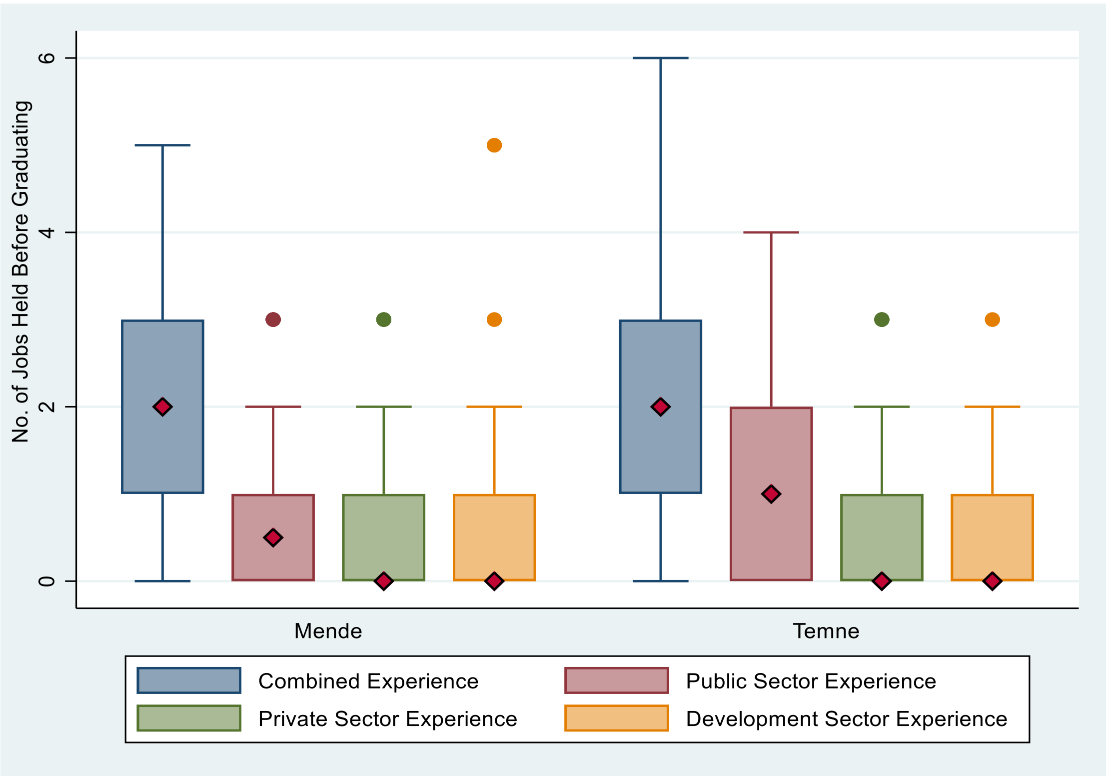
Ignoring Casey's (2015) classifications and focussing on the two main ethnic groups only, the patterns are similar (Figure 5.7). The only difference among ethnic groups relates to the public sector. At least 50 percent of Temnes had at least one job in the public sector, while 25 percent of Mende reported public sector experience. This is expected as then ruling APC (from 2007 to 2018) is seen as the Temne party and the SLPP, the Mende party.

Figure 5.6: University students' experience in the labour market by political affiliation ($n = 150$)



Source: Author collected data from graduate CVs

Figure 5.7: University students' experience in the labour market by ethnicity ($n = 86$)



Source: Author collected data from graduate CVs

Finally, I exploit data on regional origins of the jobseeker's family as another proxy for political connections. Traditionally, the northern areas of the country has been dominated by the APC party (Kandeh, 1992; Casey, 2015). As shown Table 5.5, jobseekers of northern origin had more experience overall, and in the public and private sectors, but not the development sector. The difference between means is statistically significant at the 10 percent level for overall experience and experience in the public sector. The difference observed is smallest in the development sector.

Table 5.5: Average number of jobs held by area of family origin

	Northern Origin	Other Origin	p-value
	$(n = 54)$	$(n = 100)$	$(H_0: \mu_{north} = \mu_{other})$
Overall experience	2.22	1.76	0.0565
	(0.20)	(0.13)	
Public sector experience	1.00	0.70	0.0681
	(0.14)	(0.087)	
Private sector experience	0.69	0.50	0.2012
	(0.12)	(0.078)	
Development sector experience	0.54	0.56	0.8626
	(0.098)	(0.089)	

Source: Author collected data from graduate CVs

The number of observations used for this analysis is small; and given that the data is on work experience of university students about to enter the labour market, the number of jobs held is likely to be lower on average than for those who have been in the labour market for an extended period. The data are still useful to explore a trend that was highlighted in the qualitative data, that is, politically connected individuals are more likely to obtain employment, especially in the public sector.

5.5.3. Information versus inefficiency – behavioural responses to patronage in the labour market

> "If you have no connections, it's a miracle to get a job. We say: 'degree nah get bad luck'. It means there's no harm to having a degree. There will be an opportunity in the future. But you need to have connections. So, we try."
>
> Julie, Adult Education and Community Development graduate – unemployed in 2017

> **"**The manner in which these organisations advertise, they supress it. Some do not even advertise. They stay internally. Then they pass it to friends and family. Then there is the mindset where a number of Sierra Leoneans do not have skills. They do not have the skills and try to use connections to get the job."
>
> Swaray, Electrical and Electronics Engineering graduate 2014 – employed in 2017

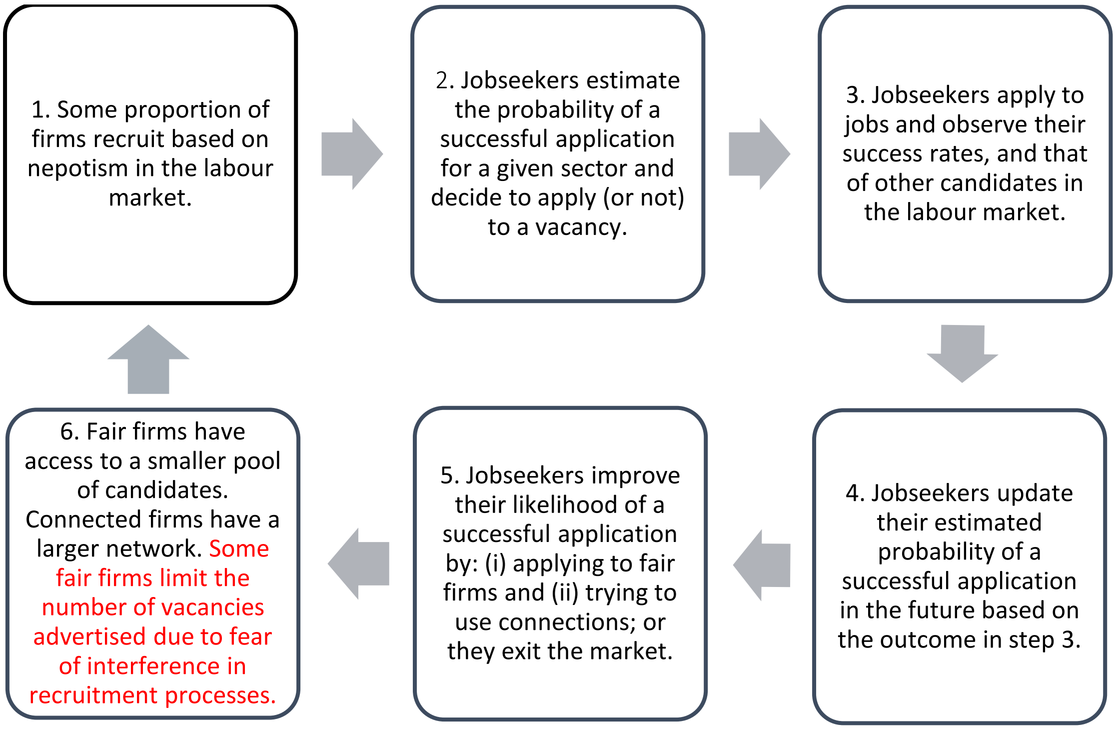
> "We have a bunch of CVs. We have an HR information software. There is rarely a time we go outside of this. This is the first point of call. For my position, it was clandestine. In secrecy, to avoid interference. Now, I need a warehouse supervisor. I need someone with integrity. Politicians try to influence. The issue with letting these people in is that they bring negative energy to the rest of the staff. Then they are protected and they will protect others. I want to avoid this.
>
> Human Resources Manager, Private Sector Company

> "For a given year, there are 4-5 positions created because of new projects. Sometimes we don't advertise because of Government bribery and withholding certificates. People call from State House with names of people for the job. If we don't comply, we're not in Government's good books. So, we go based on references. We ask colleagues. One project asked us to advertise. There was so much interference. This project was partially funded by the Government".
>
> Director, Local NGO

The behavioural effects of homophily and networks are apparent on both the demand and supply sides of the labour market in Sierra Leone. Firms and workers respond, either embracing a nepotistic culture or refuting it, and the decision results in various behaviours in the labour market. It should be noted that in Sierra Leone (as discussed in chapter two), a buyer's market exists as there are few vacancies being created, but many graduates entering the labour market each year. This is an important feature for understanding what is observed on the supply side, and the lessons that can be drawn. The search process observed in Sierra Leone is summarised in Figure 5.8.

From Figure 5.8, the Sierra Leonean data is an illustrative example where many of the predictions from the models in sections 5.4 are observed. In addition to this, the Sierra Leonean data also show that some firms that wish to recruit fairly may limit advertisements because of external pressures (usually political) to take certain candidates. This is illustrated in red in Figure 5.8.

Figure 5.8: The search process in Sierra Leone



On the demand side, many organisations complained about not having the resources/staff to properly vet candidates given the increasing supply of graduates in the labour market. This is especially problematic as several employers reported that they find it difficult to distinguish high and low ability jobseekers because of fake degrees and students reportedly buying grades from lecturers, and/or paying other students to sit exams on their behalf. These practices increase the likelihood of a pooling equilibrium. Some employers reported that they ask members of their network to refer candidates to overcome these information issues. These referrals often resulted in the candidate being recruited.

There are thus two types of firms that emerge in a nepotistic labour market from the data - compliers and non-compliers. Compliers embrace networks and (i) use their contacts to advertise vacancies, (ii) place value on referral letters from trusted sources in their network and (iii) importantly, would hire a candidate that has been suggested to them over another candidate that may be of equal or higher ability. Non-compliers derive informational benefits from networks as in (i) and (ii) above; but refrain from patronage and therefore would not hire a candidate on account of nepotism over merit. These firms are “fair recruiters” in terminology of section 5.4. An example of a complying firm is given by the private sector company quoted at the beginning of subsection 5.5.2, while the NGO quoted at the beginning of this subsection is an example of a non-complier.

The added harm in Sierra Leone is that external pressures drive some firms away from open advertisements, even though these firms wish to recruit based on merit. Several companies reported external pressures to hire specific candidates, especially from political associates as discussed in section 5.5.2, with many acceding to these requests. Some reported that they respond to external pressures (and minimise reprisals from failing to carry out suggested hires) by not advertising certain positions externally, or absorbing current/former interns and volunteers, referring to their pool of CVs or asking for personal recommendations – see quotes above for example. This overcomes issues of external interference to some extent; but limits the pool of eligible candidates and importantly, projects an image of unfairness to observing jobseekers.

On the labour supply side, there are two types of workers, those that are connected and those that are not connected. Firstly, the unconnected limits search intensity and reduces the number of applications submitted in comparison to if the labour market were fair. Due to distrust in the system, applicants cannot tell which jobs are legitimately open until they reach the final stages (as in Mohammed’s case), so many update expectations and do not apply to avoid wasting time and resources. In other words, there is a discouraged worker effect for some unconnected workers (see Box 5.4). From the data, those who had been searching for at least a year already (some up to ten years) had all but given up hope of finding a permanent job and relied on working in the informal sector, engaging in short-term casual work or teaching. As discussed in section 5.4.5, this reduces the candidate pool for those companies trying to recruit fairly.

Box 5.4: Jobseeker responses in the labour market

"You need three things for getting a job: social relations, technical skills and to be highly connected. I am trying to build connections. As for now, I am a trained and qualified electrician and plumber. I trained at GTI. I use this to make money." Male, BSc. Social Work

"It is very difficult to get a job these days. For us, the sciences, the easy way is to teach. I was teaching Physics and Further Maths. I went with no paper. I had not graduated yet. But they allowed me to work as a volunteer. They observed my teaching and then asked me to formally apply. Then I got the job." Male, BEng Civil Engineering

"I worked on a survey. After the survey, I set aside some money for business, like petty trading. I sent my friend with money to Guinea to buy groundnut oil and leave it at these offices." Female, BSc. Financial Services

"For me, I can do designs. I can braid hair, bake cakes, I can be a small proprietor. But I prefer to be employed. But I don't only have to depend on my education." Female, BSc. Commerce

"I will engage in other business while looking for work. Like hairdressing and food selling, like shawarma." Female, BSc. Linguistics

Secondly, the unconnected makes a judgement based on observed data over time as to which firms, or groups of firms are fair, and which are not. An example of this strategy in Sierra Leone is applying to jobs at donor organisations, INGOs and foreign-owned and managed organisations that are perceived to be fairer. Leveraging the development sector as a fairer choice is discussed in more detail in section 5.6 below.

Thirdly, applicants attempt to become connected, thereby increasing the likelihood of successful future employment (Box 5.4). As discussed in 5.5.1, of the 30 employed respondents, 43 percent knew someone within the organisation before they applied. Furthermore, there is also the belief among respondents that the labour market has become less fair over time as some workers do not believe they would be hired in their existing roles should they apply now in a currently more nepotistic and networked labour market. Recruiters also reported increasing external pressures to hire connected individuals.

The perception that the labour market is getting more connected is both a prediction of and crucial mechanism in the theory presented in section 5.4. It demonstrates that there has been some response by firms and workers to an initial level of patronage, and the response has worsened the system. If the dominant belief is that there is an increasingly nepotistic labour market were homophily is a key requirement, it follows that the incentive will be to become more connected, making the presence of homophily and patronage in the labour market even more dominant.

In Sierra Leone, the practice of recruiting through networks leads to a combination of the following: (i) less information in the labour market as fewer firms advertise, (ii) non-credible vacancies being posted as some companies advertise as a formality and simultaneously recruit from within their networks, (iii) fewer candidates applying for advertised vacancies as some become discouraged, (iv) higher hazard rates and/or underemployment for some higher ability unconnected workers and (v) less able workers in some positions. The former three affect the search process and the latter two the match observed in the labour market. The data thus illustrate some of the predictions of the model, and confirm the responses to the research questions presented in section 5.4.6. Ultimately, recruitment through networks can be seen as an ill and is disadvantageous to the labour market. Respondents are cognisant of this and see connections as one of the biggest challenges in the labour market which needs to be addressed.

This is reminiscent of Schelling's (1971) model where individual incentives lead to a collective result that is less desirable to society as a whole. In the famous segregation model, Schelling demonstrates that even mild preferences at the individual level for similar neighbours can lead to highly segregated neighbourhoods. This body of literature recognises that in cases of complex systems, individual behaviour can have striking effects on a collective result, even though such effects may be unintended by, or even undesirable to the individual.

A similar phenomenon emerges in this study. The majority of firms would like to be able to find and hire the best candidates; and most workers would like to be able to observe all vacancies and be selected based on merit. However, once some percentage of firms hire based on networks, the incentives of some workers and firms will be to use connections to secure a match. The system then reduces to one that is nepotistic with connected insiders securing jobs over unconnected outsiders, though the majority of agents in the labour market would prefer a freer, fairer labour market. The outcome is thus sub-optimal. Moreover, if being connected is correlated with other sociodemographic measures such as income, gender or urban versus rural place of birth, connections in the labour market would serve to reinforce existing social inequalities. In this case, the outcome is both inefficient and unequitable.

5.6. THE DEVELOPMENT SECTOR IN A NETWORKED LABOUR MARKET – LEVERAGING FAIRNESS AS A PRACTICAL STRATEGY

One of the three jobseeker responses identified in Figure 5.3 and discussed in section 5.5.3 is a shift away from unfair sectors to perceived fairer ones. This manifests as a push towards the development sector in Sierra Leone. In other contexts, this need not be the development sector, but whichever sector or industry is perceived to be fairer. Evidence of the push towards the development sector is presented in this section. In so doing, the third research question of this chapter is addressed, and a link is established between this chapter and the thesis more generally, which imbeds the development sector in the labour market.

A dominant perception was that the development sector was fairer than the public and private sectors, and within the development and private sectors, foreign organisations were less nepotistic. This may be on account of such organisations being inherently more transparent due to donor funding and associated obligations and/or having access to a smaller network in comparison to local organisations. Extracts from the focus groups discussions are presented below:

> "It's easier to get an NGO job because of qualifications, not nepotism. In developing countries, NGOs bring jobs. One NGO could have three projects. Then the NGO can have 500 staff. The private sector is controlled by the politicians as well. The advertisements are for the internal audit. The private sector is a branch of the government. The foreign banks are more transparent."
>
> Male, BSc. Banking and Finance

> "I apply to the NGOs. I had an interview at [organisation name removed], but the difficulty is experience. I am open to any sector, but 90 percent of the jobs I see on the job-link website are NGOs. You hardly see government jobs. I drop my CV but I don't hear from them. The NGOs believe in transparency, they call. So, I apply to them. Most interviews I get is with NGOs."
>
> Male, BSc. Human Resources

"I sent my CV to a recruitment agency after I graduated in 2017. Three weeks ago, I got a call. I forgot I applied. It was March/April. I met these foreign guys – one Indian and one Black foreign guy. The company is [organisation name removed]. It's affiliated with [organisation name removed]. They called on Saturday. I got the job. I don't really know the company. I will be a business development person. For health. The interview was at Ecomed. I used AfRecruit to find the job. I frequently use the online search engines. Only the UNDP job and this job were no connections."

Female, BSc. Information Systems

"There are places that are based on merit. Like the INGOs, DFID, UN. I mean you can get a job through connections, but I expect it to be more on merit."

Male, BSc. Peace and Conflict Studies

Triangulating the findings from the qualitative data with data collected from the survey, the perception of the development sector as fairer is substantiated. The survey asked respondents if they had any work experience, and if so in which sector. Unlike the CV data used throughout this chapter thus far, the survey data does not capture the number of jobs per sector, but simply if the respondent had work experience in the sector (a binary variable). There are more observations from the survey data in comparison to the CV data, which enables more robust quantitative analysis.

Probit models are then used to determine if reported Grade Point Average (GPA) is associated with having experience in a particular sector. I use GPA as a proxy of ability as recruiters often request transcripts when hiring interns. The framework for the Probit model is similar to that described in section 4.3.1.3, but instead of predicting sector choice, the model below gives the probability of having employment experience in a given sector (j) based on GPA scores, controlling for other individual characteristics such as age, sex, being originally from Freetown, living in the richer Western part of Freetown, reported ethnicity and faculty of enrolment. Controls are included in the vector Z_i in the model below:

$$P(ever\_employed\_sector_j = 1) = \Phi(\beta GPA_i + \gamma Z_i + \varepsilon_i)$$

GPA scores are likely an imperfect measure of ability given the existence of grade fraud in Sierra Leone as previously discussed, however these are reportedly used by many employers when recruiting interns. Given the short-term nature of internships, aptitude tests are rarely done as the costs of such screening outweigh the benefits associated with temporary tenure. Furthermore, GPA scores are a constant and common signal to all employers while pure measures of ability are conditional on the screening quality of the recruiter. Finally, jobseekers are often aware of others' GPA and use this as a barometer of employability. Using GPA scores as a proxy is thus sufficient for understanding perceptions of fairness.

Of the 392 students surveyed, 233 had some type of work experience. 110 had experience in the public sector, 74 in the private sector, 62 in the development sector and 10 shadowing someone in self-employment.[59] Table 5.6 shows the regression results from three separate sector-specific Probit models. Average marginal effects (AME) are reported. AME is understood as the average change in the probability of having employment experience in one of the three sectors when a regressor changes, ceteris paribus. The primary variable of interest in the model is GPA as the coefficient indicates the change in the probability of being employed in a sector that is associated with a higher GPA score. GPA scores range from zero to four in Sierra Leone.

The most striking result is that higher GPA is associated with a higher probability of employment experience in the development sector only. This corroborates the perception of relative fairness of the development sector which emerged from the qualitative data. From Table 5.6, a 0.1 unit change in GPA score increases the probability of having experience in the development sector by 0.0213. The result is significant at the five percent level. Furthermore, the faculty of enrolment (which indicates the types of skills to a large extent) is related to development sector experience but not private or public sector experience. Social Scientists and Pure and Applied Scientists are more likely than Arts students to have development sector experience, while Engineers are comparatively less likely.

Personal attributes like age and gender are not associated with development sector experience in the model, while these traits are significant in the public and private sector models. Being older or female is correlated with public sector experience, while being younger and male with private sector experience. With respect to ethnicity, relative to Temnes (the reference group in the three models),

[59] The sum of all sector experiences is larger than the number of respondents ever employed as some respondents had experience in multiple sectors.

all other groups are more likely to have development sector experience. One potential explanation is that Mendes, Krios and other ethnicities perceive the development sector as fairer and thus self-select into the sector leading to clustering of these ethnicities in the development sector. Krios and Mendes have a lower probability of having public and private sector experience respectively.

Table 5.6: Probit regression results for sector experience $(n = 233)$[60]

	Average Marginal Effects (AME)		
	Public	Private	Development
GPA	-0.044	-0.164*	0.213**
	(0.101)	(0.09)	(0.087)
Age	0.264***	-0.026***	-0.003
	(0.0073)	(0.008)	(0.006)
Female	0.134*	-0.147**	-0.042
	(0.071)	(0.067)	(0.062)
Freetown Origins	0.014	0.104*	-0.065
	(0.066)	(0.061)	(0.058)
Lives in West Freetown	0.003	0.023	-0.048
	(0.066)	(0.06)	(0.602)
Ethnicity			
Krio	-0.277**	0.018	0.414***
	(0.133)	(0.141)	(0.138)
Mende	0.0484	-0.185**	0.209***
	(0.091)	(0.077)	(0.074)
Other	-0.108	0.02	0.122*
	(0.083)	(0.077)	(0.063)
Faculty			
Engineering	0.028	0.072	-0.118*
	(0.112)	(0.106)	(0.069)
Pure & Applied Sciences	-0.048	-0.045	0.187*
	(0.113)	(0.101)	(0.106)
Social Sciences	-0.081	-0.104	0.145**
	(0.075)	(0.07)	(0.064)
LR Chi2 (15)	24.96***	38.96***	30.88***

The baseline group for Ethnicity is Temne and for Faculty, the baseline is Arts

Standard errors in parentheses. Standard errors are calculated based on sample weights.

*** p<0.01, ** p<0.05, * p<0.1

Source: Author collected survey data

[60] It should be noted that model does not capture likely omitted variable such as social/familial networks as there is no available data on these ties.

The quantitative data therefore show that the development sector is conspicuous for selecting based on a signal of ability (GPA) and/or skills sets (faculty of enrolment). Understandably, some jobseekers assign a higher probability of employment to the development sector and in expectation, this sector becomes more attractive.

The results are robust to various specifications of the models such as excluding all controls or including interaction effects between: (i) GPA and faculty, (ii) GPA and ethnicity and (iii) ethnicity and being originally from Freetown. Albeit, there are potential issues of selection bias that should be noted. For example, the analysis focuses on correlations between attributes and experience in a particular sector, conditional on having work experience. As such, those who were not actively seeking work experience or could not find a job are not observed in the data. Moreover, it is very likely that having work experience (and thus being included in the sample) could be influenced by being connected.

In the chapter four, I showed that the development sector matters for early-career occupational choice of young skilled workers as the largest share of university leavers (44 percent) opt for employment at a development sector organisation (NGO, INGO or donor organisation). The probability of choosing the development sector was also shown to increase with cognitive ability. Based on the arguments in this chapter, it follows that even though some workers may not have preferred employment in the development sector *ex ante*, patronage in other sectors pushes these workers into the fairer development sector. From sections 5.4 and 5.5 of this chapter, if high ability workers observe lower ability workers being hired ahead of them, one of the behavioural responses is to apply to firms that are perceived to be fairer. This is the development sector in this case. It thus follows that if a higher share of higher ability unconnected workers applies to the development sector, the sector will employ a higher share of high ability workers relative to other sectors.

At the micro-level, movement to the development sector is a completely rational and likely optimal response for those unconnected who are unable to obtain employment. At the macro-level however, this has implications for the internal brain drain effect discussed in chapter four and the skills that are developed through employment in the development sector as it relates to arguments put forward in chapter three. This is thus another example of individual behaviour impacting on an aggregate system. In the quest to avoid nepotistic firms and become employed at the individual jobseeker level, the aggregate system may see a movement of high ability workers to the development sector.

5.7. CONCLUSIONS

There is evidence of nepotism and patronage in the labour market. The chapter has not tried to quantify how many or what percentage of firms/workers in the labour market use connections to secure employment. More importantly, what matters is that some firms do and that there is the belief among jobseekers that such behaviour exists. The perceived prevalence of biased recruitments varies from individual to individual based on their experience in the job market. The jobseeker who has been unable to find employment for an extended period while observing his/her colleagues in employment is likely to be less positive about the labour market. These beliefs matter for decision-making and behaviour. In such a situation, it is expected and observed, that jobseekers apply heuristics and probability judgements when deciding to apply for jobs. Connections, networks, homophily thus create a market friction and prevent smooth interactions between jobseekers and recruiters.

Actions by agents in the labour market (both firms and workers) pollute the information set and limit the amount of information available to everyone in the labour market. As jobseekers and firms engage in search and make hiring decisions, their private actions to utilise networks change conditions in the labour market and encourage perceptions of unfairness. This imposes a cost on those wishing to access and use information. Some firms may limit the information they provide, and the number of vacancies posted, and some applicants may not respond to vacancies posted because of perceptions of unfairness. The result is that there is less information available to some firms and jobseekers that are searching based on merit and desire full information.

Moreover, some firms may advertise as a formality, without genuine intentions of recruiting based on the advertisement. In this instance, the information is not credible as some applicants who respond incur the costs of applying with little to no chances of being recruited. Using connections or networks in the labour market therefore imposes a third-party cost or a negative externality on firms and workers that either choose not to use such networks, or on those that cannot access such networks. For these two groups, there are reduced chances of an optimal match. The response of firms and jobseekers may also worsen the situation. On the jobseeker side, some jobseekers may opt-out and not apply for certain jobs that are perceived to be for those with connections. In the Sierra Leonean context, there is a push towards the fairer development sector.

The above effects all relate to individual perceptions and behaviour, which in turn impacts the collective system that is the labour market, and the economy more broadly. For instance, human capital choices are distorted, productivity and output are likely lower than potential, and there are distributional implications if some jobseekers are excluded from the labour market. Exploring and deepening our understanding of the perceptions and behavioural responses to patronage is the main contribution of the present chapter. I have maintained that the use of networks in itself may not be disadvantageous if networks are used to identify candidates and/or to provide preliminary screening. Issues arise when the firm is willing to trade off ability for connectedness. The trade-off negatively affects the ability distribution of the employed, but also fosters perceptions of unfairness in the labour market.

CHAPTER 6 – THESIS CONCLUSIONS

This chapter presents the overall conclusions of the empirical chapters and discusses how the chapters relate to each other. I reiterate the contribution of each of the chapters and the thesis as a whole to existing bodies of literature, linking to the discussion presented in the introductory chapter. Subsequent to this, I discuss the policy implications of the research. I conclude with reflections on the research and present areas for future study.

6.1. ANSWERING THE RESEARCH QUESTIONS

In the introductory chapter of the thesis, three research questions were outlined. Each substantive chapter of the thesis shed light on one of these research questions. The research questions are repeated here, followed by a discussion on how the findings relate to these questions:

1. How does the development sector influence skills composition in host-countries like Sierra Leone?
2. How does the presence of a development sector affect the occupational choice of skilled workers?
3. How do jobseekers navigate patronage in the labour market? And what role does the development sector play in such contexts?

The third chapter used qualitative data to explore the first research question on the role of the development sector in skills development specific to TVET and higher education in post-war Sierra Leone. The analysis suggests that: (i) donor-influenced skills development in TVET areas have not been easily absorbed in the formal sector and (ii) interventions at the university level have led to a shift in the skills composition.

In Sierra Leone, the new donor-supported BA. in Peace and Conflict Studies appears to have led to a significant shift in the skills composition. Moreover, as some graduates develop skills for employment in the development sector and enrol in so-called NGO courses, the share of graduates obtaining skills that are easily transferable to other sectors of the economy (for example STEM subjects) has declined over time. It follows that some sectors may be non-starters if they are not able to access required skills when needed. From quantitative secondary data and primary qualitative interview data, there is evidence of an increasing share of graduates with skills for the NGO sector in Sierra Leone, though these skills are not highly demanded by the formal private sector.

Chapter three is situated within the skills for development literature, as it offers one explanation as to why employers report a skills gap while the skilled workforce simultaneously increases. The findings here indicate that this paradox arises from the wrong types of skills being developed. Importantly, the chapter also speaks to the literature on the effects of aid in developing countries, by proffering a new channel (skills development) through which a potential aid-curse can likely materialise. This new channel is presented, but not evaluated econometrically – see discussion in 6.3 on areas for further research. The chapter does however, lay out the importance of the development sector in skills development and the labour market. The role of the development sector in the labour market was further explored in chapters four and five.

Chapter four explored the second research question, and used survey data, experimental games and an incentivised occupational choice design to model occupational choice among university graduates in Sierra Leone. The results complement those of chapter three, further highlighting the role of the development sector as an employer. The main results of this chapter are: (i) the largest share of graduates sampled wish to work for a development sector organisation; (ii) graduates with higher cognitive ability, higher prosocial measures and increased desire to achieve social status through employment are more likely to opt for employment in the development sector; and (iii) favourable perceptions of the development sector crowds out choosing both public and private sector employment (in favour of development sector employment), while favourable public sector perceptions do not crowd out opting for the private sector, and vice versa.

The chapter teaches us several lessons, which can be situated in both the behavioural economics literature as well as the aid-effects literature. For the former, we have learnt that there are elements of mission matching which matter for occupational choice as jobseekers sorted themselves based on prosocial traits and desired status. We have also learnt that perceptions of various sectors matter for occupational choice. With respect to the aid-effects literature, by introducing the development sector as third sector alongside the public and private sectors, it was made clear that this sector is very attractive to graduates, and in particular, higher ability graduates. I term this as an "internal brain drain effect" to describe the phenomenon that would occur if the best and most capable graduates settle into development sector employment as opposed to working for public and private sectors. Moreover, the finding that favourable perceptions of the development sector matter for not choosing the public or private sector further shows the role of the development sector in influencing employment in other sectors in the labour market.

Perceptions were introduced in chapter four, and were integral to the analysis of chapter five. In this chapter, a mix of mathematic modelling and qualitative data were used to explore the role of perceived patronage or so-called unfairness in the recruitment decision – the third research question. This chapter contributes to the literature on search and matching, though lessons can also be extracted to debates on corruption in developing countries. Here again, the development sector is embedded in the labour market and emerges in a positive role from the vantage point of jobseekers.

The key lesson from the fifth chapter specific to the search and matching literature is that jobseekers factor in costs and benefits in their search decisions as previous literature has shown, but also the probability of being employed is shown to be important. As a result, if jobseekers who are not well-connected in the labour market believe that they have a lower probability of being employed because firms are recruiting based on some weighted combination of ability and connectedness, they modify their search behaviour accordingly. The response is to either exit the labour market, attempt to become connected or apply to jobs/sectors that are perceived to be fairer. It was also shown that it may be rational for some firms to limit advertisements and recruit from within their networks. Collectively, the implication is that once there is a certain level of unfair firms and network-based recruitment, this imposes third-party costs on unconnected workers and fair firms, and distorts the search process. As noted, one response of jobseekers is to apply to fairer sectors. In Sierra Leone, this is the development sector.

The common theme across all chapters is the role of the development sector in skills development and the labour markets of low-income countries like Sierra Leone. Through both intended policies and unintended consequences (as an employer), the development sector changes the fabric of the labour market. The type of labour available in a country is important to growth, and as such, interventions and actions which influence skills development and the labour market can have potential impacts on long-run growth and development. The labour market can therefore be another possible channel in the aid-curse debate (alongside established ones such as the real exchange rate, governance and institutional capacity and moral hazard). In other words, a large and persistent development sector may continue to endure if changes in the skills composition negatively affect growth, thus reinforcing aid-dependence.

6.2. POLICY IMPLICATIONS

In this section, I outline some policy implications and potential recommendations that stem from the empirical results. The recommendations are framed within a Sierra Leonean setting, though many lessons can be extended to other aid-dependent low-income countries.

6.2.1. The development sector as an employer

There is evidence of sorting based on cognitive ability where less able jobseekers are attracted to the public sector, and more able jobseekers to the development sector (chapter four). As a policy implication, development partners need to be aware of the risk of an internal brain drain effect in their hiring policies, and the knock-on effects that can have on other sectors in the economy. In achieving growth and development, a more desirable scenario may be one where those with higher ability are engaging in productive activities in the private sector or advising and implementing policy in the public sector. The overall impact of an internal brain drain relies on: (i) the degree of aid effectiveness and how much aid contributes to growth and development nationally - which remains an ongoing debate, and (ii) the ability to transfer skills from on-the-job training while employed in the development sector to other sectors of the economy (as discussed in chapter three).

On the other side of the coin, the public and private sectors can actively work to improve their appeal to those who have the necessary skills and are able to work across all sectors. As shown in chapter four (Figure 4.3), the largest share of respondents ranked the development sector as their first choice for salary, status (jointly with the public sector) and training opportunities. The development sector was ranked second for career progression. Given that it has been shown that perceptions matter for occupational choice, the public and private sectors can work to improve their image in the eyes of qualified graduates.

6.2.2. Skills development and the reported skills gap

In addition to higher ability students opting for development sector employment, chapter three shows that students of the Arts faculty have a higher probability, relative to other faculties, of choosing the development sector. The second largest faculty at Fourah Bay College is the Arts faculty, where students read for degrees in History, Philosophy, Mass Communication, Adult Education and Community Development, for example. These students find it more difficult than other degrees types to find employment in the private sector as these skills are not highly demanded by the majority of private employers. Similar reports were made about Social Science courses such as Peace and Conflict Studies, Sociology and Social Work. Most of these courses fall into the category of "NGO courses" as described in chapter three.

The labour market and employment debate in Sierra Leone is cognisant of the skills gap and (un)employability of graduates (chapters two and three); but there are two dimensions to this. There is a general issue of quality which affects the skills available as discussed in chapter two, but also a large share of students are attaining skills that cannot be easily absorbed by the formal private sector at both the TVET and graduate level. This is an issue of too much training in specific human capital – which benefits the informal sector at the TVET level and development sector for the courses listed above – and not enough training in general human capital which benefits a range of firms and industries. I have argued in chapter three that this is in part because of interventions by the development sector. A recommendation in this area therefore focuses on developing skills that are demanded by the private sector. The recommendation is targeted at all skills providers, including the developing sector.

As noted in chapter three, factors such as the cost of training and infrastructural constraints in the education sector exacerbate the proliferation of NGO courses and the Disarmament, Demobilisation and Reintegration style TVET training which emerged after the war; the latter of which continues to be centred around short-term courses that require little capital to deliver. As an example, at the tertiary level, it is reportedly cheaper to educate 1000 Peace and Conflict Studies students say, than 100 engineers and scientists who require technical equipment and up-to-date laboratories. Addressing these capacity issues at training institutions should thus be a priority for both the government and development partners.

There are also issues of poor quality which must be mentioned. In this study, this manifests in the below average scores on the Raven's matrices (a proxy for cognitive ability). University graduates at the oldest and most established university in Sierra Leone are not at the level of 8^{th} graders in the American system based on this cognitive ability test (chapter four). Hence although there is sorting based on ability, ability is generally low – a sentiment echoed by several employers as noted in chapter two. Though the current study focused on skills at the highest level and TVET, the flow of students into tertiary education is influenced by the calibre of outflows at lower levels. More specifically, as noted in chapter three, the entry requirements for so-called NGO courses are often lower than more mathematical social science qualifications (such as Economics, Accounting and Finance) and courses in fields related to science and engineering.

As such, policy recommendations can be made targeting the improvement of the education system from the primary and secondary level to TVET and university, in particular as the Government of Sierra Leone has recently rolled out its free education policy. Firstly, more emphasis should be placed on quality of education, in particular STEM subjects and English Language at early stages of the education system, and progression should be based on merit and not simply passing through the system. National and international policy should therefore make a concerted effort to address possibly smaller targets, but ones that are significant to employers. Basic numeracy and literacy to the level of 8th grade in developed countries is a likely more meaningful target than years of schooling. Moreover, technical vocational institutions should be strengthened (through collaboration with the private sector) and de-stigmatised to provide alternative routes to those less academically inclined, given current perceptions (see section 2.4 of chapter three).

Similarly, setting targets at the tertiary level based on expected demand in the private sector, is more meaningful than simply increasing spending and subventions to tertiary institutions as has been done in recent years. In so doing, a step will be made towards addressing the quality of education, the demands from the private sector, and ultimately the level of under and unemployment among graduates. An elementary example of this would be working in consultation with the private sector to train the appropriate number of mining engineers, automation engineers, chemists, accountants and so forth to the standards that are available in more developed West-African countries like Nigeria.

6.2.3. Information and perceptions in the labour market

Based on data presented in chapters two and three, entry-level jobseekers reported few vacancies being advertised, and those advertised had limited information about the job. On average, more graduates reported knowledge of information about jobs in the development sector relative to other sectors. Additionally, the development sector is often perceived as being fairer in the recruitment process (chapter five).

These issues require access to more information, but more importantly, trust in that information. The former issue is relatively easier as government policy could require all jobs to be publicly advertised and the terms clearly stated. According to informants from the Ministry of Labour and Social Services (MLSS), this is currently a requirement, but it is not enforced and even government offices do not always adhere to this policy. Therefore, the first recommendation is enforcing the policy around information availability.

Advertising vacancies helps to provide more information on the benefits of applying to the job, however, this may not necessarily stimulate an application if jobseekers do not believe they have a fair chance of being hired because they are not part of the employers' network (chapter five). As discussed in section 5.3.1, jobseekers decide to search/apply for jobs not by a simple comparison of costs and benefits, but by also considering the probability of being employed. This means that more advertising may not necessarily lead to more applications. Moreover, interventions that aim to bring firms and workers together through job fairs may not lead to increased employment for jobseekers attending the fairs if firms recruit from within their networks.

Therefore, because of these homophily-based frictions in the labour market, a complementary policy to improved information flows from employers' centres on improved trust and credibility of advertisements. Policies to tackle corruption and patronage in developing countries have so far focused on public financial management processes and governance at the level of central government and line ministries, with a focus on the management and use of public resources. This is an example of mismanagement of power and influence, rather than the public purse. Policy makers should therefore be cognisant of the wider ramifications of low-trust environments and include the social aspects of corruptions when working with governments to improve transparency.

6.3. REFLECTIONS ON THE RESEARCH AND AREAS FOR FUTURE RESEARCH

The thesis explored three main research questions as summarised in section 6.1, all within the larger topic "Understanding the effects of a large development sector on the labour market of a small low-income country: Evidence from Sierra Leone". As rewarding as it was to explore these questions and proffer some explanations, the research process undoubtedly has led to several other questions. I will conclude by discussing these areas for future research.

As note in 1.5.2, Fourah Bay College was the main study population and attempts have been made to generalise the findings using sampling weights. Despite this, given that perceptions have been shown to be of primary importance, we might expect different results if the sample included university students in rural areas who had never lived in Freetown. This matters as context is expected to influence perceptions.

Related to this, further research may wish to explore how perceptions on the labour market converge in particular groups. For instance, is there a "leader" that introduces a new idea and disseminates this which results in "group think" or is it that individuals update their beliefs by accessing information outside the group. This type of research would complement the results on perceptions towards the development sectors and occupational choice in chapter four, and perceptions on labour market fairness in chapter five.

The study population of the research was defined as skilled workers, an under-researched group in LIC contexts. Having said that, some results presented here may not be applicable to lower-skilled jobseekers who likely have different aspirations and opportunities available to them in the labour market, and are likely to search in different ways. Such workers, in essence, operate in a different market segmented by skills. This particularly relates to the analysis in chapters four and five.

Within the subset of skilled workers, this study did not explore gender differences in great detail. It was shown that females are less likely to choose the public sector, but this was not explored in great depth in the study. This can be an area for future qualitative research in terms of fully exploring the gender dynamics of different employment choices.

One of the main conclusions from chapter five is that individual perceptions and behaviour impact collective systems like the labour market. This leads to several costs. Namely: human capital choices are distorted, productivity and output are likely lower than potential, and there are likely distributional implications if some jobseekers are excluded from the labour market. These costs were discussed in the thesis and described within the terminology of deadweight loss from welfare economics, but not quantified. Further research can seek to quantify the welfare loss of patronage in the labour market.

The empirical evidence presented here has been skewed to the supply side of the labour market, though discussions on the demand side were included in chapters two and five. As with any matching market, both demand and supply are important. The International Growth Centre has produced, and continues to produce, relevant research on firms in developing countries from which lessons can be learnt. From the Sierra Leonean context, two research areas emerge. Firstly, a thorough analysis into issues affecting firm performance and job creation in Sierra Leone, and potentially quantifying lost output related to various factors (including skills shortages). Secondly, and from a qualitative angle, a number of companies interviewed in this study survived both the civil war and the Ebola outbreak, and continue to thrive. Exploring the experiences of these firms (as case studies) can provide lessons on firm survival in the most difficult contexts in developing countries.

Finally, one of the main hypotheses emerging from the thesis (and in particular) chapter three, is the influence of the development sector on the skills composition, and skills as a likely channel of continued aid-dependency. Further research could test this hypothesis formally. Such research would require astute econometric techniques to move beyond correlation to causation, while overcoming data challenges concerning the availability of skills data at the tertiary level across countries and time.

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APPENDICES

APPENDIX 1: SAMPLING WEIGHTS

Based on a 2013 World Bank study, there were 32 higher and tertiary education institutions in Sierra Leone registered with the Tertiary Education Commission in 2011. This included two public and one private university, and the balance comprised polytechnics, training colleges and professional colleges or institutions (World Bank, 2013 p.11). At that time, 31,103 students were enrolled throughout these institutions. Given that a more recent estimate was not available from the Tertiary Education Commission, several assumptions were made and applied to the initial figure of 31,103 from the 2013 study to determine the population size to which results can be generalised. These assumptions relate to three main adjustments: excluding certain institutions, capturing private universities that were not included in previous estimates, capturing polytechnics that have begun awarding degrees. The purpose of this exercise was to determine the share of graduates produced by Fourah Bay College in a given year, which was then used to calculate sampling weights.

Firstly, as mentioned in the main text, the College of Medical and Allied Health Sciences and Teachers Training colleges were excluded from the study. Excluding these institution leaves 14,100 students at degree awarding institutions. Secondly, the 2013 study presented data based on public higher and tertiary institutions (World Bank 2013, p.11-12, 61), but excluded private institutions. The University of Makeni (formally Fatima Institute which was established in 2005) is one such university and reported 1000 students for the 2013/2014 academic year. More recently, Limkokwing University opened in March 2017 and had 1100 students enrolled in 2018. The students of the former (the University of Makeni) will be added to the population, but not the latter as no students would have graduated at the time of study in 2017. This increases the population of university students to 15,100. Thirdly, several polytechnics have begun offering degree programmes. For example, Eastern Polytechnic offers bachelor’s degree programmes in Business

Management, Science, Accounting, Criminology, Government, History, Geography and Economics. So too has the Milton Margai College of Education and Technology. The northern polytechnics (Port Loko Polytechnic and Makeni Polytechnic) have been upgraded to university status and incorporated under the Ernest Bai Koroma University (Sama, 2014). Based on an online review of the courses offered at these institutions and interview data, it is estimated that 10 percent of the students from these institutions are studying for degrees; with the remaining 90 percent enrolled in diploma and certificate courses. This increases the population of university students to by another 1,100 to 16,200.

Based on this amended estimate, FBC accounted for approximately 28 percent of all students at degree awarding institutions. I assume this ratio is constant (in other words, there has been similar growth across institutions). The implication is the each FBC students represents 3.6 of the population. From the FBC final year student population of approximately 1060, 392 students were sampled. Each student sampled therefore represents 2.7 FBC final years students. Taken together, each student in the survey represents on average 9.7 students (2.7 multiplied by 3.6) who are about to graduate with a bachelor's degree. This is the average weight and may be more or less based on the faculty in which the student's major is categorised as.

APPENDIX 2: FOCUS GROUP GUIDE 1 – GRADUANDS ENTERING THE MARKET

1. Tell me a bit about your experience as a FBC student.
2. How could this have been better? / How could the university experience be improved?
3. Why did you decide to study at university?
4. Have you ever thought about doing a technical vocational course?
5. What is a good job? - <u>Please write down three things before discussing</u>
6. What do you think about being self-employed?
7. What do you think about working in the agriculture sector?
8. What types of job are you looking for?
9. What are some of the challenges you expect when trying to find a job?
10. How ready do you think graduates are for employment in terms of having the right skills?
11. <u>Write down three skills you think you may need to improve on to increase your chances of finding a job</u>?
12. Are there any programmes at the university, outside of academic teaching, which aims to improve the employability of students?
13. Do you know of any government or donor programmes to help young people get employed?
14. How do you plan to look for jobs?
15. How long do you think it would take to find a job? – <u>Please write down the answer</u>
16. How many jobs do you plan to apply each month? – <u>please write down the answer</u>
17. What will you do while you search for a job?

18. Please complete the table, then we will discuss.

19. If you were in charge of making decisions in Sierra Leone, how would you go about addressing some of the challenges related to youth unemployment?

20. What can each of the various actors do to improve employability and job creation for young people?

Government	**Development Partners/Donors**
The private sector	**The education system**
Young people collectively	**Me personally**

APPENDIX 3: FOCUS GROUP GUIDE 2 – GRADUATES IN THE MARKET

1. Tell me a bit about what you have been doing since you graduated.
2. How have you been searching for jobs?
3. What types of job are you looking for?
4. What is a good job? - <u>Please write down three things before discussing</u>
5. How long do you think it would take/did it take you to find a job? – <u>Please write down the answer</u>
6. How many jobs do you plan to apply/did you apply to each month? – <u>please write down the answer</u>. Has this changed over the years?
7. How did you find the job(s) that you had/currently have?
8. What were some of the challenges you experienced when you are/were looking for a job?
9. What have you been doing while you search for a job?
10. Have you ever thought about doing a technical vocational course?
11. What do you think about being self-employed?
12. What do you think about working in the agriculture sector?
13. <u>Write down three skills you think you may need to improve on to increase your chances of finding a job or make you better at your current job</u>.
14. Do you know of any government or donor programmes to help young people develop their skills?
15. Do you know of any government or donor programmes to help young people get employed?

16. If you had to choose to work in one of these sectors: public, private, NGO/Donor or being self-employed, which would you choose and why?

17. What do you think are some of the challenges to youth employment in Sierra Leone?

18. Please complete the table, then we will discuss.

19. If you were in charge of making decisions in Sierra Leone, how would you go about addressing some of the challenges related to youth unemployment?

20. What can each of the various actors do to improve employability and job creation for young people?

Government	**Development Partners/Donors**
The private sector	**The education system**
Young people collectively	**Me personally**

APPENDIX 4: INTERVIEW GUIDE – PRIVATE SECTOR COMPANY EXAMPLE

Part 1: General questions

1. Has there been collaborative efforts between your organisation and Government in formulating national policy, legislation or regulation as it relates to employment? If yes, briefly explain
2. Are you aware of any private sector development programmes or employment creation programmes currently taking place in Sierra Leone? If yes, briefly explain
3. Has the organisation worked with the Government on labour market issues? If yes, briefly explain
4. Has the organisation worked with any donors on labour market issues? If yes, briefly explain
5. Has the organisation worked with the Government on private sector development? If yes, briefly explain
6. Has the organisation worked with any donors on private sector development? If yes, briefly explain

Part 2: Organisation specific questions

7. How long has the company been operating in Sierra Leone?
8. How many staff do you employ?
9. Of your total staff employed, how many have a first degree or higher? (answer can be a %)
10. What is the starting salary (gross composite) for an entry-level staff with a university degree?

11. Can you briefly describe the recruitment process for local skilled workers (tertiary-educated)?
12. On average, how many new positions become available in a given year?
13. Do you find it easy or difficult to fill vacancies when they arise?
14. What types of training do you offer new recruits (who are graduates) and for how long are they trained?
15. What are your thoughts on the skills-gap that is said to exist in Sierra Leone at the moment?
16. Do you feel like you are competing with other organisations for skilled labour?
17. Does access to skilled labour affect your organisation? If so, how?
18. What do you think should be priority areas for labour market/ employment reform in Sierra Leone?

APPENDIX 5: LIST OF INTERVIEW PARTICIPANTS

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

Participant number	Role	Activities/Operations	Organisation number	Sector	Date
16	Advisor	Donor/Development Partner	4	Development	13 September 2017
17	Secretary General	Sierra Leone Employers Federation	9	Other	18 September 2017
18	Project Manager	International NGO	10	Development	18 September 2017
19	Labour Officer	Sierra Leone Labour Congress	11	Other	19 September 2017
20	HR Manager	Banking	12	Private	20 September 2017
21	Head HR	Banking	13	Private	21 September 2017
21	CEO	Operations and Services	14	Private	21 September 2017
22	President	Local NGO	16	Development	22 September 2017
22	Lecturer	University of Sierra Leone	17	Other	22 September 2017
23	Field Officer	International NGO	18	Development	22 September 2017
24	HR Manager	Banking	19	Private	22 September 2017
25	Director	International NGO	20	Development	26 September 2017
26	Director	International NGO	21	Development	26 September 2017
26	Director	Consulting services	22	Private	26 September 2017
27	Economist	Donor/Development Partner	23	Development	27 September 2017
28	HR Manager	Logistics	24	Private	29 September 2017
29	Chief Financial Officer	Construction	25	Private	30 September 2017
30	Head	Agriculture	26	Private	30 September 2017

Participant number	Role	Activities/Operations	Organisation number	Sector	Date
31	Managing Director	Recruitment	27	Private	02 October 2017
32	HR Director	Telecommunications	28	Private	03 October 2017
33	HR Manager	Audit Services Sierra Leone	29	Government	03 October 2017
34	Managing Director	Recruitment	30	Private	05 October 2017
35	Advisor	Donor/Development Partner	4	Development	05 October 2017
36	HR Manager	Manufacturing	31	Private	09 October 2017
37	Deputy Manager, HR	Manufacturing	31	Private	09 October 2017
38	Principal Country Economist	Donor/Development Partner	32	Development	11 October 2017
39	Economist	Donor/Development Partner	33	Development	13 October 2017
40	HR Manager	Energy	34	Private	13 October 2017
41	Consultant	Donor/Development Partner	35	Development	21 November 2017
	Head of Department	University of Sierra Leone	17	Other	21 November 2017
42	Founder and CEO	Mining and Construction	36	Private	23 November 2017
43	Human Resource and Corporate Affairs Director	Mining	37	Private	24 November 2017
44	Consultant	Donor/Development Partner	35	Development	04 December 2017
45	Project Officer	Donor/Development Partner	38	Development	04 December 2017
46	Director, Compliance	Corporate Affairs Commission	39	Government	05 December 2017

APPENDIX 6: ONGOING/RECENTLY COMPLETED/PIPELINE PROJECTS AS AT DECEMBER 2017

Donor Organisation	**Programme/Project**	**Collaborator/ Implementer**	**Description**
Main donor projects			
AfDB	Enable Youth	Ministry of Agriculture	Promoting an enabling business environment, skills and entrepreneurship training, and business development support to incentivise entry of young entrepreneurs in the agriculture sector (Interviewee 38, October 11 2017).
	Youth Entrepreneurship and Employment Project (YEEP)	National Youth Commission (NAYCOM)	Promoting youth entrepreneurship by improving youth business skills and enhancing youth employability by empowering the youth with relevant skills for the job market. The project seeks to link education/vocational institutions with the job market, with particular focus on TVET through the TVET Image Campaign (Interviewee 26, September 26 2017; Interviewee 34, October 5 2017; AfDB, 2019).
DFID	Sierra Leone Opportunities for Business Action (SOBA)	Adam Smith International	Focused on market systems related to agriculture and entrepreneurship. Skills-components include up-skilling agro-dealers and training farmers. The dual objective was to boast the income of subsistence farmers as part of the pro-poor agenda (Interviewee 27, September 27 2017; BEAM Exchange, 2018).
	Business Bomba	AFFORD-SL	Supporting entrepreneurship in the agri-business sector (AFFORD-SL, 2019; Interviewee 26, September 26 2017).
EU	Decent Work	LO/FTF Council, DANIDA, SLLC	Promoting the development of more decent employment by focusing on building both skills and capacity among micro entrepreneurs (Interviewee 19, September 19 2017).
	Education Sector Programme	Ministry of Education	This is an education wide programme and includes primary sector and vocational education. Specific to the latter, the aim is to improve management and delivery of TVET (Delegation of the European Union to Sierra Leone, 2017).

BMZ (through GIZ)	Employment Promotion Programme (EPP)	Ministry of Labour	EEP has had three phases. EPP1 and EPP2 were exclusive to agriculture value chain and supported small scale farmers. EPP3 includes a youth capacity development component which trains youths in life-skills and entrepreneurship (Interviewee 6, September 11 2017; Interviewee 7, September 11 2017; Interviewee 35, October 5 2017).
	Mines to Minds	London Mining Limited (LML), Sierra Rutile Ltd	TVET project organised in collaboration with London Mining Limited (Mannah and Gibril, 2012; Condeh, 2013). The focus was on skills development for the mining sector. However, the project collapsed when LML went into administration in 2014 (Interviewee 42, November 23 2017). Phase two of this programme was launched in 2018 in partnership with Sierra Rutile Ltd (GIZ, 2018).
IFAD	Smallholder Commercialisation Programme		The objective is to improve technical skills and access to the market of small-scale farmers (IFAD,2016).
IFC	Business Edge Trainer		Training trainers who then have the capacity to provide appropriate training interventions for micro, small and medium enterprises (Interviewee 31, October 2 2017).
ILO	Quick Impact Employment Creation Project (QIECP)	JICA, World Bank	The QIECP was one project under the UN Joint Vision Programme. The focus was on infrastructure projects. Seven engineers were trained and several staff from the Sierra Leone Road Authority was trained on road construction and maintenance (ILO, 2012 p.2).
JICA	Employment Promotion and Entrepreneurship Support for the Youth	International Organisation for Migration (IOM), Ministry of Youth,	The project commenced in 2019 and aims to contribute to youth and women's empowerment through vocational and entrepreneurship skills training. There is also an on-the-job training component as the project will partner with Sierra Tropical, a juice manufacturing company (IOM, 2019).

UNDP	Business Development Services (BDS)	AFFORD-SL	To support more than 300 existing and start-up businesses to improve their business management skills and performance. Another objective is training business coaches to support micro, small and medium enterprises (Interviewee 3, August 18 2017, Interviewee 4, September 8 2017).
	Youth Employment Empowerment Programme	NAYCOM	The YEEP was developed in response to high levels of youth unemployment and include the Graduate Internship Programme (GIP) and Career Advisory Placement Services (CAPS). Both these programmes target graduates/high skilled youths. Another component relates to agribusiness and training youths to use machinery to improve agricultural production (Interviewee 3, August 18 2017; Interviewee 5, September 8 2017; UNDP, 2012).
World Bank	Youth Employment Support Project (YESP)	IPAU, MOF NaCSA, NGOs (incl: PARD-SL, HELP-SL, ChildFund)	The project aimed to increase access to short-term employment opportunities and improve employability of youths. Skills training components included: (i) improving technical capacity and promoting creation and/or expansion of small youth-owned enterprises (ii) improving skills of young people to make them more employable – skills under the project referred to life skills, vocational skills, and business skills (World Bank, 2015).
	Skills Development Project	Ministry of Technical and Higher Education, Ministry of Finance	Focuses on TVET and entrepreneurship, with a strong emphasis on gender. Indicators include: number of people successfully completing demand-led skills upgrading programmes, number of people completing TVET skills training, number of TVET participating programmes that reach the milestone of 65 percent of graduates in productive employment after one year of completing the training programme, and number of trained people who are either employed by companies/businesses or in self-employed (World Bank, 2019, Interviewee 34, October 5 2017; Interviewee 39, October 13 2017).

NGO managed projects with multiple donor funding (including private donations)			
EU, UNDP, UNESCO, Government of Finland, US State Department, Bureau of Peace, Open Society Initiative	Various	Centre for the Coordination of Youth Activities (CCYA)	Offers various TVET skills training course. In the past, CCYA have been contracted by the mining companies (AML and LML) to provide skills training for the mining sector (Interviewee 15, September 13 2017).
Turing Foundation	Sustainable Skills and Empowerment Project	Christian Aid	The project aims to improve young peoples' lives by providing vocational training. Training entails basic skills related to entrepreneurship, small-scale business management, communication and partnership-building skills (Christian Aid, 2019).
UNDP, GIZ, AfDB	Various	Global Youth Network	Have been contracted by the Ministry of Youth to conduct trainings on project management, project design, entrepreneurship, civic education and governance. GYN has also done training on basic computer skills and CV writing for graduates to improve their employability (Interviewee 26, September 26 2017).
Small international donors.	Various	Sierra Leone Grass Roots Agency (SLGRA)	SLGRA run training centres (based on donor priorities) on vocational skills such as carpentry and tailoring (Interviewee 13, September 12 2017).

Comic Relief UK, among others		Sierra Leone YMCA	YMCA has a youth focus with an emphasis on livelihood and entrepreneurship. Their current TVET programme aims to benefit youths in Freetown. There are two components: vocational skills development and entrepreneurship. Participants also get start-up kits. For example, a mechanic will get tools. Tailors might get a sewing machine (Interviewee 18, September 18 2017). There is also a skills training centre in Kenema. Courses provided include bricklaying, agriculture, tailoring, carpentry (Sierra Leone YMCA, 2019).

Sources: Interviews, donor websites, donor reports.

APPENDIX 7: POWER CALCULATIONS

Observing the differences between variables of those opting for the public versus development sector in Table 4.6 of the main document, some of the differences (for ability, prosociality and status) are significant at the 10 percent level only. I therefore use Stata to estimate the total sample size needed to identify an effect or statistically significant difference between means at the 5 percent level for measured latent traits and ability. The estimates are given in Table A1, which show the estimated total sample size for a two sample means test with unequal variances. The null hypothesis of the test is that the group means are equal, and the alternative is that they are not equal. The means and standard deviations for measured cognitive ability, financial motivations, prosociality, desired status and time and risk preferences used in the calculations are taken from Table 4.4.

Table A1: Sample size needed to determine differences in means between respondents opting for the public versus development sector with 70, 80 and 90 percent power

Variable	Estimated sample size		
	$\beta = 0.7$	$\beta = 0.8$	$\beta = 0.9$
Cognitive ability	8	10	12
Reservation wage	75,420	95,910	128,396
Prosociality	8	10	12
Desired status	8	8	10
Present bias	15	19	23
Risk preference	47	58	77

For all variables except financial motivation (proxied by the reservation wage) the required sample size is relatively very small in comparison to the actual sample size of 392. In other words, the differences in means for all variables save for financial motivation can be detected with small sample sizes, if those differences exist. The study is therefore powered to determine these effects, but not necessarily effects for financial motivations.

APPENDIX 8: ITEM RESPONSE THEORY (IRT)

Item Response Theory (IRT) has been widely used in psychology research to analyse cognitive tests. These tests lead to binary scales as answers are scored 1 if they are correct or 0 otherwise. With IRT, the probability of a positive response (or correct answer) for a highly discriminating question increases with the latent trait (Baker, 2001). Scores for a particular latent trait vary based on the difficulty of the questions and the ability of members of the group, which in turn varies from group to group. Scores are therefore bounded between minimum and maximum values that are group dependent, and not simply an interval scale that considers the minimum and maximum scores attainable (Stata, 2017). Maximum likelihood estimation is used to produce the desired scale.

In order to use IRT, the following assumptions were made:

i. Monotonicity: The probability of a respondent answering an item correctly increases as the latent trait increases. For example, with the Raven's matrices, respondents with higher ability are assumed to have a higher probability of getting the correct answers. Monotonicity is characterised by an upward sloping item information curve.

ii. Uni-dimensionality: Raven's matrices were designed to measure cognitive ability. The questions are therefore narrowly defined to measure these single constructs. Raven's matrices do not require specific language, reading or writing skills; and questions were presented pictorially and also read out to the respondent. This mitigates other latent traits being unintentionally measured. The results can therefore be represented on a single number line in a one-dimensional space for the measured construct.

iii. Invariance: The level of each individual's traits is independent of the items administered and the sample of people. This general assumption allows linking scales that measure the same construct, for instance IQ tests.

iv. Local independence: Each item response is independent conditional on the latent trait. In other words, after controlling for the latent trait, the correlation between items should be zero. This was factored into the questionnaire design.

v. Qualitatively homogeneous populations: The same Item Response Function (IRF) applies to all members of the population. The IRF relates the latent trait to the probability of selecting an item.

Table A2: Data excerpt showing Raven's matrices scores

Respondent	Responses (0 = incorrect; 1 = correct)									
	r1	r2	r3	r4	r5	r6	r7	r8	r9	r10
1	1	0	0	0	0	0	0	0	0	0
2	1	1	0	0	0	0	1	0	1	0
3	1	1	0	0	1	1	1	1	0	0
4	1	0	1	0	0	1	0	0	1	0
5	1	0	1	0	0	0	0	0	0	0

In Table A2 above, individual 2 and individual 4 have answered four questions correctly. If we summed scores, both these individuals would have the same total score. However, this does not consider the difficulty of the questions, which affects the probability of obtaining a correct response, given ability. Different questions are likely to also have different discrimination parameters, making them more or less able to identify the latent trait. In addition to the difficulty and discrimination of a test item, a third parameter which becomes relevant in multiple choice cognitive tests is the possibility of guessing, which can also affect scores. A three-parameter logistic (3PL) model is used for estimation. In the 3PL model, each question (or item) vary in its difficulty and discrimination; and the possibility of guessing is allowed (Stata, 2017).

Nine questions are analysed to estimate each respondent's cognitive ability (theta). Ten questions were administered, but the tenth question was associated with a negative discriminating coefficient. This implies that the probability of correctly answering that decreases with ability, violating the monotonicity assumption. Potential reasons for this may that be that lower ability respondents are guessing correctly, or that higher ability respondents are justifying an incorrect answer. Figure A1 below show the item characteristic curves (ICC) for the nine questions used. Question 1 and 7 are highly discriminating questions, but at different ability levels (theta).

Figure A1: Item Characteristic Curves for Raven's Matrices

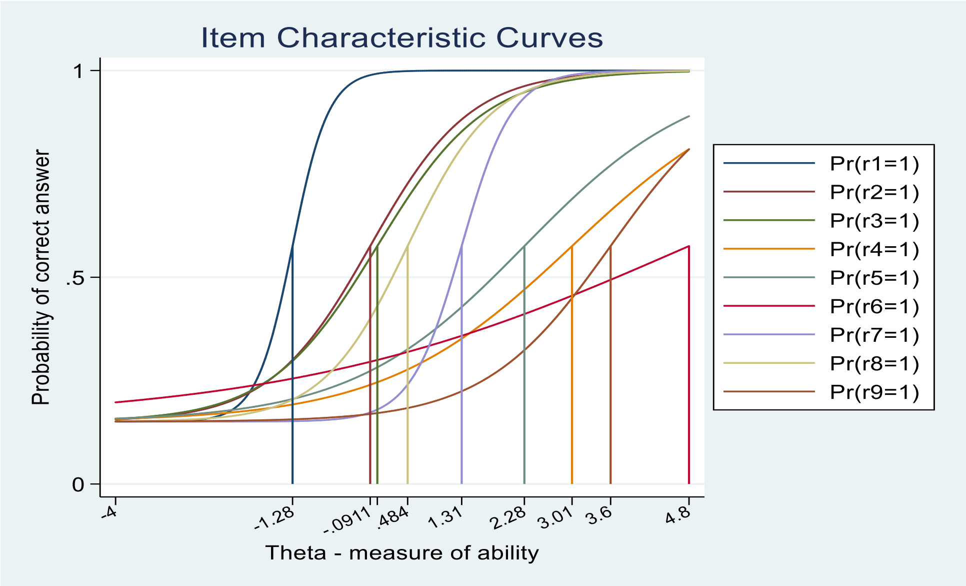


Figure A2 provides information on the level of discrimination (Discrim) and difficulty (Diff) for each question, and the pseudo-guessing parameter which is assumed constant for all questions. On average, even for less able students, there is a 15 percent change of guessing the correct answer for any question. From the second part of Figure A2, question r1 is the easiest question and r6 is the most difficult. For the overall test, we expect that a student with average ability to score 3.76 out of 9. Such a low score is evidence of the quality of schooling in least developed countries like Sierra Leone (UNESCO, 2013).[61] The questions selected for the study were similar to those administered to 8th graders (13-14 years) in the United States. Using the 95 percent critical values from the standard normal distribution (-1.96 and 1.96), Figure A3 plots the expected range between which a randomly selected 95 percent of the respondents will score. This is 1.73 to 6.28. Finally, using Bayesian methods, the estimate of the latent trait (cognitive ability) can be predicted for each

[61] According to UNESCO: *"The crisis in quality learning is evident. Despite increased enrolments, an estimated 250 million children cannot read, write or count well, whether they have been to school or not. Across the world, 200 million young people leave school without the skills they need to thrive plus an estimated 775 million adults – 64 percent of whom are women – still lack the most basic reading and writing skills.*" (UNESCO 2013, p.2).

respondent. The mean ability for the sample is -0.0015 (just below average), with a standard deviation of 0.7646, and a range of -1.657 to 1.9334. These predictions are used in the Multinomial Probit regression model a measure of student ability.

Figure A2: Stata results of 3PL IRT model

Three-parameter logistic model Number of obs = 392
Log likelihood = -2001.7357

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Discrim						
r1	3.625522	2.061743	1.76	0.079	-.4154206	7.666464
r2	1.296408	.3415053	3.80	0.000	.6270702	1.965746
r3	1.204179	.3133222	3.84	0.000	.5900787	1.818279
r8	1.528631	.4742722	3.22	0.001	.5990749	2.458188
r7	2.576916	2.167284	1.19	0.234	-1.670883	6.824715
r5	.7520061	.3046157	2.47	0.014	.1549703	1.349042
r4	.6921043	.4393234	1.58	0.115	-.1689538	1.553162
r9	1.031125	.885478	1.16	0.244	-.7043797	2.76663
r6	.3232951	.2883657	1.12	0.262	-.2418912	.8884815
Diff						
r1	-1.282913	.1617059	-7.93	0.000	-1.59985	-.9659748
r2	-.0911081	.1466404	-0.62	0.534	-.378518	.1963019
r3	.0181096	.1522277	0.12	0.905	-.2802512	.3164704
r8	.4835222	.1521332	3.18	0.001	.1853466	.7816979
r7	1.313326	.2405803	5.46	0.000	.8417972	1.784855
r5	2.27607	.7839658	2.90	0.004	.7395258	3.812615
r4	3.007766	1.365272	2.20	0.028	.3318821	5.683649
r9	3.59956	2.163541	1.66	0.096	-.6409016	7.840022
r6	4.803218	3.879682	1.24	0.216	-2.800819	12.40725
Guess	.1508851	.0336625	4.48	0.000	.0849079	.2168623

Figure A3: Test Characteristic Curves for Raven's Matrices

APPENDIX 9: MULTIPLE CORRESPONDENCE ANALYSIS (MCA)

Principal component analysis (PCA) is a method by which input variables are combined in a special way so as to retain the most valuable component of all the independent variables (Abdi and Williams, 2010). Correspondence Analysis is a generalisation of PCA; and is used for categorical rather than continuous variables (Le Roux and Rouanet, 2010). Multiple Correspondence Analysis (MCA) is used for multiple categorical variables, a furtherance to correspondence analysis, which is used for two categorical variables. The basic set up for MCA (from which other more sophisticated analysis is done) is an *i* times *j* table (a complete disjunctive table), where *i* rows represent the number of individuals and *j* columns represent the number of categories (or survey questions). MCA allows us to determine inter-individual variability by comparing individuals (rows) and determine if they are similar or different depending on if they are in a similar set of categories (columns).

In this study, MCA is applied to a subset categorical question measuring respondents' opinions on wages, stability, status, contribution to society, career progression and opportunities for training across each sector. In this case, MCA is useful for reducing the ratings for each sector across different dimensions, into one composite score or index per sector. In itself, the stability or financial remuneration of a sector is not sufficient for a jobseeker to choose that sector. Rather, it is a combination of various characteristics which may be highly ranked or poorly ranked. MCA is one of the most common techniques used to summarise the original structure of multiple categorical variables into one composite variable. Abdi and Williams (2010, p.434) discusses four goals of PCA (and by extension MCA) as: (i) extracting the most important information, (ii) compressing the data without losing important information, (iii) simplifying the data and (iv) analysing the structure of variables in the dataset. In achieving these goals, the MCA method calculates new variables (principal components) which are linear combinations of the original variables. Each component is orthogonal to the one preceding it.

There are 24 response categories in total (6 questions multiply by 4 options). Table A3 provides and extract of this. A row illustrates the response pattern for a given individual. For instance, respondent 160 ranked the public sector fourth for salary, first for status, second for contribution to society, fourth for stability and third for training and career progression. The full data table comprised *i*=392 rows for the total number of individuals and *q*=6 columns for the number of questions. From the data, we can extract category and individual clouds. Using category clouds, MCA allows also us to evaluate how linked/associated various categories are to each other.

Table A3: Data extract of sector rankings by characteristic

id	Wages	Status	Contribution to society	Stability	Training	Career progression
160	4	1	2	4	3	3
161	4	3	1	2	2	2
162	3	1	1	1	4	4
163	4	1	2	2	2	2
164	1	1	1	1	1	1

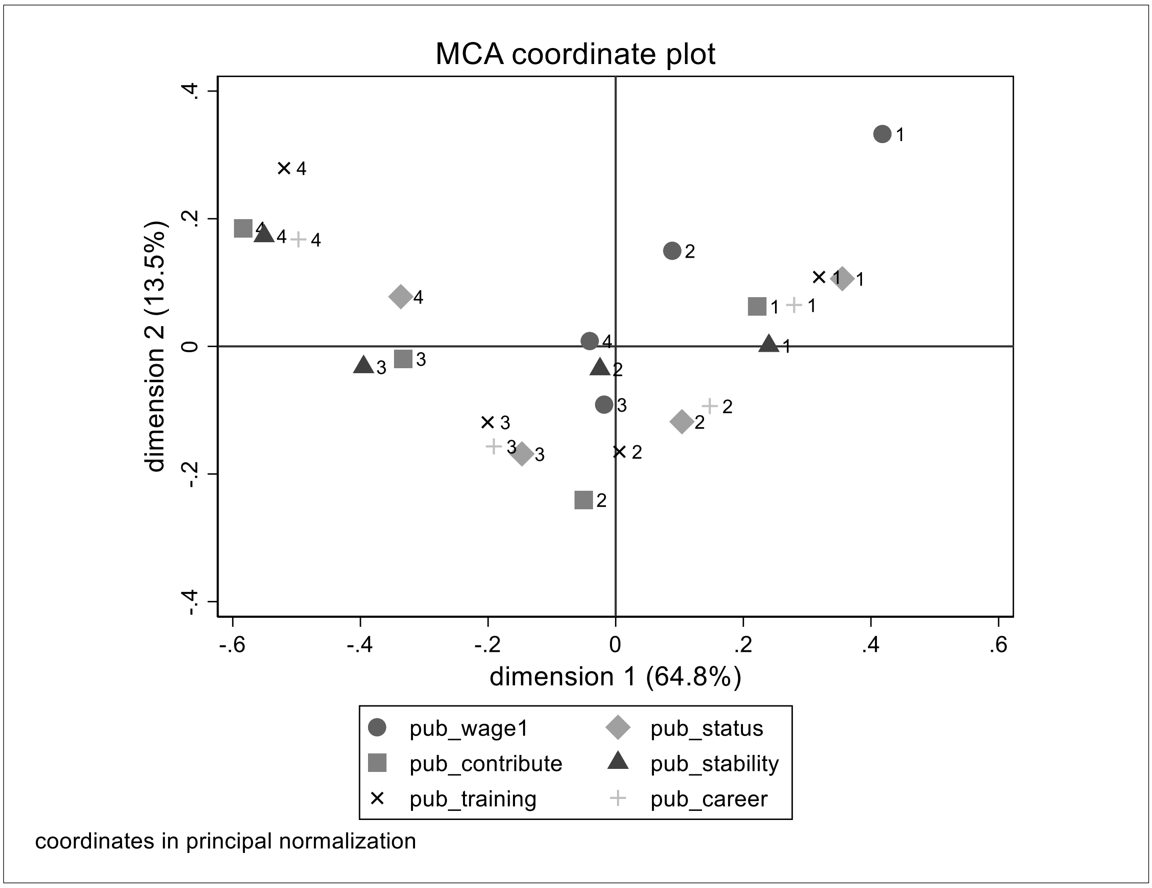
A two-dimensional category cloud is shown in Figure A4, where points are derived from the means of the individual coordinates for each respondent. The first and second principal axes accounts for 64.8 percent and 13.5 percent variation (referred to as inertia in MCA) in the cloud respectively and are therefore the main axes for analysis. The total number of possible dimensions is determined by the number of categories, less the number of questions – 18 in this case.[62] From Figure A5, we can also see that the first two dimensions accounts for 78.3 percent of the variation. The rule of thumb in deciding the cut-off point for the number of dimensions is the "elbow test" (Adbi and Williams, 2010). The Scree plot shows the bend in the elbow at 2 (Figure A6), which allows us to stop in the two-dimensional space.

The axes are interpreted based on similarities in the data points (Le Roux and Rouanet, 2010). To the right of the Figure A4 shows more favourable rankings i.e. 1s and 2s, and to the left shows less favourable rankings. The top half are more "extreme" rankings 1s and 4s, and at the bottom, more

[62] The first 8 dimensions account for 88.85 percent of the variation as shown in Figure A5, and the remaining 10 dimension not shown account for the other 11.15 percent.

moderate rankings (2s and 3s). The public sector is perceived in a similar way for training and career progression. There are similar patterns for contribution to society and stability as well. Wages follow a completely different pattern to the other variables. A category cloud can be plotted for each sector.

Figure A4: MCA plot of category cloud (for the public sector)



The second types of clouds, individual clouds, can be used to determine how different individuals are from each other. The distance between individuals is determined by their choice of different categories for a given question. For example, in Table A3 above, respondents 160 and 161 are similar in their ranking of wages in the public sector; but are in different categories for the other questions. These differences are used to calculate the distances between individuals in the cloud space.[63] An individual cloud plotted in the two most import dimensions is shown in Figure A7.

[63] If the disagreement categories have small frequencies and are therefore rare choices, distance between individuals will be greater.

The plot displays the characteristic “horseshoe” shape or “Guttman-effect” which is common for preference data. Four individuals from each segment has been highlighted to aid explanations. The raw data for each individual is shown in Table A4. Both respondent 382 and 388 rank the public sector favourably and are to the right of the red line vertical line. Respondent 382 is more extreme in his/her inclination to the public sector and is therefore above the red horizontal line. Similar interpretation can be made for respondents 237 and 323 with respect to dislike of the public sector. The individual clouds allow us to measure distances between individuals. Post estimation in Stata gives predicted scores for each individual. This is used as a composite score for the individual perception/ranking of the public sector. Similar methods are used to obtain measures for the other three sectors.

Figure A5: Stata results of MCA model

```
Multiple/Joint correspondence analysis        Number of obs     =        392
                                              Total inertia     =   .1043993
    Method: Burt/adjusted inertias            Number of axes    =          2
```

Dimension	principal inertia	percent	cumul percent
dim 1	.0676906	64.84	64.84
dim 2	.0140787	13.49	78.32
dim 3	.0051084	4.89	83.22
dim 4	.0009014	0.86	84.08
dim 5	.0006324	0.61	84.69
dim 6	.0001089	0.10	84.79
dim 7	.000048	0.05	84.84
dim 8	.0000104	0.01	84.85
Total	.1043993	100.00	

Table A4: Data extract of public sector rankings by characteristic based on outlying values

id	Quadrant	Wages	Status	Contribution to society	Stability	Training	Career progression
382	Top right	4	1	1	1	1	1
388	Bottom right	2	2	2	1	4	2
237	Bottom left	4	3	2	3	3	3
328	Top left	3	4	4	4	4	4

Figure A6: Screeplot of principal intertias/variability

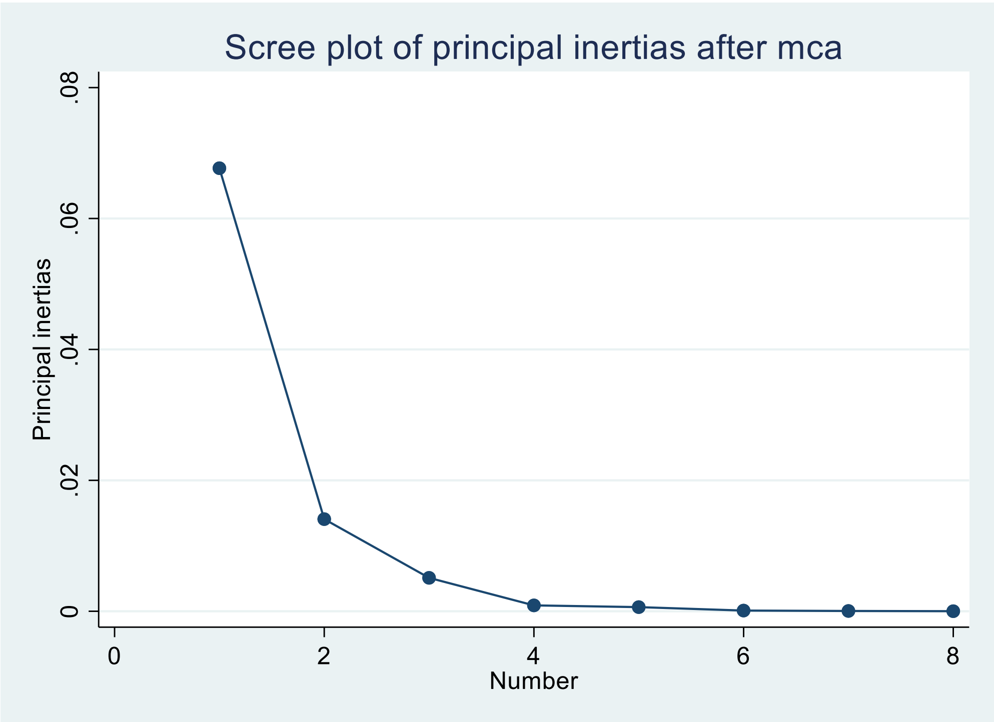
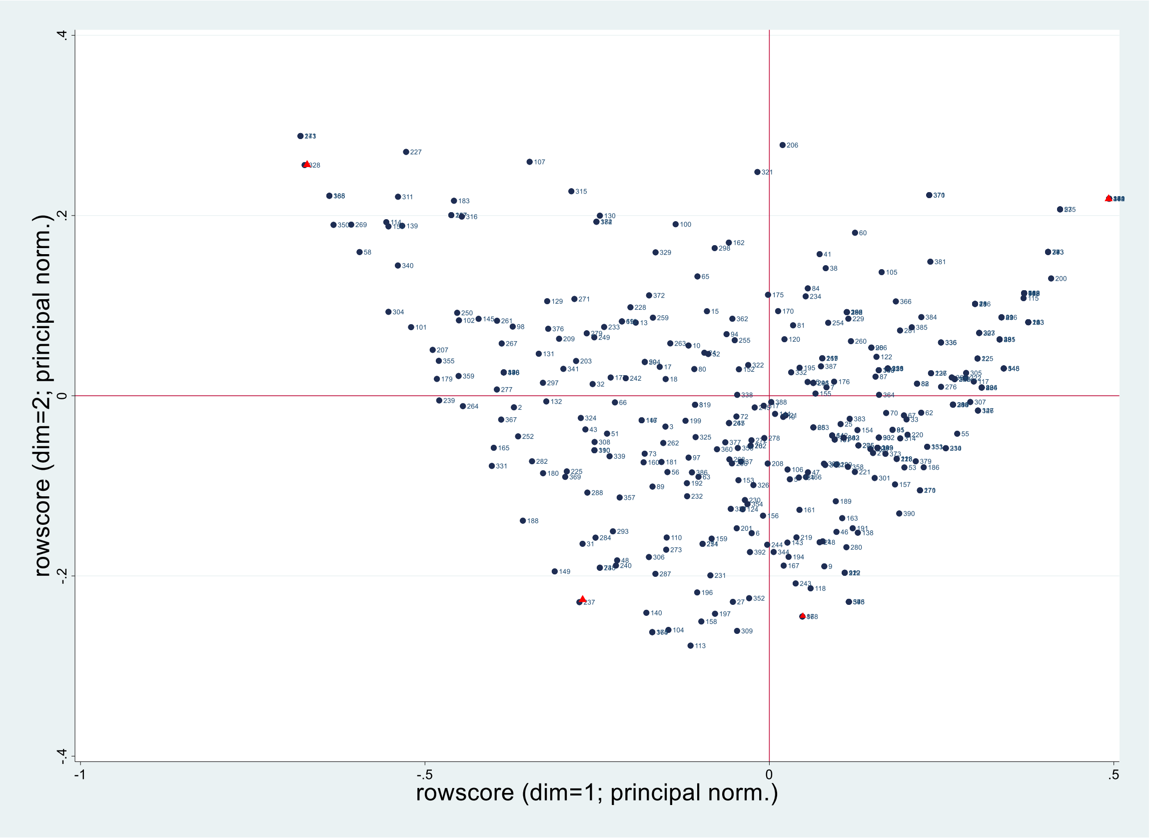


Figure A7: MCA plot of individual clouds



APPENDIX 10: EXPERIMENTAL GAMES, RAVEN MATRICES AND MCARTHUR'S COMMUNITY LADDERS

Game #1 – Risk Preferences

Imagine that you have graduated, and you are looking for a job. You have one high paying option, but only 50% chance of getting this job (imagine the employer tosses a coin to decide if you get the job). Both jobs are the same except for the salary and the certainty of getting the job. I will show/explain to you a series of choice. Please pick the one you would choose.[64]

	Job 1 – variable income	**Job 2 – certain income**	**Choice**
a	50% of nothing 50% chance of SLL 5 million	SLL 0.5 million certain	□ Job 1 □ Job 2
b	50% of nothing 50% chance of SLL 5 million	SLL 1 million certain	□ Job 1 □ Job 2
c	50% of nothing 50% chance of SLL 5 million	SLL 1.5 million certain	□ Job 1 □ Job 2
d	50% of nothing 50% chance of SLL 5 million	SLL 2 million certain	□ Job 1 □ Job 2
e	50% of nothing 50% chance of SLL 5 million	SLL 2.5 million certain	□ Job 1 □ Job 2
f	50% of nothing 50% chance of SLL 5 million	SLL 3 million certain	□ Job 1 □ Job 2
g	50% of nothing 50% chance of SLL 5 million	SLL 3.5 million certain	□ Job 1 □ Job 2
h	50% of nothing 50% chance of SLL 5 million	SLL 4 million certain	□ Job 1 □ Job 2
i	50% of nothing and 50% chance of SLL 5 million	SLL 4.5 million certain	□ Job 1 □ Job 2

[64] In the actual survey, each choice of two appear individually. The software can prevent inconsistent answers by skipping to the next question as soon as an option is selected.

Game #2 – Time

Imagine that I am compensating you for taking part in this game. You can have your money today, or in seven days' time. You can bring payment forward, but it would mean accepting less money. Would you accept?[65]

Read as SLL10,000 or SLL100,000 in seven days, etc.

Option	Today	Seven days from Today	Choice
a	SLL 10,000	SLL 100,000	□ Today □ Seven days time
b	SLL 20,000	SLL 100,000	□ Today □ Seven days time
c	SLL 30,000	SLL 100,000	□ Today □ Seven days time
d	SLL 40,000	SLL 100,000	□ Today □ Seven days time
e	SLL 50,000	SLL 100,000	□ Today □ Seven days time
f	SLL 60,000	SLL 100,000	□ Today □ Seven days time
g	SLL 70,000	SLL 100,000	□ Today □ Seven days time
h	SLL 80,000	SLL 100,000	□ Today □ Seven days time
i	SLL 90,000	SLL 100,000	□ Today □ Seven days time

[65] In the actual survey, each choice of two appear individually. The software can prevent inconsistent answers by skipping to the next question as soon as "today" is selected.

Game #3 – Social Value Orientation Game

Imagine that you are taking part in a game with someone you have never met before. We will call the person X. You can choose one outcome of the game. The choice you make, determines the amount of Leones you receive, as well as the amount person X receives. The more you get the better for you, the more X gets, the better for them as well. Figures are in millions of Leones.

Read out each of the options as "or" choices. Only one should option should be selected. Tick the box corresponding to the option chosen.

You	Person X	Choice
3.5	3.5	□
4.0	1.0	□
4.0	2.0	□

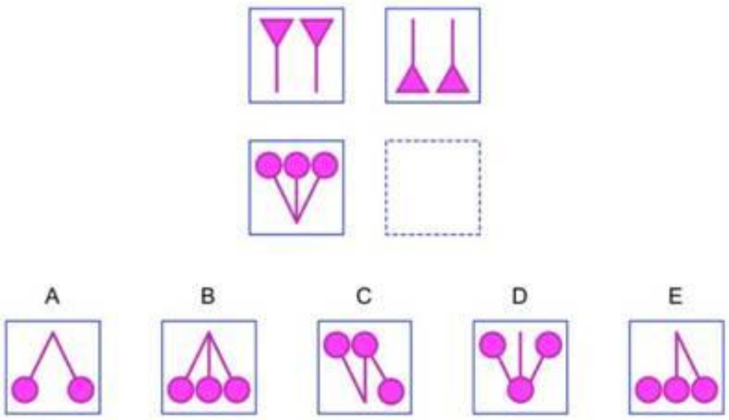
Game #4 – Dictator Game

Now imagine that you have earn SLL100,000 for taking part in this research. You meet someone who has not been fortunate enough to take part in this research. You can give them some of your money. The more you give to the then better off they are, but the less you will have. How much would you give to them, if any? ______________________________________. The amount that you are left after making a gift (if you choose to make a gift) will determine your payoff if your roll a 4 on the die and this game is selected for your compensation.

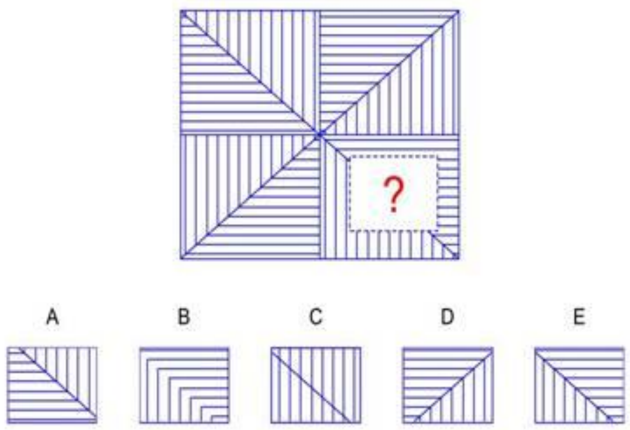
Game #5 – Raven Matrices

I will present you with 10 questions. For each question you answer correctly, you have a chance of winning SLL5,000 if this game is rolled on the die. (i.e. you roll a 5). Read the instructions carefully, then select the answer which you think is correct.[66]

a. Look at the pictures in the top two boxes. Which picture goes with the picture on the bottom row the same way the pictures in the top row go together?

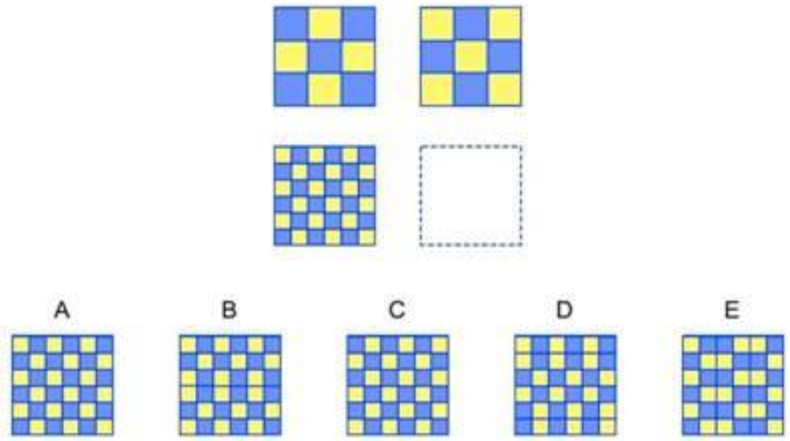


b. Look at this puzzle. Which is the missing piece?

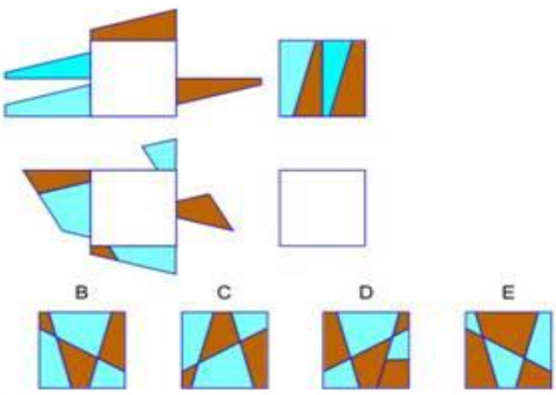


[66] Practice questions were given before, but they have not been reproduced here.

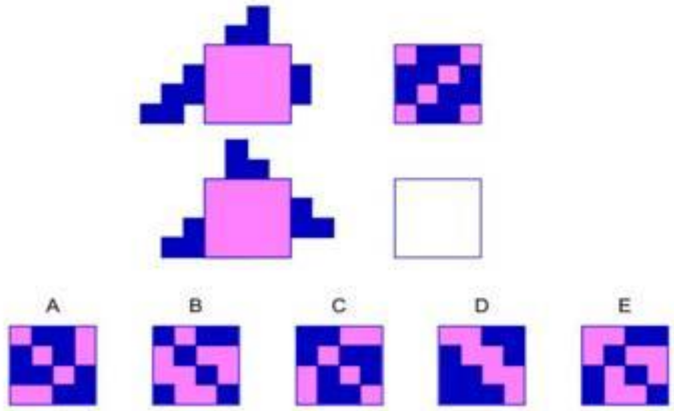
c. Look at the squares on top. They go together in a certain way. Chose the square from the options below that belongs in the set.



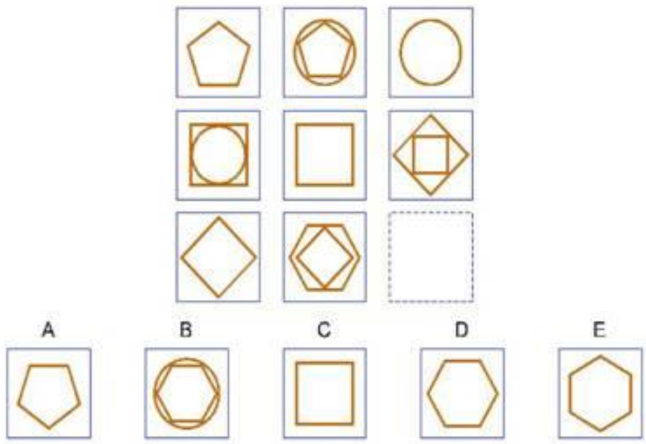
d. Look at the pictures on top. When the outside pieces of the first square are folded in, it will look like the picture on the top right. Which of the options will you get if you fold in the pieces on the bottom left?



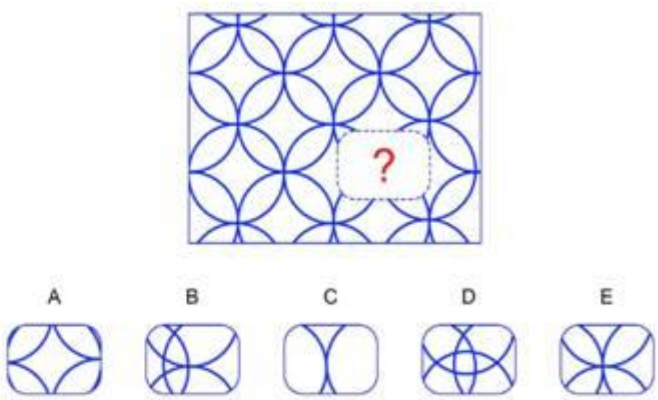
e. Look at the pictures on top. When the outside pieces of the first square are folded in, it will look like the picture on the top right. Which of the options will you get if you fold in the pieces on the bottom left?



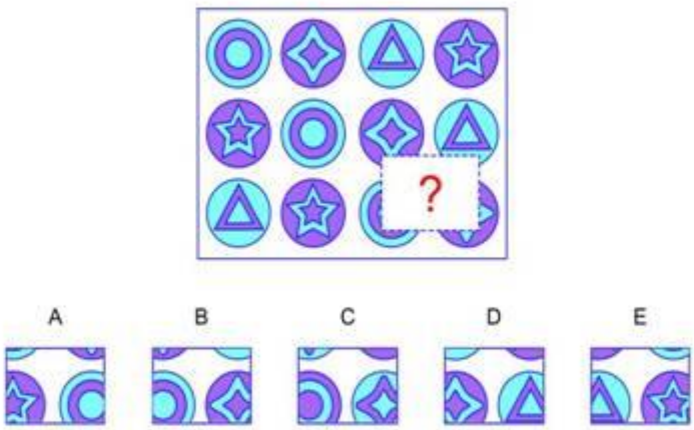
f. Look at this puzzle. Something is missing. Which of these answer choices goes here completes the puzzle?



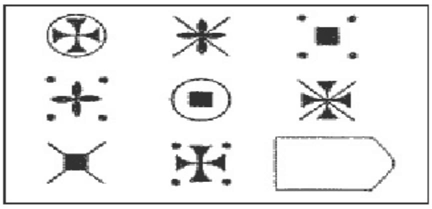
g. Look at the pattern on top. A piece has been taken out of it. Choose the piece below the pattern that goes where the question mark is in order to complete the pattern.

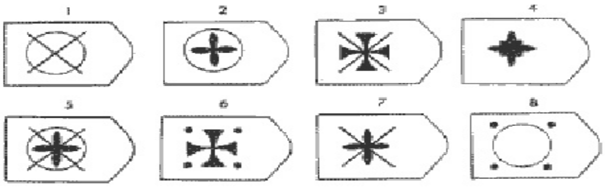


h. A piece has been taken out of it. Which of the options completes the pattern?

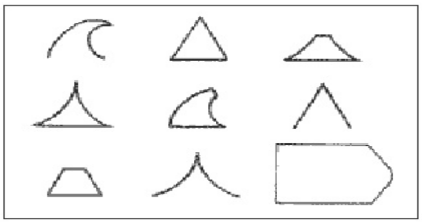


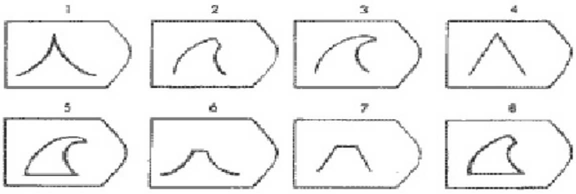
i. Which of the eight option completes the sequence?





j. Which of the eight option completes the sequence?





McArther's Community Ladder – Measurre of Subjective Social Status

Below is a ladder. Think of this ladder as representing where people stand in society. At the top of the ladder are people who are most respected, have the most reputable jobs, and enjoy the most social privileges such as preferential access to some services. The people at the top are not necessarily the richest, but they have significant social respect and privileges. You can imagine a member of the Cabinet at the top. At the bottom are those who are least respected, have the least reputable jobs, and have the least social privileges and little/no preferential access to services. The people at the bottom are not necessarily the poorest, but have the least social respect and privileges. You can imagine a petty trader who sells voucher-top-up at the bottom. The higher up you are, the closer you are to people at the top. The lower you are on the ladder, the closer you are to people on the bottom.

21.1 Place an "X" on the rung where you think you stand at this time in your life, relative to other people in Sierra Leone.

21.2 What type of job would you like when you graduate? ______________________________

21.3 Which type of organisation do you imagine working for? __________________________

21.4 Thinking of this job, place an "X" on the rung where will you like to be in five years' time, relative to other people in Sierra Leone.

APPENDIX 11: DERIVATIONS - THE JOBSEEKER MODEL

The expected payoffs for applying and not applying are given below.

$$apply = \beta\gamma^i(w-a) + \beta(1-\gamma^i)(\overline{w}^i - a) + (1-\beta)\upsilon\gamma^i(w-a) +$$

$$(1-\beta)(1-\upsilon\gamma^i)(\overline{w}^i - a)$$

$$do\ not\ apply = \overline{w}^i$$

Applying this condition, the candidate applies if:

$$\beta\gamma^i(w-a) + \beta(1-\gamma^i)(\overline{w}^i - a) + \upsilon\gamma^i(1-\beta)(w-a) + (1-\beta)(1-\upsilon\gamma^i)\,(\overline{w}^i - a) > \overline{w}^i$$

$$\beta\left[\gamma^i w - \gamma^i a + \overline{w}^i - a - \gamma^i\overline{w}^i + \gamma^i a - \upsilon\gamma^i w + \upsilon\gamma^i a - \overline{w}^i + a + \upsilon\gamma^i\overline{w}^i - \upsilon\gamma^i a\right] + \upsilon\gamma^i w$$
$$- \upsilon\gamma^i a + \overline{w}^i - a - \upsilon\gamma^i\overline{w}^i + \upsilon\gamma^i a > \overline{w}^i$$

$$\beta\left[\gamma^i w - \gamma^i\overline{w}^i - \upsilon\gamma^i w + \upsilon\gamma^i\overline{w}^i\right] + \upsilon\gamma^i w + \overline{w}^i - a - \upsilon\gamma^i\overline{w}^i > \overline{w}^i$$

$$\beta > \frac{a - \upsilon\gamma^i w + \upsilon\gamma^i\overline{w}^i}{\gamma^i w - \gamma^i\overline{w}^i - \upsilon\gamma^i w + \upsilon\gamma^i\overline{w}^i)}$$

$$\beta > \frac{a - \upsilon\gamma^i(w-\overline{w}^i)}{\gamma^i(w-\overline{w}^i) - \upsilon\gamma^i(w-\overline{w}^i)} = \beta^*$$

Taking $\beta^* = \frac{a-\upsilon\gamma^i(w-\overline{w}^i)}{\gamma^i(w-\overline{w}^i)-\upsilon\gamma^i(w-\overline{w}^i)} = \frac{U}{V}$ and $|U| \leq |V|$ since $0 \leq \beta \leq 1$

$$\frac{\partial\beta^*}{\partial a} = \frac{1}{\gamma^i(w-\overline{w}^i) - \upsilon\gamma^i(w-\overline{w}^i)}$$

$$\frac{\partial\beta^*}{\partial a} = \frac{1}{(\gamma^i - \upsilon\gamma^i)(w-\overline{w}^i)}$$

Both the numerator and denominator are positive. This means that as the cost of applying increases, unconnected jobseekers require a larger share of fair firms in the market to apply for vacancies.

$$\frac{\partial \beta^*}{\partial w} = \frac{-\upsilon\gamma^i V - (\gamma^i - \upsilon\gamma^i)U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial w} = \frac{-\upsilon\gamma^i\left[\gamma^i\left(w - \overline{w}^i\right) - \upsilon\gamma^i(w - \overline{w}^i)\right] - (\gamma^i - \upsilon\gamma^i)\left[a - \upsilon\gamma^i(w - \overline{w}^i)\right]}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial w} = \frac{\upsilon\gamma^i[a - \gamma^i\left(w - \overline{w}^i\right)] - \gamma^i[a - \upsilon\gamma^i\left(w - \overline{w}^i\right)]}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial w} = \frac{\upsilon\gamma^i a - \upsilon{\gamma^i}^2\left(w - \overline{w}^i\right) - \gamma^i a + \upsilon{\gamma^i}^2\left(w - \overline{w}^i\right)}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial w} = \frac{\upsilon\gamma^i a - \gamma^i a}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial w} = \frac{\left(\upsilon\gamma^i - \gamma^i\right)a}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

The denominator is positive, and the numerator is negative. The derivative is therefore negative. This means that as the wage rate decreases, the unconnected jobseeker will desire a greater share of fair firms in the labour market to incentivise job applications.

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{\upsilon\gamma^i V - (\upsilon\gamma^i - \gamma^i)U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{\upsilon\gamma^i\left[\gamma^i\left(w - \overline{w}^i\right) - \upsilon\gamma^i\left(w - \overline{w}^i\right) - \ a + \upsilon\gamma^i\left(w - \overline{w}^i\right)\right] + \gamma^i U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{\upsilon\gamma^i\left[\gamma^i\left(w - \overline{w}^i\right) - \ a\right] + \gamma^i[a - \upsilon\gamma^i\left(w - \overline{w}^i\right)]}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{\upsilon{\gamma^i}^2\left(w - \overline{w}^i\right) - \upsilon\gamma^i a + \gamma^i a - \upsilon{\gamma^i}^2\left(w - \overline{w}^i\right)}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{-\upsilon\gamma^i a + \gamma^i a}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \overline{w}^i} = \frac{(\gamma^i - \upsilon\gamma^i)a}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

Both the numerator and denominator are positive. In words, as the reservation wage increases, a larger share of fair firms will be needed to incentivise applications.

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{-\upsilon(w - \overline{w}^i)V - [(w - \overline{w}^i) - \upsilon(w - \overline{w}^i)]U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{\upsilon(w - \overline{w}^i)(U - V) - (w - \overline{w}^i)U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{\upsilon(w - \overline{w}^i)[\, a - \upsilon\gamma^i(w - \overline{w}^i) - \gamma^i(w - \overline{w}^i) + \upsilon\gamma^i(w - \overline{w}^i)] - (w - \overline{w}^i)U}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{\upsilon(w - \overline{w}^i)[\, a - \gamma^i(w - \overline{w}^i)] - (w - \overline{w}^i)[a - \upsilon\gamma^i(w - \overline{w}^i)]}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{\upsilon a(w - \overline{w}^i) - (w - \overline{w}^i)a}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

$$\frac{\partial \beta^*}{\partial \gamma^i} = \frac{(\upsilon a - a)(w - \overline{w}^i)}{[\gamma^i(w - \overline{w}^i) - \upsilon\gamma^i(w - \overline{w}^i)]^2}$$

Here the denominator is positive, and the numerator is negative. The derivative is therefore negative. This means that as the share of fair firms decreases only higher ability applicants will apply.

APPENDIX 12: SEARCH EXPERIENCE OF EMPLOYED RESPONDENTS

Sector of current employment	Connected to organisation before applying	Degree	No. of jobs applied to	No. of jobs held before current job	Time between application and offer	Graduation year
Local NGO	Yes	Adult Education	6	0	0	2017
Local NGO	Yes	Adult Education	0	2	0	2017
Local NGO	Yes	Business Administration	1	1	3	2018
Local NGO	No	Accounting	countless	2	1	2014
Local NGO	No	Economics	at least 10	4	1	2014
INGO	No	Accounting	many	2	N/A	2015
INGO	No	Economics	Lots. I lost count	1	0	2016
Donor	No	Finance	20	3	1	2018
Private	Yes	Accounting	10	1	1	2013
Private	Yes	Economics	3	0	0	2014
Private	Yes	Economics	20	2	3	2015
Private	Yes	Marketing	N/A	1	1	2012
Private Tertiary Edu Institution	Yes	Arts	3	5	1	2015
Private	No	Accounting	10	1	2	2017
Private	No	Economics	5	1	N/A	2017
Private	No	Business Administration	2	1	2	2016
Private	No	Economics	31	0	3	2015
Private	No	Business and Info Tech	5	0	12	2016
Private Tertiary Edu Institution	No	Arts	28	1	8	2015
Public	Yes	Accounting	0	0	0	2012
Public	Yes	Accounting	0	1	0	2012
Public	Yes	Accounting	3	2	12	2011
Public	Yes	Accounting	many	4	12	2011
Public	Yes	Economics	1	0	3	2015
Public	No	Arts	10	1	12	2006
Public	No	Education	10	1	12	2010
Public	No	Economics	50	2	9	2015
Public	No	Electrical and Electronics Engineering	4	3	12	2014
Public	No	Political Science	12	5	11	N/A
Government Tertiary Edu Institution	No	Philosophy	4	1	6	2014

Data source: Employed focus group participants