

Final report

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# Preferences or possibilities? Understanding the Labour Supply Decision in a LIC Context

Jamelia Harris\*

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## Abstract

This paper explores occupational choice of skilled workers in Sierra Leone. In so doing, the paper explores the validity of matching models in a LIC-context, the role of ability in sorting across sectors, and the importance of perceptions in the employment decision-making process. Crucial to the paper is the introduction of the development sector as a 'third sector', which is shown to be attractive to skilled job-seekers. One of the key findings is that the majority of skilled job-seekers opt for early-career employment in the development sector. The results show that skilled graduates sort by intrinsic motivations to some extent, but these motivations are secondary to job-seekers perceptions of benefits and the opportunities available in the various sectors. These findings call into question the use of choice models in contexts of little choice where employment possibilities are likely to be the binding constraint. Another key finding of the paper is an internal brain drain effect where higher ability workers are more likely to choose the development sector over the public and private sector.

## 1. Introduction

There has been an increasing push for skills enhancement in many developing countries (World Bank, 2000; World Bank, 2018); but little growth in employment opportunities to keep up with graduates. The result has been unemployment and underemployment, with several implications for development. Returns to education may not be as high as previously estimated though resources continue to be allocated to skills development; high levels of unemployment and underemployment imply underuse of human capital, which if used better could spur growth and development; and finally, at the micro-level, happiness and well-being of skilled-labour is diminished due to low job-satisfaction and motivation. At the policy level, development policy may need to focus more on production and private sector development in order to stimulate job creation and absorb graduates. In addition to development implications, the Government of Sierra Leone has identified unemployment/underemployment of skilled youths as a potential security risk as these youths may be easily incentivised to engage in unrest. It is therefore important to study the skilled workforce in low income countries (LICs), how this segment of the workforce makes decisions, and how such decisions are made in the context of opportunities available.

Much of the labour economics literature 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 paper is concerned with deepening our understanding on how the interplay between preferences of individual job-seekers, their specific characteristics (such as their education or measured abilities), their beliefs about the characteristics of jobs in various sectors, and the process of finding employment determines eventual occupational outcomes. Preferences, in this context, entails characteristics such as intrinsic financial and prosocial motivations, attitudes toward risk and uncertainty, and desires for social status.

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Situated primarily within the job-sorting/occupational choice literature, this paper addresses three specific questions:

1. Do matching models widely used in economics predict the occupational choice of high-skilled graduates in Sierra Leone at the sector level?
2. Do skilled job-seekers sort based on cognitive ability?
3. What information and perceptions do entry-level job-seekers have about the labour market and how does this affect search and occupational choice?

In order to explore these ideas, a combination of survey and interview techniques with experimental methods from behavioural economics was used to study occupational choice and job search behaviour of university graduates in Sierra Leone; positioning this within the opportunities available in the market. Key to the study is the introduction of the development sector as a third sector. Throughout this paper, 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 source of finances as funding to NGOs, INGOs and donor organisations derive from aid (either bilateral or multilateral ODA or private donations).

Sierra Leone was selected as an appropriate case study as the labour market in Sierra Leone is typical of many low income/lower-middle income countries<sup>1</sup>, especially those emerging from a period of prolonged economic or political crisis<sup>2</sup>; and is home to a large and thriving development sector.

The results show that skilled graduates sort by intrinsic motivations to some extent, but these motivations are secondary to job-seekers perceptions of benefits across various sectors and the opportunities available in the various sectors. These findings call into question the use of choice models in contexts of little choice where employment possibilities are likely to be the binding constraint. Another key finding of the paper is an internal brain drain effect where higher ability workers are more likely to choose the development sector over the public and private sector. This finding speaks more to policy (rather than economic modelling as with the other findings); and should encourage development organisation to reflect on their impact of the dynamics of the labour market in the countries in which they operate. It should also cause the local public and private sector to reflect on why the development sector is so attractive, and what lessons they can learn to attract high ability staff.

The analysis draws on 392 survey responses, selected from a population of about 2,000 university undergraduates who enter the market each year. This is a small sample of all the skilled workers, which is also a small share of the national labour force. According to the labour force survey, the skilled workforce with some level of post-secondary qualification was estimated at just over 50,000 people,

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<sup>1</sup> Labour markets in developing countries have large informal sectors, many small-scale production units, limited social protection coverage, large uninsured risks, seasonality in jobs, and workers holding multiple jobs (Frolich and Haile, 2011).

<sup>2</sup> Sierra Leone, like several other developing countries experienced a civil war (1991 – 2002), from which the country has recovered. More recently, the combination of the Ebola crisis and declining commodity prices globally led to a contraction in the economy. Overall growth declined from 20.7% (5.5% excluding iron-ore) pre-Ebola/pre-commodity price crash to -21.1% in 2015 (or 1.4% excluding iron-ore) (IMF, 2016). Growth recovered at 4.3% in 2016, or 3.3% excluding the iron-ore sector. The Government measures and reports GDP and growth including and excluding iron-ore.

or a mere 3% of the labour force (Statistics Sierra Leone, 2015). The results must therefore be interrupted with this in mind. Findings are limited to university graduates and cannot be generalised to the entire labour force.

The rest of this paper is structured as follows. Section two 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 three discusses the methodological approach to answering these questions ((both with respect to data collection and empirical methods). Section four presents the main findings. Section five puts forward policy recommendations. Section six concludes. Appendices are presented at the end.

## **2. Literature Review**

The trade-off between labour and leisure has been the cornerstone of neo-classical labour supply models, with alternative models on reference-dependent and income-targeting labour supply studied (Anderson et al., 2014). 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 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; 2011). Imbedded 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). These studies, along with review papers by Berry (2008), Fields (2011) and Frolich and Haile, (2011), provide a broad overview of labour market analysis in developing countries, within which this research sits. There are limitations with this body of research, however.

Firstly, as Schler et al (2009) argue, the perspective of the researched is absent from the discourse. Secondly, 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 thirdly, 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. This assumption may not hold if labour markets fail to generate employment. Evidence put forward in Pritchett (2001, cited in Fields, 2011), Kingdon et al. (2005) 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 twenty-nine 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 are imperative as this is likely to inform labour policies. The rest of this literature review separates relevant past studies based on three overarching themes: mission matching, risk preferences and occupational choice, and search and employment quality.

## *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 i.e. philanthropy, profit maximisation, social efficiency, etc. The experimental economics literature has built on this notion, hypothesising that workers “match” to a sector/occupation based on prosocial or financial motives. Serra et al. (2011), Ashraf et al. (2014) and Deserranno (2015) studied health workers to determine if those who opt into areas of the sector are philanthropically/socially driven; and if such “mission matching” leads to organisational efficiency gains, as theorised by Fafchamps (2006). Serra et al. (2011) showed that mission matching occurs as those with higher prosocial motivation were employed in the lower-paying non-profit sector; and Deserranno (2015) showed that individuals who are more profit-driven were 50% more likely to apply to a high-pay job and 40% more likely to apply to a medium-pay job. Conversely, those with experience as health volunteers or declared helping the community was most important were 10% and 20% less likely to apply to the medium and high-pay jobs respectively. In contrast, Ashraf et al. (2014) found that prosocial preferences were equal across groups exposed to different advertisements for the same job, which were intended to capture varying prosocial vs financial motivations. The theory predicts that higher prosociality is correlated with an application to the “community-based” job.

Serra et al. (2011) and Ashraf et al. (2014) implicitly assume a trade-off of between financial and prosociality in the type of employment, or a crowding out effect as posited in Bénabou and Tirole (2006). This assumption is not refuted based on results from Deserranno (2015); but contested by Dal Bó et al. (2013), indicating the literature is not conclusive. In Deserranno’s study, individuals in the high-pay treatment were 18% 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, 2015 p.3). On the other hand, Dal Bó et al. (2013) analysed the recruitment drive for public sector workers in Mexico and found that higher wages attracted a higher quality candidate (proxied by higher reservation wage, IQ and personality traits) and more motivated (in terms of public sector motivation) candidate pool. In the case of Dal Bo’ et al. (2013), higher wages attracted more prosocial individuals, contrary to Deserranno (2015). A 33% increase in wages led to a 26% increase in applications and a 35% increase in actual hires (Dal Bó et al., 2013 p.1172). Given that higher wages attracted higher quality applicants, who are more likely to accept the job, the authors reason that higher wages increase the probability of a successful match. Higher wages also helped to boost recruitment in less developed municipalities with drug-related violence that were further away (Dal Bó et al., 2013 p.1174). This conflicting result is indicative that the results may be different across different groups and countries. For example, lower-skilled rural health workers in a low-income country (Deserranno, 2015) 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. Ashraf et al. (2014) add credence to Dal Bó et al.’s (2013) claim that higher wages lead to a better match. Rewarding career incentives (such as promotions) at the recruitment stage, attracted health workers who were more effective at health service delivery (Ashraf et al., 2014 p.2). Those who applied to the “career-incentivised” over the “community-based” job conducted 29% more home visits and twice as many meetings. Furthermore, in the career-incentives districts there were better health outcomes measured by a 31% increase in the number of women giving birth at a health centre; and a 24%, 23% and 20% increase in the number of children under five undergoing health checks, being weighed and receiving immunization against polio respectively (Ashraf et al., 2014 p.3). The results also show that health workers with higher tests scores and higher social motivation perform better.

Deserrano's (2015) 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 - in contradiction to Ashraf et al.'s (2014). Individuals in the high and medium pay groups were 14% and 8% more likely to drop out respectively. Prosocially motivated workers carried out more household visits, organised more gatherings in the village and provided more natal checks; while reporting similar profits from sales (Deserrano, 2015 p.5). This can be explained by a costly crowding out effect as put forward in Bénabou and Tirole (2006). Characteristics of the applicant pool were likely to be affected by the treatment as individuals with weaker prosocial preferences were more likely to apply to the high paying treatment; creating a crowding out effect.

## *2.2 Risk preferences and occupational choice*

The "mission matching" literature has been silent on risk preferences in decision-making, which may change the results if included. Falco (2014) explored risk preferences, and how this affects the choice between informal employment or queueing for a formal job/unemployment in Ghana. Risk is modelled as uncertainty in job search; and conditional on finding a job, uncertainty in earnings (Falco, 2014). Given the two risk dimensions, Falco extends the Harris-Todaro (1970) model, relaxing the risk-neutrality assumption and assigning probability of employment in each sector. Risk were elicited in 2007 and matched with 2004-2006 employment data, which may lead to a case of reverse causation. The author argues that risk preferences influence the choice of informal sector/queueing for the formal sector; however, it may be the case that being in a sector (between 2004-2006) could have influenced measured risk preference 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 exogenous to labour market outcomes in adulthood". Though this assumption has been used in previous studies, preference stability is still widely debated (Chuang and Schechter, 2015).

The empirical results are consistent with Falco's theory. Using a multinomial logit model (MNL), marginal effects show that risk-averse workers are more likely to queue for formal jobs (especially younger, more educated risk-averse people). Risk aversion decreases with the likelihood of informal employment. For earnings, Falco used panel data on Ghanaian earnings to show that informal workers have higher income uncertainty, also consistent with the theory developed in the paper.

## *2.3 Search, information and quality of employment*

The above studies have not considered the search experience or quality of employment, both of which are important factors for utility maximisation. Recent studies have attempted to assess this 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 were treated with either transport subsidies, of varying saturation, or with participation in a job application workshop – fixed saturation. Both interventions helped workers get better quality jobs. Treatment of the application workshop and transport subsidy increased the probability of permanent employment by approximately 40% and 20% respectively. Both treatments increased the probability of formal employment by approximately 25% (Abebe et al., 2016 p.13-14).

Carranza et al. (2017) assess the role of information in search and employment using experimental data from South Africa. In the experiment, participants undergo cognitive and non-cognitive tests and the results are either given to them for private use or to be shared with employers, or not given to them at all. Their findings show that job-seekers belief and knowledge of skills has no effect on job search, and employment outcomes. In contrast to Abebe et al. (2016) they argue that frictions on the demand side may warrant more attention as increased employment and earnings came from helping

workers signal their ability to employers, and not simply from workers knowing of their abilities (Carranza et al., 2017 p.19). Abel et al. (2016) provide similar evidence by showing that reference letters from former employers mitigate information asymmetry and increase call backs; and Bassi and Nansamba (2017) show that certification for soft skills lead to managers updating their beliefs of employee's skills.

Blattman and Dercon (2016) extend the literature by looking beyond employment, to quality of employment. The also paper provides a unique example of mixed methods in the experimental literature, which this research will also employ. Blattman and Dercon (2016) investigate the quality of informal relative to industrial work (manufacturing or commercial farming), benefits and risks associated with choosing industrial occupation, and the importance of quality self-employment to occupational choice. The results show that industrial jobs offer more hours; but had little impact on income as wages were so low. Turnover in the sector was high, but this may be correlated with the firms selected. Reasons for quitting included the unpleasant nature of the job, and the risks associated. Industrial jobs were also used as a temporary buffer while workers searched for better jobs. This finding, similar to Maloney (1998) and Kingdon and Knight (2004, cited in Freeman, 2010) where workers opt for informal employment while waiting for formal sector work, again brings into question Falco's (2014) result that workers' current employment reflects preferences. The entrepreneurship program stimulated self-employment, though the authors note that this is not a feasible alternative to employment because of how the package was assigned. Those assigned to the entrepreneurship program enjoyed higher earnings by 33%, steady work hours, and had half the likelihood of accepting an industrial job in future.

The papers presented in sub-sections 2.1-3.3 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, 2015), may improve performance (Ashraf et al., 2014) or crowd out more prosocial applicants (Deserranno, 2015) who may opt for a philanthropic mission over financial gain (Serra et al., 2011). Employment and matching can be facilitated by reducing search costs, especially for disadvantaged groups (Abebe et al., 2016) and reducing information asymmetries (Abel et al., 2016; Carranza et al., 2017; and Bassi and Nansamba, 2017). Albeit, employment might not be the objective in itself, but instead quality employment (Blattman and Dercon, 2016). There remains great scope for further research in this area which this paper aims to contribute to.

Firstly, the research brings together the mission matching (financial versus prosociality) and utility-preferences literature (risk-based matching) in one model; adding time-preferences and desired social status as explanatory variables. There may be a confounding effect of risk and time preferences in the context of employment. For example, an agent who prefers a short-term contract may be a risk-taker, or myopic in the employment choice. Including both in the model can tease out marginal effects, as well as interactions. I also include a measure of cognitive ability in the model to determine if job sorting across sectors is influenced by ability. It has already been established that job-sorting at the firm level is associated with level of education (Fafchamps et al., 2006).

Secondly, the research questions will be 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 see self-employment as an entrepreneurship opportunity requiring start-up capital, a potential barrier 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 randomise over entry-level low skilled workers.<sup>3</sup>

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<sup>3</sup> This is likely to be because of the nature of the methods.

These models therefore may not fit skilled workers. Arguably, low skilled workers comprise the biggest share of the labour force in developing countries (Teal, 2011), but this does preclude research on the labour supply decision of skilled workers. In effect, this area is increasingly relevant with the push to produce a “skilled” labour force in many developing countries, and given higher levels of financial support for education by both donors and national governments (World Bank, 2000). Given the rate at which skilled labour enters the labour market out-paces the ability to create jobs (Fields, 2011) it is therefore vital to understand occupational choice of skilled labour market entrants as this may explain underemployment or the increasing size of the traditionally-termed informal sector.

Thirdly, the research seeks to introduce job availability and matching frictions into the occupational choice discourse. The ability to realise preferences may also be constrained by choices available, and dominant employers which shape the structure of the labour market. Theoretically, choice models are not concerned with how the choice set is generated as the optimal decision can be determined without this (Manski, 1977) . Choices available however, may lead to accepting a job which might not be optimal, while waiting or queueing for a better option (Maloney, 1998; Teal, 2011; Rankin, 2010; Falco, 2014) or holding multiple jobs which is common in developing countries. This has been absent from the matching literature though it may not be uncommon for the same individual to have a safe and risky job; or be a philanthropic nurse and run a profit-making small business. The fear of not being able to find a job may lead a job-seeker to accept the first offer received, or low salaries may lead to multiple employment. Matching frictions may also lead to sub-optimal labour allocations (Satchi & Temple, 2009)<sup>4</sup>. These may arise from search costs for instance (Abebe et al., 2016), information asymmetries regarding skills (Carranza et al., 2017; and Bassi and Nansamba, 2017), or an understudied area, networks. These three factors are all influenced by socio-economic status, which imply there are likely implications for inequality<sup>5</sup>.

### **3. Methodology**

#### 3.1 Data Collection Methods

##### *3.3.1 Target and study population*

The target population of the study is undergraduate university students who are in their final year of the degree programme, excluding those enrolled in the 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 a result, students enrolled at the College of Medicine and Allied Health Sciences (COMAHS) and various teachers’ colleges were excluded since these specific types of institutions specialise in the training and supply of doctors, nurses and teachers respectively. Given that the majority of employment for these skills are in the public sector, the study assumes that there are constraints in occupational choice across sectors for graduates of these degrees in contrast to other disciplines (for instance law, politics, economics, finance, engineering), that can in theory work across sectors. It may be the case that experienced

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<sup>4</sup> The increase in the skilled workforce in developing countries provides a rationale for the population of study.

<sup>5</sup> For instance, in Sierra Leone, many jobs are advertised via a website (<http://www.careers.sl/>) which requires job seekers to have access to the internet. Some jobs are also not advertised, but circulated among close circles, therefore excluding potential applicants. The Ministry of Labour and Social Security recognises this as an issue and has embarked on a Labour Market Information System to gather information on jobs available and job-seekers (Interview 1, 2016).

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, while the study focuses on employment immediately after leaving university.

Related to this, post graduate students were not included in the study. Given that the research aims to capture employment choice, perceptions and aspirations *a priori*, minimal exposure to the labour market was warranted. Post graduate students often have years of experience in employment and enrol part-time for post-graduate. 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.

Having established the target population, 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 (UoSL) and is the oldest and largest college in Sierra Leone. Of the 32 higher education institutions registered with the Tertiary Education Commission in 2011<sup>6</sup>, it was estimated that almost 20% of all students enrolled in tertiary education and 30% enrolled in universities were enrolled at FBC (World Bank, 2013 p.11-12). Importantly for this study, FBC provides population heterogeneity due to the variety of courses offered. Furthermore, being located in the capital, Freetown, leads to diversity in the student population. The student population of FBC is approximately 7000, of which about 1000 are final year undergraduate degree students. Appendix 1 discussed sampling weights and the population to which results can be generalised.

Data collection took place between August to December 2017, at the main campus located at Mt 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 final year, which could be used as a sampling frame. Such a list was not available from the university registrar, nor department heads. Lack of centralised information systems by higher education institutions in Sierra Leone was highlighted by the World Bank as a short-coming in their 2013 study, and persists today (World Bank, 2013 p.25). 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 all the same. At the end of final examinations, students then pay off the outstanding fees in order to access their transcript 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 be drawn from those students financially better off or on Government scholarships.

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 by the university in 2017, which was just over 1000 based on local media reports (Awoko, 2017).

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<sup>6</sup>This estimate included two public and one private university. Since then, two other universities have been established.

### 3.1.2 Survey data collection

Many experimental/quasi-experimental studies utilise advertisements as a sampling strategy for attracting participants<sup>7</sup>. This is likely to result in opting-in bias (Slonim et al., 2013) which may lead to covariates being correlated with the outcome of interest. Given that the research measures latent traits such as financial motivation, risk and time preferences and prosocial behaviour; advertising-based recruitment risked self-selection which would have likely correlated with these variables. 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. Subsequent to this, teaching schedules were obtained from the class representatives. The principal investigator and enumeration team (comprising four enumerators) then approached students either before or after their classes. Students often congregated in groups before and after classes, so an element of randomness was used in selecting students. 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 games and consideration for an internship. If a student declined, another student from the group was approached. A deliberate effort was made to ensure representation from each stratum. The pilot survey took place between August 16-17, and the full survey between 19-31 August (excluding Sundays). This period covered the last teaching week of the term, and first week of final examinations, so 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.

The survey comprised standard socio-demographic questions, question on university and employment experience, perceptions of the labour market, desired job and sector of employment, and five incentivised games. The first and second games were a multiple-price list risk and time preference game adapted from Andreoni et al. (2015) and was used to measure participants willingness to take risk in employment earnings and willingness to bring payments forward respectively. The third game was a social value orientation game drawing on the work of Schuyt et al (2010) and Messick and McClintock (1968) and 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 gave out of a sum of SLL100,000 to other students who were less advantaged. Finally, the fifth incentivised game was a series of ten questions from Raven's matrices, which was used to measure 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). Another proxy for ability is student GPA which was also collected in the survey. A decision was made between using Raven's matrices and simply using reported GPA scores. Reported GPA scores may not actually reflect ability as there is often cheating and "*buying grades*" in Sierra Leone. There is also likely mis-reporting from students, with leads to measurement error since the GPA scores could not be verified by the university for privacy reasons. Cognitive tests like Raven's matrices provide a more objective measure. These were piloted to ensure respondents were able to answer the questions before the final survey. Raven's matrices have also been used in labour market research in other African contexts (Bassi and Nansamba, 2017).

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<sup>7</sup> The Journal of Economic Behavior & Organization Special Issue (Volume 118, October 2015) on Economic Experiments in Developing Countries presents several experimental papers in developing countries.

All games are presented in the full questionnaire in appendix 4. At the end of the survey, the participant was asked to roll a die, which determined the game the respondent would receive payment for. This incentivised truthful revelation for each game, while managing the cost of total payoffs. Actual payoff ranged from SLL15,000 to SLL50,000 (\$2 to \$6.67). The incentives games were fully funded by the International Growth Centre.

In addition to preference elicitation, sector choice was also incentivised. One of the key objectives of the research is to understand which sectors skilled job-seekers choose, and the reasons for their choice. Respondents were asked if they would like to be considered for an internship with a government organisation, a formal private sector company, a donor organisation/INGO/NGO or shadowing someone who had set up their own establishment. For analysis, this is separated into the public sector, private sector, development sector and self-employment respectively.

The tenure of each internship was 3 months, and interns were given a stipend of SLL600,000 per month. The internship stipend was fully funded by the International Growth Centre. At the time, interns under the nationally run Graduate Internship Programme (GIP) were given a stipend of SLL500,000; making the internship for this research attractive. Respondents were told they would only be considered for one sector and was therefore required to name one preferred sector. Subsequent to the survey, respondents were asked to submit 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 many job-seekers struggle to obtain work experience, which is demanded by many 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 Coordination of Youth Activities (a large national NGO). Interns were placed between November 2017 to April 2018, depending on employer's needs. The terms of reference entailed entry level administrative and operational tasks specific to the company and sector. 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.

392 students were surveyed out of an estimated FBC final year population of 1060, a sampling fraction of 37%. 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 14<sup>th</sup> 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 31<sup>st</sup> as the majority of students were well into their exams and daily response rates began to decline. The pay-offs for incentives games was based on tossing a fair die to introduce randomness into which game was compensated. A few Islamic students viewed this as gambling and therefore declined to participate.

### *3.1.3 Interviews and focus group discussions*

Following the survey in August 2017, a random selection of 36 participants from the initial survey were contacted and invited to focus group discussions in October 2017 for follow up qualitative data collection. This two-phased sampling/nested analysis resulted in 29 participants accepting and attending six focus group discussions between them.

In order to expand the scope of the study, young graduates who had been in the labour market for a number of years were also contacted. A list of former participants from the joint National Youth

Commission-UNDP Graduate Internship Programme was procured from the National Youth Commission (NAYCOM). 20 of these former interns were contacted and invited to a focus group discussion in December. In addition to this, 20 youths in the labour market were contacted using the networks of the enumerators. 30 of these 40 people accepted the invitation to the focus group discussions, though attendance was lower at 23 participants over five focus group discussions. A focus group discussion was also conducted with the four enumerators who had all graduated and was looking for permanent employment. The total number of focus group discussions was therefore 12, with 56 participants.

Concurrent with the survey and focus group discussions, interviews were conducted with the government, private sector companies, donor organisations and local and international non-governmental organisations (NGOs). 55 face-to-face interviews were conducted with 47 key informants from 39 different organisations. In most cases, there has been follow up correspondence via emails. Interview participants were selected purposively in order to get a range of opinions across various actors. Informants were approached using a combination of pre-existing contacts, referrals, and cold calling a selection of companies registered in the Ministry of Trade and Industry database.

### 3.2 Empirical Strategy

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

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, excluding those enrolled in the medical or teachers training colleges, who are in their final year of the degree programme.

#### *3.2.1 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  $C: j \in C$  such that  $U_{ij} \geq U_{ij'}$ , for all  $j' \in C$ . The choice set is defined across four mutually exclusive sectors: the public sector, wage-employed private sector, wage-employed development sector and self-employed<sup>8</sup>. The public sector is as commonly defined and refer 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 source 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. The research shies away from the traditional market dualism in order to paint a more complete picture; and delineates sectors based on ownership structure (and associated risks) as well as institutional “missions”; rather

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<sup>8</sup> Both the private and development sectors are prefixed with the term ‘wage-employed’ to ensure they are mutually exclusive from the self-employed sector. The former two are defined based on employment versus ownership in the latter. It is common to have self-employment in both the private and development sector (imagine a small local NGO) in Sierra Leone; so the distinguishing feature is ownership and not necessarily mission in this case. Similar can be said of social enterprises.

than on the nature of the work (primary vs secondary), skills required, formality or a simple private vs public separation.

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 6 month probation), while employment in the development sector is often short-term and there is no contract in perpetuity. The development sector and public sector are associated with outward status symbols such as special licence plates, passports, national and international travel (usually at higher career levels). These characteristics 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 job-seekers with both low and high reservation wages may be attracted to the same sector given the spread of wages in a sector (see Table 1). Finally, I assume that a priori, 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.

### 3.2.2 Attributes and Utility

Let  $X$  and  $Y$  be attribute representations of individual  $i$  and sector  $j$ . Attributes refer to varying levels of risks, time, prosocial, financial, social status motivations, and 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:  $j \in C$  and:  $i \in N$ , where  $w$  is a real valued function. The job-seeker matches to a particular sector by comparing utility from different sectors.

The observer/researcher is assumed to be external to the choice process and has limited information about the process. The observer has no knowledge of utility values. The research will therefore make no assumptions on the functional form of the utility function<sup>9</sup>. 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 can be partitioned gives:

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

Where  $V$  is well defined and  $\varepsilon$  the errors are jointly normally distributed. RUMs usefully allow probabilities to be empirically modelled.

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<sup>9</sup> This factored into using multiple-price lists games for risk preferences rather than games that assume a CRRA utility function.

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 making is likely to consider options collectively rather than by pairwise comparisons. Furthermore, taking a general equilibrium approach, there is likely interdependence between sectors as all sectors in the economy are influenced by macro-fundamentals like economic growth and government policy. As such, the Multinomial Probit Model will be used in this study.

### 3.2.3 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,  $j = 1, \dots, C$ . 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 alternative (the private, public and development sector say), 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:

$$\begin{aligned}
 P_j | x_i &= Pr(y = 1 | x_i) = P(U_{i1} > U_{i2} \text{ and } U_{i1} > U_{i3}) \\
 &= P(V_{i1} + \varepsilon_{i1} > V_{i2} + \varepsilon_{i2} \text{ and } V_{i1} + \varepsilon_{i1} > V_{i3} + \varepsilon_{i3}) \\
 &= P(V_{i1} - V_{i2} > \varepsilon_{i2} - \varepsilon_{i1} \text{ and } V_{i1} - V_{i3} > \varepsilon_{i3} - \varepsilon_{i1}) \\
 &= P(V_{i1} - V_{i2} > \tilde{\varepsilon}_{21} \text{ and } V_{i1} - V_{i3} > \tilde{\varepsilon}_{31}) \\
 &= \int_{-\infty}^{V_{i1} - V_{i2}} \int_{-\infty}^{V_{i1} - V_{i3}} f(\tilde{\varepsilon}_{21}, \tilde{\varepsilon}_{31}) d\tilde{\varepsilon}_{21} d\tilde{\varepsilon}_{31}
 \end{aligned}$$

Where  $f(\tilde{\varepsilon}_{21}, \tilde{\varepsilon}_{31})$  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  $\beta$  parameters. For MNP models generally, errors are assumed to be drawn from a multivariate normal distribution with mean zero and identity variance-covariance matrix - an identifying assumption.

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, etc; and is exogenous to the decision maker.

From above, 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 (measured by the discount factor), prosocial behaviour (measure by the share given), desired social status, financial motivation and ability (measured by 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 2. The remaining

three attributes are new to this study and relevant to the research question stated at the beginning. Various socio-demographic factors are controlled for in the model.

#### **4. Results and Discussion of Findings**

This section presents the results from analysis of both the quantitative and qualitative data collected, as well as document analysis in the form of government and donor reports. In section 4.1, I begin by unpacking the labour market for skilled workers in Sierra Leone based on secondary sources, interview data and focus group discussion data. Very little research has been done on the labour market in Sierra Leone, so this sub-section captures and highlights aspects of both the demand and supply side of the labour market. The intention is to give context to the other results that follow in this paper, and by extension inform subsequent studies. In some ways, this sub-section uses micro data to triangulate some of the findings from the 2014 Labour Force Survey conducted by Statistics Sierra Leone (SSL), with support from the World Bank. Subsection 4.2 provides descriptive data from the survey, thereby given 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 sub-section usefully describes the key variables that will be included in the regression analysis, integrating this with key sociodemographic variables. Finally, sub-sections 4.3 and 4.4 presents various specifications of the regression model and discusses what can be inferred from the model.

##### *4.1 The labour market in Sierra Leone: Demand, supply, wages and matching*

Based on the labour force survey, there were 1.86 million employed in Sierra Leone in 2014. 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%), followed by the formal self-employed (34%), the wage-employed formal sector (17%) and the development sector (10%). Just over 50,000 jobs are held by those who have post-secondary qualification or higher. Of this, 22% are self-employed and 78% are wage employed. 7% of these jobs are in the agriculture and fisheries sector, 1% in mining and extractives, 2% in manufacturing, 3% in construction and 87% in services. The Government employs the largest share of skilled workers (44%), followed by the private sector (30%) and development sector (10%).

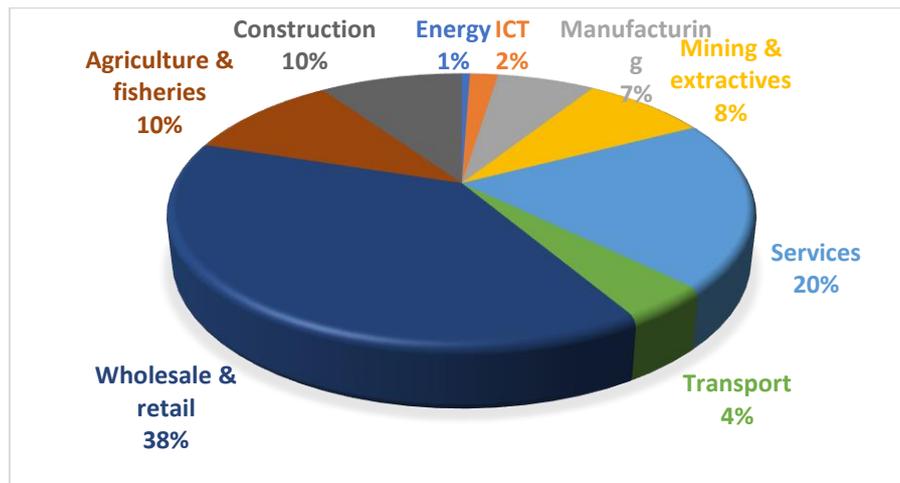
In 2016, the Ministry of Trade and Industry compiled a database of formal sector companies operating in the country, categorised by sector of operations (Figure 1)<sup>10</sup>. 5590 companies are represented in the database. From this database, several of the findings from the 2014 labour force survey were confirmed. Firstly, the 2014 survey showed that wage-employment in the agriculture sector was a mere 1% of all employment in the sector, although agriculture commands the largest share of GDP and provides the most jobs overall. From the database, only 10% of formal sector companies carry out activities related to agriculture or fisheries. Formal sector companies are the main source of formal wage employment. Many farms may not be registered as business but as community-based farming groups; and are therefore not captured under the formal private sector, even though these organisations provide both self-employment and informal wage-employment. Secondly, a large

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<sup>10</sup> The database is a combination of 20 other government sources and a survey of 1,000 firms to verify the information collected and collect data on firm perception of the business environment and support received under the President's Recovery Priorities (PRPs). The database is still a work in progress, but it the most complete source available.

proportion (34%) of formal employment was classified as self-employment. These self-employed persons are likely to be engaged in wholesale and retail, transport and services, which collectively represent 62% of all companies registered with the Ministry of Trade. Thirdly, the share of companies registered in manufacturing, energy and mining and extractives sum to 16%; and these companies comprise a mix of self-employed registered artisanal miners and manufacturers and big mining, oil marketing and manufacturing companies. These big companies, together with the financial sector companies in the services sector, account for the majority of the 17% wage employment in the formal private sector.

Figure 1 Sector in which formal private sector companies are registered (calculations based on number of companies registered)



#### 4.1.1 Labour Demand

Given that much of the private sector is informal and formal companies are small in size, job creation in the private sector has been sparse. Jobs in the public sector has also be limited due to hiring freezes (Key Informant 6, Government Official). Jobs in the development sector, though more unstable, are created more frequently with the launch of new projects that give way to vacancies. These jobs are largely short term, in line with the life span of the associated project. Therefore, though the flow of development sector jobs may be high, the stock may not reflect the large numbers of jobs created as these jobs are routinely destroyed when the project comes to completion.

Private sector companies have a higher demand for graduates with a background in accounting and finance, economics, commerce, natural sciences (mathematic, chemistry, geology), engineering (mining, mechanical and civil mainly; with a few mentions of automation and roaming engineers, though these two course are not currently offered in Sierra Leone). The development sector mainly recruits 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 recruits from a range of disciplines.

A cross section of companies was selected and interviewed, both from the MTI database and using snowball sampling. Companies were selected so that all sectors were represented. Based on interview data on 16 private sector companies, it is can be argued that the nature of the private sector in Sierra Leone generates little demand for labour and job creation in the formal private sector is sparse. The average size of companies interviewed was 125 permanent staff, which is above the average company

employment in the MTI database as three of the largest companies in Sierra Leone were interviewed. These companies have over 400 staff and operated in logistics, mining and telecommunications; and provided additional indirect employment through contractors in excess of 1000 staff. The smallest three had staff of two, three and nine; and operated in services (recruitment and consulting). Of the 16 private sector companies interviewed, on average about 4 permanent jobs would arise in a given year, which 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 bank and 100 new casual staff by a mining company.

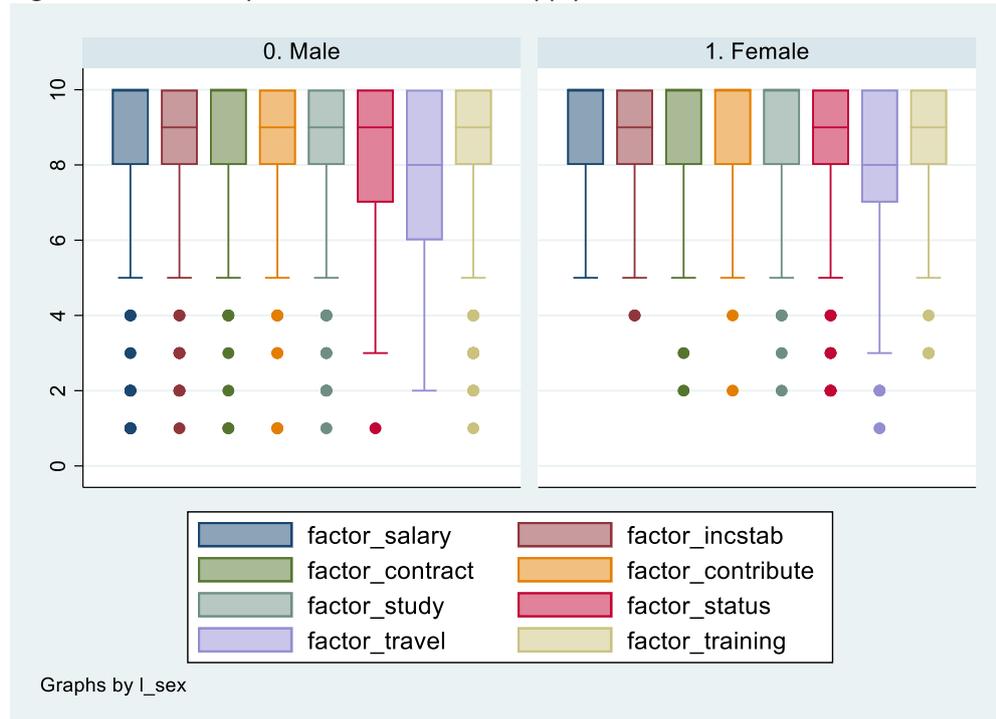
The factors affecting (or limiting in this case) labour demand can be attributed to constraints in both the product and factor markets, which in turn impact on operating costs and profitability. In the product market, liberal policies which lead to more imports have resulted in lower demand for some 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 private costumers 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 is below the optimal level.

In the factor market, high electricity costs limits investment in capital goods. Assuming labour is a complimentary factor of production, the demand for labour will be less. 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, companies reported a skills gap for a selection of technical skills related to engineering and automation. Skills shortages result in importing labour, which is associated with high expatriate wage packages, which limits the quantity of labour demanded.

#### *4.1.2 Labour Supply and Search*

Labour force participation is highest for skilled workers, though they also face higher levels of unemployment, and experience underemployment. Approximately 3300 graduates will enter the labour market each year. Classical theories of labour supply assert that the worker adjusts the mix of labour/leisure hours based on the wage rate. There are likely other non-financial factors which affect the labour supply decision. Survey respondents also valued contract stability as highly as the value of the salary (using median as a measure of central tendency), while 50% of respondents rated the other factors at least 9/10, save for opportunities to travel, which had a median value of 8/10 (Figure 2). Moreover, the situation in Sierra Leone is more complex than a simple response to a change in the wage rate, largely due to imperfect information and perceptions held by job-seekers.

Figure 2: Factors important to the labour supply decision



The majority of organisations (across sectors) advertise using print and online media, and at times, radio advertisements. Some companies also outsource to HR/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, they have hosted careers fairs to bring employers and job seekers 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 a 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, job-seekers complained that some positions were not advertised, and even positions that were advertised “*were not for them*”. There is a culture of mistrust among job-seekers based on responses in the 12 focus group discussions; and this exists across disciplines and the respondent’s 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).

This lack of confidence in the recruitment process is not without reason, as many human resource (HR) managers reported “*having their hands tied*” to the situation, and simply adhering to instructions from above. Respondents commonly referred to “*interference*”, “*connectedness*” and more colloquially “*potato leave, cassava leave fambul*” to indicate the series of networks that they perceive have become more important to employment than merit. Job-seekers perceived this as a form of labour market discrimination based on religion, political affiliation, or even affiliations through alma maters.

The majority of respondents who were just about to enter the job market 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) e.g. working as an enumerator on a project, (iii) teaching – the science and engineering graduates, and some social science graduates, often teach at private schools on a part-time basis, (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.

#### 4.1.3 Wages

There are significant differences in wages both across and between sectors. This confounds estimation of the simple Mincerian equation as the wage rate not only varies by experience and education, but by sector, types 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 a one-off lump-sum. Table 1 gives a summary of the spread of baseline wages across sectors<sup>11</sup>.

Table 1: Summary of monthly baseline salary by sector in Leones (based on 39 employer interviews)

Sector	Minimum reported baseline salary	Maximum reported baseline salary	Range
Private sector	1.30	3.50	2.20
Public sector	0.90	4.90	4.00
Development sector	0.75	5.50	4.75

As seen, the largest spread exists in the development sector as salaries vary significantly between local NGOs and donor organisations. Though the private sector is often associated with high levels of risk, this sector had the lowest 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 contract staff (who are sometime donor funded). The minimum wages reported in Table 1 are entry level wages in excess of the minimum wage, though interns are likely to be paid the minimum wage (SLL500,000). Wages earned are a strong indicator of underemployment, though this is not the classical ILO definition of working less hours than desired. Many workers willingly accept lower wages or even “volunteer” for a small stipend because opportunities are sparse.

In 1997, a statutory monthly minimum wage was set at SLL21,000 (USD 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-\$60) per month and an entry-level skilled civil servant with a university degree had a baseline salary of about SLL900,000 (\$150) (Key informant 9, Government Official). The minimum wage for Government workers increased to SLL500,000 (US\$100.00) in 2015 in the government budget statement, which benefits unskilled workers, while reducing wage differentials. The private sector soon followed, but there are instances where some workers are paid below this (Key Informant 15, SLEF).

For many civil servants, allowances exceed their current baseline salary. For a grade seven civil servant (most degree holders enter the civil service at grade seven), starting salary is still SLL900,000 (US\$120 in 2017), while the fuel allowance is currently 45 litres per week, once evidence of access to a vehicle is provided. It is common practice to cash in these fuel vouchers which was estimated to be valued between SLL1.2-1.3 million as at December 2017 depending on the fuel station. This single allowance

<sup>11</sup>Employers were less forth-coming with precise data on allowances, so only baseline wages are included in the table.

is 133% 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 significant and the fuel vouchers can be easily monetised. The removal of the fuel subsidy in 2016 (IMF, 2016) led to an increase in fuel prices at the pump, which increased the nominal salary of civil servants. In addition to civil servants, there are also several contract staff within government. Their salaries can range from the same level of a grade 7 entry level civil servant to \$650 per month. Contract staff at higher levels, and with experience may earn up to \$5000; and still benefit from the usual allowances (Key informant 6, Government Official).

In the private sector (from the companies interviewed), salaries range from SLL1.5 to 2 million for someone in the banking sector, up to SLL 3 to 3.5 million for someone in the mining sector or working with an engineering company. This implicitly suggests a 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 (Key Informant 31, Private Sector Company). 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 (Key Informant 39, Private Sector Company). The lowest salary reported was 1.3 million by a telecommunication company and logistics company. It is common in the private sector to receive allowances for rent, transport, medical and leave. These vary by sector (a percentage of the baseline for example); and are documented in the respective industry gazettes.

In the development sector (from the organisations interviewed), salaries range from 0.75 million to 5-5.5 million 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 project staff contracts are subject to funding, so the higher remuneration is associated with higher risks of future unemployment. The majority of NGOs reported that salary differences arose because of experience and tenor, 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 from tax implications across all sectors as certain types of allowances (e.g. rent allowances) are tax deductible, instability of donor funds in the development sector which leads to large one-off lumpsums being given to staff in times of a funding boom, and trade union lobbying in the private sector as workers and unions display a preference for allowances as they are more likely to increase with the cost of living in comparison to the baseline salary. Estimating earnings is therefore a complex task. One implication of this is that research that has been done using baseline salary data in the Sub-Saharan African context may come under scrutiny if wage determination is similar to the Sierra Leone case and some proportion of allowances (rent allowances for instance) are significant but one-off and not predictable.

#### 4.2 Descriptive Statistics

The majority of the sample was male (65.3%), which implies a population proportion of 63.7%. More students live in West Freetown relative to East Freetown, the majority is originally from Freetown rather than the provincial regions, just under a third have at least one child, just over 10% are married, almost half have financial dependents and approximately 60% had some employment experience or had volunteered. Of those with employment experience, the majority had experience

in the public sector (Table 2). The majority of respondents stated that they selected their course as a means of contributing to society (

Figure 3). Only, 4% named influence from a family or friend having studied a similar course as a reason, which is unsurprising given that only 16% had a father that attended university and 2.5% had a mother you attended university.

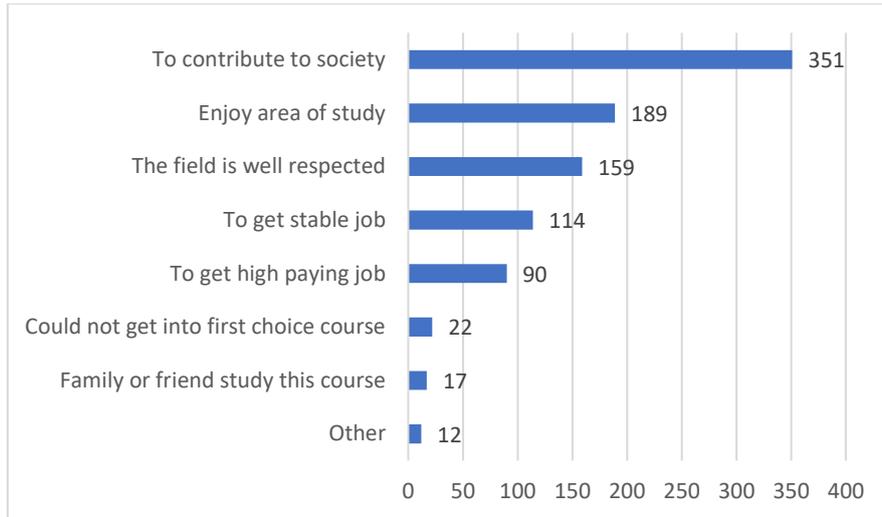
26.5% of the sample were enrolled in the Arts Faculty, 48.4% in Social Sciences, 15.8% in Pure and Applied Sciences and 9.2% in Engineering. The respective population proportions were estimated at 26.7%, 55.7%, 9.7% and 7.9%, and sampling weights calculated accordingly (See appendix 1). The average age of a respondent in the sample is 26 years. The youngest respondent was 20 years and the oldest 45. Such a large range is not uncommon in Sierra Leone as many older students whose education was disrupted by the war enrol at the university at older ages. There were also students who had already completed a bachelor's degree and was reading for a second one. This was most common among respondents studying law.

Table 2: Summary of sample characteristics

	Sample proportions		Implied population proportions <sup>12</sup>	
	Yes	No	Yes	No
Female (No = male)	0.3469	0.6531	0.3626	0.6374
Live in East Freetown	0.4031	0.5969	0.3969	0.6031
Originally from Freetown	0.4719	0.5281	0.479	0.521
Has children	0.3061	0.6939	0.3201	0.6799
Married	0.1122	0.8878	0.1182	0.8818
Has financial dependents	0.4694	0.5306	0.4878	0.5122
Ever employed	0.5944	0.4056	0.6004	0.3996
in the public sector	0.2806	0.3138	0.2813	0.3131
in the private sector	0.1888	0.4056	0.1813	0.4130
in the development sector	0.1582	0.4362	0.1624	0.4319
in self-employment	0.0255	0.5944	0.0250	0.5694
Volunteer experience	0.6173	0.3827	0.6182	0.3818

Figure 3 Reason for choosing course of study (multiple responses were selected)

<sup>12</sup> Population proportions are based on survey weights as discussed in appendix 1.



The inferential model focuses on six key latent traits: risk and time preferences, prosocial behaviour, desire for social status, financial motivation and ability; which were elicited from the incentivised games. Summary statics are presented in Table 3.

Table 3: Summary statistics for key latent variable

Variable	Obs	Mean	Std. Dev.	Min	Max
res_wage_us	392	334.6599	291.4963	66.66666	2666.667
prosocial	392	0.237398	0.1414281	0	1
riskpremium	390	1.630769	0.7448724	-1	2
discountfactor	392	0.980021	0.0169871	0.9566856	1
status_change	392	2.752551	1.352271	0	9
raven_ability	392	-0.0015	0.7646224	-1.657177	1.933366

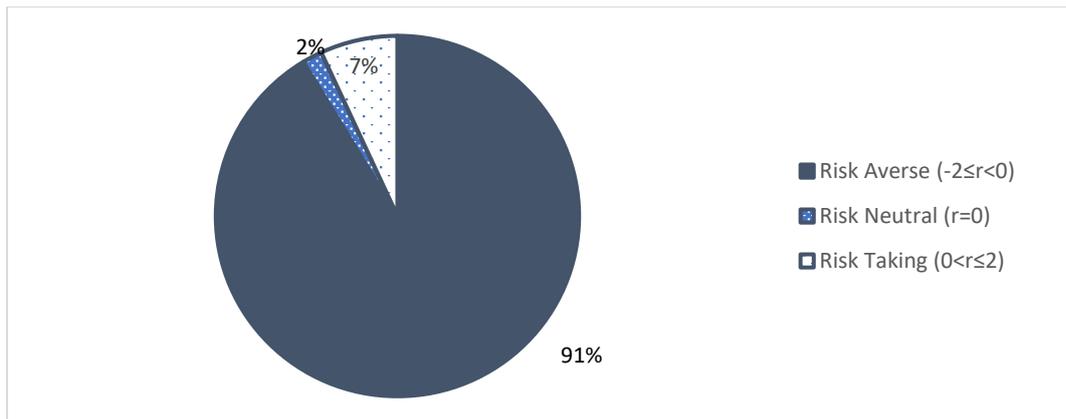
There is significant variation in the monthly reservation wage (as a proxy for financial motives). This is mainly driven by different aspirations across courses. In particular, students reading for an LLB are outliers as they have extremely high reservation wages because of perceived earnings potential in the field. One may argue that financially driven individuals are more likely to choose law as a profession as a result. Excluding the 27 law students from the sample reduces the mean monthly reservation wage from \$334.66 to \$293.30. The average reservation wage for law students only is \$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 6). From Table 8, the differences in average reservation wage between those choosing the private sector versus both the public and development sector are statistically significant. Comparing the average reservation wage of \$334.66 (SLL2.51 million) this is higher than what most entry level graduates make (save for those employed with mining companies or on contract with the government), based on the discussion in subsection 4.1. Generally, there were inflated expectations, but some respondents were familiar with the minimum wage and entry level base-line wage in the public sector. Others knew of examples of NGO and donor organisation wages, as these are sometimes published by the organisation when a vacancy was advertised. There was the widest knowledge gap for the private sector, which may be rooted in recruitment process and the amount of information supplied prior to the interview. It is not uncommon for an applicant to be unaware of the terms of the job until the very last stages of the selection process. One private sector company summarises this in describing the interview process.

*“We ask in an indirect way for the applicant to put a value on themselves. They say you have your own grade. We say we just want to hear for admin reasons. We say it will not affect their package. But we adjust the package with input from them. Some of them come in with inflated expectations. In the end, when we offer something, they shake their heads and nod”* Key informant 27, Private Sector Company.

The average amount given away to a less advantaged student was 23.7% (Table 3) of the total allocated sum (SLL100,000 or \$13.33). 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% of endowments were given away. Results from dictator games across 60 villages in Sierra Leone showed participants gave just over 25% Cilliers et al. (2015, p.403). From the data summarised those wanting to work for the development sector gave the most, while those interested in private sector employment gave the least (Table 6). This difference is statistically significant, but only at the 10% level (Table 8). There are no statistically significant differences in giving between faculties (Table 9). 42.1% of all respondents gave at least 20%. The results from the dictator game is in line with other measures of prosocial behaviour used in the study. Results from the social value orientation game (see Game 3 of appendix 4) show that 69.9% of respondents maximise joint gains, 17.6% maximise their own gains and 12.5% maximise the relative difference between themselves and others. From the psychometric analysis, 46.7% answered no to the question: *“It is difficult for me to support a cause that does not directly affect me”*.

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. From Table 3, the average university student entering the labour market is risk averse (average risk premium = 1.63). 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 7) and were willing to take less risk in comparison to student of all other faculties (Table 9). Separating the risk premiums categorically shows that overall, the population is highly risk averse in the employment domain as over 90% of respondents had a positive risk premium, that is, they were willing to pay to eliminate the risk (Figure 4). Qualitative data from focus group discussions and interviews suggest that risk aversion in employment is rooted in lack of opportunities. Job seekers are therefore willing to take the safest option as opportunities are not readily available, and spells of unemployment cannot be buffered by a welfare state, or personal savings in the case of labour market entrants. Risk in this context is not simply the trade of between returns and risks, but there is also the risk of losing an option altogether, regardless of the risk-reward combination. Colloquially, this is said: *“if something gives half a loaf you accept that first”* (Key informant 17, Sierra Leone Labour Congress) vocalising the willingness to accept low salaries if an option presents itself, for fear of no future job offers in the context of limited employment opportunities.

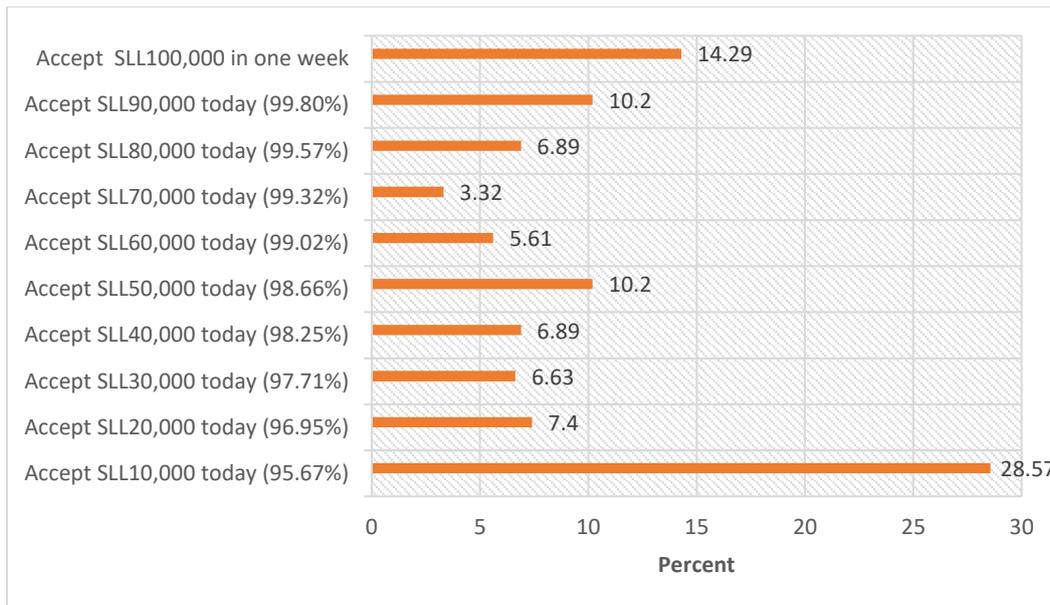
Figure 4: Risk preferences of respondents.



The majority of respondents (28.6%) would accept SLL10,000 today rather than waiting seven days for SLL100,00 (**Error! Not a valid bookmark self-reference.**). The second largest percent (14.3%) is almost half of this and 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 3), 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 found in hypothetical questions administered. 82.9% of respondents would not wait for a better job, even if this job was promised to them by someone they trusted and respected<sup>13</sup>. For the internships created as an incentive compatibility, the results were different based on preferred payment schedules. 78.06% stated they would prefer a monthly payment schedule of SLL500,000 (\$66.67) over fortnightly earnings of SLL200,000 (\$26.67, equivalised to \$53.33 monthly). In reconciling these contrasting results, the issue of uncertainty becomes important (Frederick et al., 2002) and the correlation between time, risk 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 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, which leads to binary identification of those willing to bring future gains forward. This binary identification is used as a dummy variable in the regression analysis.

Figure 5: Time preferences of respondents with implied discount factor (in parentheses).

<sup>13</sup> 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”



MacArthur’s community ladders, a tool in psychosocial studies, was used to elicit subjective social status (see appendix 4). 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. Table 3 shows the average respondent hoped to use employment to climb the social status ladder by 2.75 rungs (on average from position 5 to position 8). Those opting for employment in the development sector had the highest average desired status change (Table 6), but the difference between the development sector and other sectors is only significant when the development sector and public sector are compared (Table 8). Status associated with particular jobs is a key feature present in the labour market, which was expressed by agents on both the demand and supply side. 40.6% of respondents chose their field of study because it was well respected (

Figure 3) and status was highly rated as a factor in the labour supply decision (Figure 2). On the demand side, some employers recognise the role of status in Sierra Leone’s history and culture, and how this spills over into the labour market, sometimes at the risk of poor output. Excerpts from two key informants are presented below. As a result of status being a recurring theme in the interviews and focus group discussions, including a measure of desired status in the regression model is validated.

*“They need to connect duties to output. Not just I am doing it because the organisation is paying me or I seek pride and status in being employed. The job 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 good job.”* (Key Informant 23, INGO)

*“If you have 5 degrees people respect that. Having a degree gives huge pride. It’s the same with a good job. It goes with status and pride. We have this thing with status in our culture. It come from the colonial era.”* (Key Informant 36, Private Sector Company)

Ability was measured using a series of Raven’s matrices - a cognitive ability test; and predicted ability levels estimated using Bayesian methods embedded in Item Response Theory. Appendix 2 provides a detailed explanation of these method and estimates. In the model, ability levels range from -4 (least able) to +4 (most able), where 0 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 3).

Average ability is highest among those enrolled in Pure and Applied Sciences, and lowest among Arts students (Table 7). There does not appear to be any real difference in ability by sector choice (Table 8). This will be tested in the regression model, controlling for other variables. Differences across faculty of enrolment are statistically significant (Table 9).

Table 4 presents the correlation between different latent variables. As expected, there is a negative 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 ( $\rho_{prosocial\_reswage} = 0.0342$ ) which may imply that this sample behaves more like the participants in Dal Bo' et al. (2013) where higher wages attracted more prosocial individuals, and not like those in Deserranno (2015) where financial motives crowded out prosocial tendencies. The coefficient between time and risk preferences is negative indicating that participants that opted for immediate payment are more risk-taking, but the correlation coefficient is very close to zero ( $\rho_{risk\_presentbias} = -0.0145$ ). Higher cognitive ability is positively correlated with financial motivations and prosocial behaviour; and negatively correlated with desired status and risk-taking.

Table 4: Correlation matrix of latent variables

	Res_wage_us	Prosocial	Status_change	Present_bias	Risk_premium	Raven_ability
Res_wage_us	1.0000					
Prosocial	0.0342	1.0000				
Status_change	0.0204	-0.0116	1.0000			
Present_bias	-0.0918	0.0317	-0.0678	1.0000		
Risk_premium	-0.2493	0.0596	-0.0011	-0.0145	1.0000	
Raven_ability	0.0856	0.0779	-0.0238	0.0018	-0.1464	1.0000

Finally, sector choice. Respondents were asked which in 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 44.1% opted for the development sector, followed by 37.8% for the public sector, 15.4% for the private sector and a mere 2.7% for self-employment. Sector choice is not independent of gender based on Fisher exact tests (Table 5). Expected frequencies are given in parenthesis in the table. Females were more likely to choose the development sector in comparison to males; but had lower than predicted frequencies for choosing public sector employment and self-employment. The implication of sector choices with respect to policy is discussed in section 5.

Table 5: Sector choice by gender

Sector	Sex		Total
	Male	Female	
Public Sector	110 (96.7)	38 (51.3)	148
Private Sector	38 (40.5)	24 (21.5)	62
Development Sector	98 (112.3)	74 (59.7)	172
Self-employment	10 (6.5)	0 (3.5)	10
Total	256	136	392

Fisher's exact = 0.001

Table 6: Key latent traits by chosen sector of employment.

VARIABLES	(1) Res_wage_us	(2) Prosocial	(3) Risk_premium	(4) Discount_factor	(5) Status_change	(6) Raven_ability
Public Sector	312.7*** (22.05)	0.227*** (0.0123)	1.693*** (0.0574)	0.979*** (0.00142)	2.608*** (0.105)	-0.0986 (0.0666)
Private Sector	437.2*** (43.08)	0.214*** (0.0178)	1.484*** (0.104)	0.980*** (0.00207)	2.742*** (0.158)	0.0566 (0.0893)
Development Sect	313.1*** (22.04)	0.254*** (0.0103)	1.650*** (0.0563)	0.981*** (0.00132)	2.894*** (0.111)	0.0457 (0.0560)
Self-Employed	364.0*** (90.93)	0.227*** (0.0354)	1.300*** (0.318)	0.984*** (0.00530)	2.600*** (0.476)	0.252 (0.320)
Observations	390	390	390	390	390	390

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

Table 7: Key latent traits by faculty enrolled in.

VARIABLES	(1) Res_wage_us	(2) Prosocial	(3) Risk_premium	(4) Discount_factor	(5) Status_change	(6) Raven_ability
Arts	225.6*** (14.67)	0.231*** (0.0130)	1.801*** (0.0518)	0.977*** (0.00173)	2.864*** (0.139)	-0.225*** (0.0776)
Engineering	419.6*** (37.11)	0.235*** (0.0244)	1.556*** (0.142)	0.976*** (0.00290)	2.750*** (0.234)	0.219 (0.144)
Pure/Applied Sci	442.8*** (32.78)	0.222*** (0.0186)	1.589*** (0.0986)	0.982*** (0.00189)	2.435*** (0.127)	0.217** (0.0923)
Social Sciences	341.0*** (25.35)	0.245*** (0.0105)	1.566*** (0.0585)	0.982*** (0.00124)	2.799*** (0.102)	0.00587 (0.0523)
Observations	390	390	390	390	390	390

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

Table 8: Comparison of mean values of key latent traits by chosen sector of employment (differences of mean presented)

	Res_wage_us	Prosocial	Risk_premium	Discount_factor	Status_change	Raven_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

Table 9: Comparison of mean values of key latent traits by faculty of enrolment (differences of mean presented)

	Res_wage_us	Prosocial	Risk_premium	Discount_factor	Status_change	Raven_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

### 4.3 Regression Model

The model estimates the probability of choosing a particular sector, conditional on the various individual traits described above. The probability of choosing sector  $j$ , conditional on attributes  $x_i$  (taking marginal effects) is given by:

$$P(y = j|x_i) = \beta_1 risk_i + \beta_2 time_i + \beta_3 prosocial_i + \beta_4 status_i + \beta_5 financial_i + \beta_6 ability_i + \gamma X_i + \varepsilon_{ij}$$

$X_i$  represents a vector of controls, including: sex, age, faculty enrolled in, if the respondent is originally from Freetown, area of residence, parents' education, and enumerator fixed effects. Differences in the latent traits and sector choice are expected based on the sex of the respondent so I control for this. 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, *origin\_freetown* is a dummy variable and equals one if the respondent grew up outside of the capital and zero otherwise. Father's education, mother's education, faculty enrolled in, and enumerator effects are a series of indicator variables. Parents' education level and faculty of enrolment are likely to affect the latent traits through socialisation. And finally, 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 a result, I control for enumerator effects. These controls mitigate any potential bias in the estimated coefficients.

Results are represented in Table 10. For the regression analysis, I restrict the sector choice to the public, private and development sectors by excluding the respondents who opted for self-employment. This is done for two reasons. Firstly, only 10 out of the 392 respondents chose self-employment so computationally, excluding these respondents allow for an easier maximisation problem. 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. In the tables below, the development sector is considered as the base category for interpreting estimates in columns one and two of Table 10 and Table 11. Stata automatically selects the modal choice category as the base outcome for analysis. I keep this as the base category in order to interpret choosing the public and private sector relative to the development sector. As I will discuss, using the development sector as the base outcome is useful to determine if higher cognitive ability increases the chances of choosing the development sector relative to the other two sectors. Such a scenario with imply an internal brain drain.

The model produces significant results for prosociality, desired status and ability (Table 10). From column one and two of Table 10, respondents who are more prosocial, are less likely to choose the private sector relative to the development sector; and those who desire social status are more inclined to the development sector relative to the public sector. Higher ability job-seekers are also more likely to choose the development sector relative to the public sector. The first result is expected as the development sector is seen as making a contribution to society and attract those more socially driven. The second result (related to ability) indicates a brain drain from the public sector to the development sector at the time of sector choice<sup>14</sup>.

Estimates in columns one and two can only be interpreted based on direction and relationships between sectors. Columns three, four and five give marginal effects (at the mean), which estimates the probability of choosing each sector conditional on the covariates in the model. Those seeking status and with higher than average abilities are less likely to choose the public sector with

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<sup>14</sup> This may be the case at senior level of employment as well, but this is not the focus of the paper.

probabilities 4.4% and 6.7% respectively; but more likely to choose the development sector with probability 4.3% and 6.1%. Those with above average prosocial traits are less likely to choose the private sector with probability 23.8%, but more likely to choose the development sector with probability 35.1%.

Table 10: Multinomial Probit regression results for sector choice. Choosing the development sector is the base outcome

VARIABLES	MNP regression estimates		Marginal effects (evaluated at the mean)		
	(1) Public_Sector	(2) Private_Sector	(1) Public_Sector	(2) Private_Sector	(3) Development_Sector
<b>Measured attributes</b>					
res_wage_us	-0.00007 (0.000402)	0.000536 (0.000406)	-0.00006 (0.0001)	0.00009 (0.00005)	-0.00003 (0.00012)
prosocial	-0.858 (0.699)	-1.883** (0.811)	-0.1132 (0.1829)	-0.238** (0.118)	0.351* (0.191)
status_change	-0.172** (0.0693)	-0.0665 (0.0806)	-0.0442** (0.0182)	0.0014 (0.0117)	0.0427** (0.0189)
present_bias	0.239 (0.228)	0.0722 (0.276)	0.0629 (0.0589)	-0.0052 (0.0393)	-0.0577 (0.0635)
riskpremium	0.0506 (0.141)	-0.0600 (0.154)	0.0185 (0.0362)	-0.0130 (0.0217)	-0.0055 (0.0384)
raven_ability	-0.253* (0.132)	-0.0779 (0.138)	-0.0665* (0.0341)	0.0053 (0.0194)	0.0612* (0.0357)
<b>Controls</b>					
age					
age_squared					
sex					
area of residence					
origin_freetown					
faculty enrolled in					
father's education					
mother's education					
enumerator FE					
Constant	7.854** (3.503)	9.381*** (3.597)			
Observations	380	380	380	380	380
F(44, 333)	2.70	2.70			
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

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 discussed in subsection 3.2.1 heterogeneity of jobs within each sector in relation to remuneration packages could have lead to proving the null for the financial motivation coefficient. Risk averse job-seekers 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 sectors 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 the public sector employment requires more waiting/queuing than development sector employment which arises more frequently, but is short-term.

One of the notable findings is that few the individual specific latent traits have significant coefficients, though the signs of the coefficients are as expected. These results are robust to various specifications of the model including different measures of time preferences, categorical measure of risk preferences, interactions between time and risk preferences, and including robust standard errors without survey estimations. Lack of significant results on these latent variables is different to previous studies discussed in section 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 low income and least developed countries. Falco's (2014) study looked at Ghana, Ashraf et al. (2014) at Zambia and Dal Bó et al. (2013) at Mexico, which are all middle-income countries. Desserrano's (2015) study focused on Uganda and Serra et al. (2011) on Ethiopia; both of which are large low-income countries with populations around 41.5 million and 81.2 million respectively (World Bank, 2018). Sierra Leone is low income and small with a population just over 7 million (World Bank, 2018). Arguably population size and income matter for the labour market, and both these variables are likely to determine the size and structure of the product market, and by extension, the size and structure of factor markets like the labour market. I therefore posit that the difference in results stem from the structure of the labour market, and importantly, the availability of choices.

Choice models, as the name suggests, assumes that the decision maker has choice. I argue that the results are not significant in the model above because free choice simply does not exist in context like Sierra Leone. Previous studies have assumed that individuals can freely choose between the public and private sector (Falco et al, 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 and Desserrano, 2015); either neglecting how the choice set is generated or creating the choice set in the case of randomised control trials. The main question of this paper is preferences or possibilities. I argue that in the absence of free choice, agents are constrained and modify their choice 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 his/her level of prosocial traits. Utility is therefore maximised probabilistically, and sector choices are made based on possibilities, rather than preferences. This argument is captured theoretically in Train (2009, p.14). The last sentence is underlined for emphasis.

*"It is important to note, however, that models derived from utility maximisation can also be used to represent decision making that does not entail utility maximisation. The derivation assumes that the model is consistent with utility maximisation; it does not preclude the model from being consistent with other forms of behaviour. The models can also be seen as simply describing the relation of explanatory variables to the outcome of a choice, without reference to exactly how the choice is made."*

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 perception on 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 3 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<sup>15</sup>. 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, which are likely informed by socio-economic status, availability of information and networks. The latter two were discussed in section 4.1 in the context of this research.

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 on beliefs on the structure of the labour market rather than intrinsic attributes/preferences<sup>16</sup>. The updated model is presented in Table 11.

From columns one and two in Table 11, similar results are found for status, prosocial behaviour and ability as in Table 10, but the coefficients are now more significant. In this model, an internal brain drain is again observed as higher (lower) ability job-seekers are more (less) likely to choose the development sector (public sector) with probability 7.6% (7.9%). This effect is larger than results in Table 10 and significant at the 5% rather than 10% level. As expected, the coefficients on the perception indices are significant. From columns three and four (of Table 11), opinions on the private sector does 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 by 6.7 and 3.8 percentage points respectively. The latter is only significant at the 10% level. Observing the significant results in column five, together with those from columns three and four, the overall result indicates some trade-off between the public and private sectors and the development sector, but not necessarily between the two traditional sectors.

The majority of respondents ranked the development sector as their first choice for salary, status (jointly with the public sector) and training opportunities

Figure 6). It was ranked second for career progression as many see the development sector as providing experience and access to a network 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. 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-

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<sup>15</sup> 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.

<sup>16</sup> An example (not be generalised) of this can be seen from interviews with two recent graduates (one male and one female) on their expectations of earnings in each of the four sectors. Both interviewees gave similar rankings of the four sectors for highest to lowest earnings based on their beliefs (1. Self-employed, 2. NGO/Donor, 3. Private wage-employed and 4. Public sector), however, the male believed that salaries were on average 20% higher for all sectors except self-employed where both had similar expectations. The female subsequently had a lower reservation wage. This may be because she is less financially driven; but may also be because her beliefs about female-earning tapers her financial motivations.

employment traditionally explained in the literature, and again signifies the importance of perception among respondents and how different meanings may be ascribed to terms.

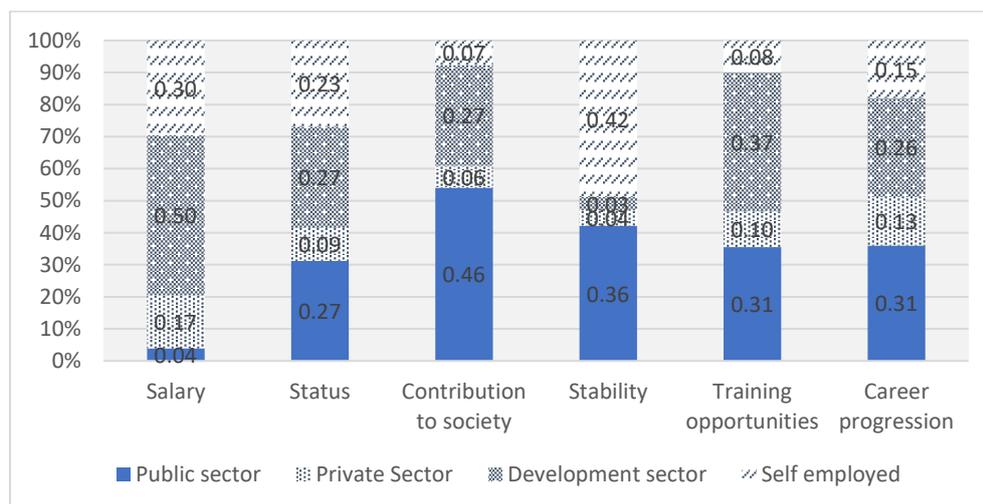
Table 11: Multinomial Probit regression results for sector choice – including perception score for each sector.

VARIABLES	MNP regression estimates		Marginal effects (evaluated at the mean)		
	(1) Public_Sector	(2) Private_Sector	(3) Public_Sector	(4) Private_Sector	(5) Development_Sector
<b>Measured attributes</b>					
res_wage_us	-0.00009 (0.000430)	0.000499 (0.000399)	-0.00006 (0.00011)	0.00009 (0.00006)	-0.00003 (0.00011)
prosocial	-1.264* (0.727)	-2.009** (0.832)	-0.2160 (0.1853)	-0.235* (0.1217)	0.451** (0.198)
status_change	-0.185*** (0.0715)	-0.0421 (0.0837)	-0.0484** (0.0187)	0.0056 (0.0124)	0.0428** (0.0192)
Present_bias	0.261 (0.241)	0.102 (0.284)	0.0653 (0.0613)	-0.0012 (0.0410)	-0.0641 (0.0661)
riskpremium	-0.00461 (0.147)	-0.0955 (0.155)	0.0051 (0.0374)	-0.0149 (0.0223)	0.0098 (0.0393)
raven_ability	-0.312** (0.133)	-0.111 (0.139)	-0.0789** (0.0335)	0.0031 (0.0198)	0.0758** (0.0357)
<b>Perception measures</b>					
pub1	3.033*** (0.499)	0.678 (0.531)	0.794*** (0.1265)	-0.0945 (0.0768)	-0.6996*** (0.1334)
priv1	0.182* (0.107)	0.317** (0.136)	0.0292 (0.0275)	0.0383* (0.0198)	-0.0674** (0.0293)
ngod1	-0.345*** (0.116)	-0.425*** (0.123)	-0.0672** (0.0288)	-0.0445** (0.0174)	0.1117*** (0.0317)
<b>Controls</b>					
age					
age_squared					
sex					
area of residence					
origin_freetown					
faculty enrolled in					
father's education					
mother's education					
enumerator FE					
Constant	13.00*** (3.562)	12.93*** (3.689)			
Observations	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

Figure 6: Breakdown of top ranking sector by characteristic.



The preference for the development sector based on the quantitative data is supported by findings from the focus group discussions and interviews. In particular, respondents cited a greater awareness of jobs in the development sector as there is more information available; and political interference in the public and private sector renders these sectors less desirable to job seekers. Political interference was one of the dominant themes coming out of the qualitative data and is explored in more detail in another paper of the DPhil thesis. The key arguments briefly presented here.

“Interference” have led employers and job-seekers to respond in ways which create inefficiencies in the labour market which was briefly discussed in section 4.1. On the demand side, some companies cease to advertise vacancies, and on the supply-side advertisements are not trusted as a means of indicating a vacancy actually exists. The literature has established that when there is an optimal match, there are productivity gains and barriers/matching frictions may impede this (Satchi and Temple, 2009). I argue (in another paper) that part of the low productivity that is associated with LICs like Sierra Leone is due to lack of the right skills as previously highlighted, but also because the best/most suitable of those available do not necessarily get employed. Moreover, many job-seekers often turn to the development sector because of perceived fairness in the recruitment process.

From the models presented in Table 10 and Table 11, the coefficient on age (a control variable) is positive and significant for the development sector. The result implies that older people in the labour force are more inclined to the development sector than the public and private sector. Linking this to the arguments of perceived fairness above, a positive relationship between age and choosing the development sector can be driven by two reasons: (i) older jobseekers build experience and expertise in other sectors and then move to the development sector or (ii) older jobseekers turn to the development sector after a prolonged period of search. The first reason has been observed anecdotally. One can easily imagine the former government director, nurse, teacher, implementation officer, etc. who becomes IMF, World Bank, EU, UN, WHO staff; as was the case for several of the key informants in this study. We expect this for jobseekers with ample experience. For early career/entry

level jobseekers (which is the majority of this sample), the second reason related to perceived fairness is more applicable. Focus group respondents expressed dissatisfaction with the level of nepotism and interference when applying for jobs in the public and private sector. Instead of withdrawal from the labour market, a “discouraged worker effect” leads to the majority of respondents accepting short term employment in the development sector (for instance enumeration, research assistance, internships), with the intention of building a rapport and hopefully being retained.

#### 4.4 *Heterogenous effects*

Many employers interviewed referred to the Arts faculty as a producer of NGO workers, and the majority of Science and Engineering students choose the private sector as their preferred sector. A simple chi-squared test rejects the null hypothesis that sector choice is independent of faculty (Table 12). Furthermore, from Table 9 there are statistically significant differences between faculties for all latent traits except prosocial behaviour. Assuming sector choice varies with skills-set, ability levels are likely different across different faculties, and group socialisation may likely affect risk and time preferences, desire for status and financial motivation; I reproduce the model estimated in Table 11 but taking each faculty as a sample. For this part of the analysis, I merge the sample for Engineering Pure and Applied Sciences given the relatively small sample size for each group. These two faculties are most similar based on university entry requirements. The results are presented in Table 13. Control variables are similar to the those in the previous models.

Table 12: Sector choice by faculty enrolled in

Sector	Faculty				Total
	Arts	Engineering Faculty	Pure and Applied Sciences	Social Sciences	
Public Sector	34 (38.7)	9 (13.6)	27 (24.0)	78 (71.7)	148
Private Sector	10 (16.2)	14 (5.7)	10 (10.1)	28 (30.0)	62
Development Sector	56 (45.0)	12 (15.8)	25 (27.9)	79 (83.3)	172
Total	100	35	62	185	382

Pearson  $\chi^2(6) = 21.8522$

Pr = 0.001

The results from the faculty-level analysis presented in Table 13, help to answer each of the three research questions. Firstly, from the coefficients for the measured attributes, status and prosociality remain predictors of sector choice for at least two of the groups. Financial motivation (as proxied by the reservation wage) is a statistically significant predictor of sector choice for those trained in Engineering and Pure and Applied Sciences, but the coefficient is very small. And risk averse Arts students are more (less) inclined to the public sector (private sector). This supports the initial findings that there is evidence of mission matching, but the evidence is not very strong save for status and prosociality. Further to this, there is evidence of heterogeneity as different attributes are significant for the different faculties, and the fit of the model (as measured by the F-statistic) ranges from 1.62 for the Arts faculty (which is not significant) to 69.14 for Social Sciences.

Secondly, separating the overall sample into faculties provides evidence of two dimension of the internal brain drain effect described above. For job-seekers trained in Engineering and Pure and

Applied Sciences, an increase in cognitive ability above the average level increases the probability of choosing the development sector by 14.9% and reduces the probability of opting for the private sector by 24.4%. For Social Scientists, however, the brain drain effect occurs with relation to the public sector, where more able job-seeker are less likely to choose the public sector with 14.5%, but are more likely to choose the development sector or private sector with probability 11.7% and 2.7% respectively.

Table 13: Multinomial Probit results for sector choice – including perception score for each sector, by faculty enrolled in – marginal effects presented.<sup>17</sup>

VARIABLES	Marginal effects (evaluated at the mean)								
	Arts Faculty			Engineering and Pure and Applied Sciences			Social Sciences		
	(1) Public Sector	(2) Private Sector	(3) Development Sector	(4) Public Sector	(5) Private Sector	(6) Development Sector	(7) Public Sector	(8) Private Sector	(9) Development Sector
<b>Measured attributes</b>									
res_wage_us	0.00013 (0.00032)	-0.00008 (0.00018)	-0.00005 (0.00037)	-0.00056** (0.00026)	0.00006 (0.00022)	0.00049* (0.0003)	-0.00007 (0.0001)	0.00003 (0.00003)	0.00003 (0.0001)
prosocial	-0.749** (0.327)	-0.0252 (0.243)	0.774** (0.383)	-0.674 (0.457)	-0.941** (0.420)	1.61*** (0.479)	0.399 (0.286)	-0.0704 (0.084)	-0.329 (0.289)
status_change	0.0267 (0.0278)	0.0294 (0.0191)	-0.0561* (0.032)	-0.0888* (0.0483)	-0.060 (0.0504)	0.149*** (0.0521)	-0.0638** (0.0308)	-0.0014 (0.0081)	0.0652** (0.0302)
Present_bias	0.107 (0.0972)	0.0997 (0.0662)	-0.207* (0.109)	-0.0574 (0.1602)	-0.0957 (0.192)	0.153 (0.159)	-0.001 (0.1025)	-0.0126 (0.0262)	0.0136 (0.102)
riskpremium	0.165** (0.0816)	-0.0728* (0.0417)	-0.0919 (0.0885)	0.155 (0.096)	-0.0387 (0.0594)	-0.116 (0.0812)	-0.087 (0.0545)	0.0013 (0.013)	0.0857 (0.0539)
raven_ability	-0.0784 (0.0523)	0.0162 (0.0272)	0.0623 (0.0566)	0.0946 (0.0914)	-0.244** (0.089)	0.149* (0.078)	-0.145** (0.0606)	0.0273* (0.0157)	0.117* (0.0626)
<b>Perception measures</b>									
pub1	0.548*** (0.181)	-0.110 (0.133)	-0.438** (0.205)	0.953*** (0.261)	-0.263 (0.244)	-0.689** (0.279)	1.32*** (0.241)	-0.0355 (0.0478)	-1.28*** (0.240)
priv1	0.0831 (0.0508)	0.0483 (0.0371)	-0.131** (0.0579)	0.0194 (0.0710)	0.299*** (0.0663)	-0.319*** (0.0848)	0.031 (0.042)	0.0011 (0.013)	-0.0321 (0.0435)
ngod1	-0.0442 (0.0474)	-0.004 (0.02340)	0.0478 (0.0525)	-0.114 (0.0719)	-0.197** (0.0726)	0.311*** (0.089)	-0.0747* (0.0433)	0.0241** (0.0115)	0.0988** (0.0441)
<b>Controls</b>									
Observations				97	97	97	184	184	184
Model fit	F( 28, 71) = 1.62 Prob > F = 0.0542			F( 44, 52) = 2.11 Prob > F = 0.0051			F( 44, 140) = 69.14 Prob > F = 0.0000		

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

<sup>17</sup> A few of the coefficients presented in this table has values greater than one, which may seem infeasible given the interpretation of Probit models. As Stata Support (2018) explains, such a value is possible as marginal effects give an approximation of curve by a tangent line. If the slope of the curve changes quickly, the approximation is less accurate the further away from the point. (<https://www.stata.com/support/faqs/statistics/marginal-effect-greater-than-1/>)

The perception measures are mainly robust to this specification, and in instances where the coefficient is not significant, the direction of the relationship remains. Perceptions therefore matter for sector choice at the faculty-level of analysis, and as before, provides an improvement on the model with measured attributes only.

There are pull and push factors that lead graduates to choose the development sector. Evidence from the focus group discussions and survey (

Figure 6) suggest that opportunities for training and better salaries are likely explanations for this pull to the development sector for higher ability job-seekers. Another likely reason is the perceived workload in the various sector, which was described as was both attractive and dissuading depending on the respondent. Two quotes are presented below from the focus group discussions, which represent views on either side.

*They push you in the NGO world more than government where you can be lazy. You write reports.* Participant 5, Focus Group Discussion 1.

*For my ideal job, I would love a government job. I love government job, really. You work on time with government job. With NGOs they consume your time. The work is too much.* Participant 1, Focus Group Discussion 7.

With respect to push factors, higher transparency in the recruitment process and graduate perception of fairness is one reason why graduated may be pushed toward employment in the development sector.

## **5. Discussion and Policy Recommendations**

The three research questions posed at the beginning of this paper can now be answered based on the findings of this paper. Each of these will be discussed in turn, and policy recommendations given based on each question.

- i. Do matching models widely used in economics predict the occupational choice of high-skilled graduates in Sierra Leone?

From the results in section 4.3 and 4.4, there is weak evidence that university graduates choose a sector for employment based on intrinsic motivations such as risk, time preferences, or financial motivations. The evidence is stronger for prosociality and desired status. Though the sign of the coefficients on the first three variables are in line with expected predictions in most cases, lack of significant results for these variables is likely a result of the limited opportunities available which in turn lead the decision-making process. Companies reported constraints in both the product and factors markets, as well as problems of fiscal imbalances which spill-over into the private sector and affect job creation. As such, youth employment and matching efficiencies can likely be ameliorated on the demand side (alongside the supply side), though there has been little policy action on the demand side directly, especially in relation to the formal private sector.

As a first recommendation, **policy makers need to engage a conversation on private sector development that includes the formal private sector.** Many respondents from private sector companies in this study were not aware of national or donor policies on private sector development and employment. The demand side and employment opportunities are a more likely solution to the employment problem rather than supply side policies, so policy should therefore address both sides of the labour market. Several donor programmes aimed at private sector development and employment through self-employment, but this is unlikely to be a sustainable solution, nor one that is demanded by skilled workers.

Only 10 out of 392 respondents (2.7%) chose self-employment as a preferred sector. Many respondents see self-employment at this stage in their lives as a last option and prefer safer, more stable alternatives. Many of the participants in the focus group discussions were involuntarily self-employed, utilising skills such as plumbing, hair-dressing, baking, carpentry, etc as a means of generating income while searching until a *better* option becomes available. Self-employment that was attractive for respondents required access to capital and networks, so a recurring theme was to gain employment in the formal sector as a stepping stone to self-employment. This contrast the current policy initiatives targeting youth employment in Sierra Leone which focus on self-employment as a means of employment creation. Such programmes do not benefit the skilled workforce, who end up unemployed or underemployed. It is therefore recommended that employment programmes be designed taking into account preferences of the skilled workforce (alongside the needs of lower-skilled workers). For skilled worker, the preference is not self-employment but rather formal wage employment. A second policy recommendation related to the first **is to directly support more job creation in the formal private sector.** One way of encouraging this is by rolling out more programmes similar to the NAYCOM/UNDP graduate internship programme (GIP). Such programmes help young job seekers to gain experience; and many interns have been retained, even if only for a few months. Development partners and the government should support and work together to implement such initiatives as skilled job seekers name lack of experience and political interference as key barriers to employment. The internship provides experience, and the GIP is perceived as having a fairer recruitment process to other jobs in the public sector (because of UNDP involvement).

ii. Do skilled job-seekers sort based on cognitive ability?

From section 4.3 and 4.4, there is evidence of sorting based on cognitive ability where less able job-seekers are attracted to the public sector, and more able job-seekers to the development sector. Segmenting the analysis by faculty, this general result is true for Social Scientist; and we observe a similar effect for Engineers and Pure and Applied Science graduates but with respect to the private sector (rather than the public sector). There is also sorting based on types of skills, with the majority engineers opting for the private sector, and arts students for the development sector (Table 12).

As a policy recommendation, directly related to the result above, **development partners need to be aware of the risk of an internal brain drain in their hiring policies, and the implications that has on other sectors in the economy.** Internal brain drain has been studied with respect to medical professionals (Wibulpolprasert and Pachanee, 2008), but this research provides new evidence for the non-medical labour market. In achieving growth and development, a more desirable scenario may be one where those with higher ability are generating growth in the private sector or advising and implementing policy in the public sector. The overall impact of an internal brain drain depends on the degree of aid effectiveness and how much aid contributes to growth and development nationally, which remains an ongoing debate. Relatedly, **the public and private sector need to reflect on and consider how they can become more attractive to high ability workers.** Some suggestion from the

findings include providing more opportunities for training, better salaries, and as discussed below, a fairer recruitment process.

In addition to this, the 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, to name a few. These students find it more difficult than other degrees types to find employment in the private sector. Similar reports were made by students in the Social Sciences faculty studying Peace and Conflict Studies, Sociology, and Social Work; or what some referred to in the focus group discussions as “NGO courses”. A second recommendation in this area therefore focuses **on developing skills that are demanded by the private sector**. The debate in Sierra Leone has touched on skills gap and employability; but there are two dimensions to this. There is a general issue of quality which affects the skills available, but the majority of students are not attaining skills for the private sector. The reasons for this are vast and range from poor grades at the secondary level which pigeon hole students into “less demanding” courses at the university level like the ones listed above, lack of career guidance at the secondary school level, and the simple fact that it is cheaper to educate 100 Peace and Conflict Studies students say, than 100 engineers and scientists who require technical equipment and up-to-date laboratories. There have been several calls for curriculum reform and private sector companies have met with university officials; though many fear their concerns fall on deaf ears.

In this study, the issue of poor quality education manifest 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<sup>th</sup> graders in the American system based on this cognitive ability test. So though there is sorting based on ability, ability is generally low – a sentiment echoed by several employers. From this several policy recommendations can be made, which target the **improvement of the education system from the primary and secondary level to TVET and university**. 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. The technical vocational institutions need to be strengthened and de-stigmatised to provide alternative routes to those less academically inclined. These sentiments are not unique to LIC countries like Sierra Leone; but have been echoed in other developing and developed countries alike. National and international policy should therefore be targeted and make a concerted effort address smaller targets, but ones that are significant to employers – the 80:20 principal in some ways. Basic numeracy and literacy to the level of 8<sup>th</sup> grade in developed countries is a more meaningful target than years of schooling. Similarly, setting numerical targets in the tertiary level sector based on expected demand in the private sector, which is supported at all levels in the education system, is more meaningful than simply increasing spending and subventions to tertiary institutions. 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 underemployment and unemployment among graduates. An elementary example of this is working to train *W* mining engineers, *X* automation engineers, *Y* chemists, *Z* accountants to the standards that are available in more developed ECOWAS countries like Nigeria.

- iii. What information and perceptions do entry-level job-seekers have about the labour market and how does this affect search and occupational choice?

Based on descriptive and qualitative data presented in section 4.2, entry-level job seekers have limited information about jobs in the labour market, though on average, most information is available and known about employment in the development sector relative to the other sectors. The widest

knowledge gap on perceived and actual earnings was for the private sector. Furthermore, the development sector is often perceived as being fairer in the recruitment process.

These issues therefore require access to more information, but more importantly, trust in that information. The former issue is relatively easier as government **policy should require all jobs to be publicly advertised and the terms clearer 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 vacancies do not always adhere to this policy. Therefore, the first recommendation is enforcing the policy around information availability. The second policy recommendation in this area centres on trust and credibility of advertisements. Many focus group discussants had stopped applying to job postings because they felt that *“those jobs are not for us. Advertising is just a formality”*. Policy to tackle corruption has so far focused on public financial management processes and governance at the level of central government and line ministries, with a focus on 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**. In so doing, graduates may be less *pushed* into the development sector.

## 6. Conclusions

This paper began by asking if preferences or possibilities were more important to the labour supply decision. The evidence shows that individual financial, risk and time preferences do not significantly factor into the decision-making process, which to some extent, provides evidence against traditional matching models in a small low-income country. Prosociality, status and ability surfaced as important factors. Moreover, the effects may vary based on the types of skills (or faculty enrolled in). Overall these results force us to think more critically about the factors external to the decision-maker which can drive the choice process. These factors interact with the job market and opportunities available to jobseekers. In particular, individual perceptions about sector traits and opportunities have a meaningful impact of employment choices.

This study has also been unique in identifying and exploring the development sector as a choice in its own right, considering it endogenous to the labour market. The result shows that the development sector is an attractive option and perceived favourably among university-educated youths. Reasons for this include the fact that more information on opportunities in the development sector is publicly available, and the sector is perceived as being fairer and more transparent in the recruitment 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-jobs. Both national governments and international actors need to be aware of and act on this, as such a sectoral shift and internal brain drain is an important consideration for long-term development and in particular, home-grown growth.

I will conclude with some limitations of the study and how this should be considered in interpreting the results. FBC 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 and there is heterogeneity between faculties, we might expect different results if the sample was students in more rural areas who had never lived in Freetown, or internationally in countries that look different to Sierra Leone that cause people to have different beliefs and perceptions. Related to this, further research may wish to explore how perceptions on the labour market converge in a group. For instance, is there is a “leader” that introduces a new idea and

disseminates this leading to “group think” or is it that individuals update their beliefs by accessing information outside the group themselves.

The study population of the research was clearly defined as skilled workers, an under-researched group in LIC contexts. Having said that, the results presented here may not be applicable to job-seekers of lower skills levels who are likely to have different perceptions of self-worth in the labour market, different job opportunities available to them, and are likely to search in different ways. Such workers, in essence, operate in a different market segmented by skills level.

Finally, 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 either interviews or the focus group discussions. Therefore, only speculative comments can be made. One may imagine that the mainly male-dominated public sector leads to opting out by females who attempt to avoid being assigned to secretarial and administrative roles which afford no status. This can be an area for future qualitative research in terms of fully exploring the gender dynamics of different employment choices.

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## Appendix 1: Sampling weights

Based on a 2013 World Bank study, there were 32 higher and tertiary education institutions registered with the Tertiary Education Commission in 2011. This included 2 public and 1 private university, and the balance comprising 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 the calculations before, capturing polytechnics that have begun awarding degrees. The purpose of this exercise was to determine the share of graduates that is 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 institutions leaves 14,100 students of degree awarding institutions. Secondly, the 2013 study presented data based on public higher and tertiary institutions (World Bank 2013, p.11-12 and 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 (UNIMAK, 2014). More recently, Limkokwing University opened in March 2017 and currently has 1100 students enrolled. The students of former (UNIMAK) 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 (Eastern Polytechnic, 2018). So too has, Milton Margai College of Education and Technology (MMCET, 2018). The northern polytechnics (Port Loko Polytechnic and Makeni Polytechnic) have been upgraded to university status and incorporated under the Ernest Bai Koroma University (Awoko, 2014). Based on an online review of the courses offered at these institutions and interview data, it is estimated that 10% of the students from these institutions are study for degrees (with the remaining 90% enrolled in degree 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% 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 that each FBC student 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 year students. Taken together, each student in the survey represents on average 9.7 ( $2.7 \times 3.6$ ) students 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: 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 (ICC).
- 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 A1: Data excerpt showing Raven's matrices scores

Observation	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

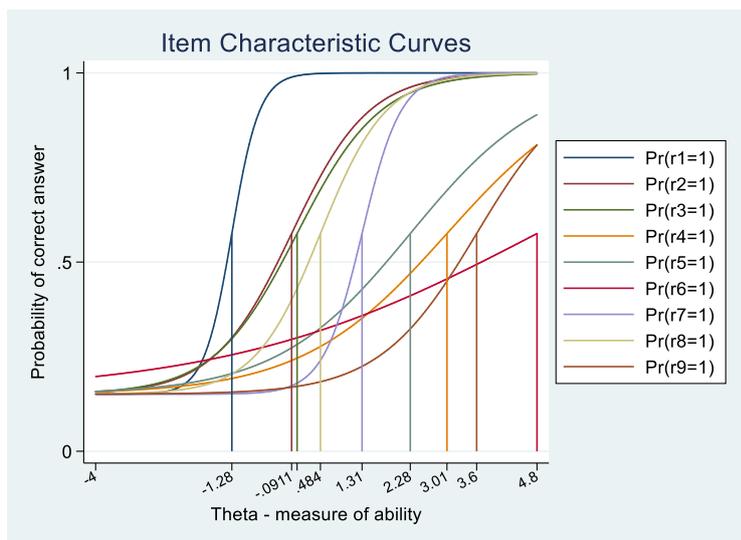
In Table A1 above, individual 2 and individual 4 have answered four questions correctly. If we summed scores, both these individuals would have the same total score. However, this does not consider the difficulty of the questions, which affects the probability of obtaining a correct response, given ability. 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 in order 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 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). Table A2 provides information on the level of discrimination and difficulty 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% change of guessing the correct answer for any question. From the second part of Table A2, question r1 is the easiest question and r6 is the most difficult. The various difficulty levels of each question can be seen from the height of the ICC in Figure A1. 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)<sup>18</sup>. The questions selected for the study were similar to those administered to 8<sup>th</sup> graders (13-14 years) in the United States. Using the 95% critical values from the standard normal distribution (-1.96 and 1.96), Figure A2 plots the expected range between which a randomly selected 95% of the respondents will score. This is 1.73 to 6.28.

Finally, using Bayesian means, the estimate of the latent trait (cognitive ability) can be predicted for each respondent. The mean ability for the sample is -0.0015 (just below average), with a standard deviation of 0.7646224, 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 A1: Item Characteristic Curves for Raven’s Matrices



<sup>18</sup> According to the UNESCO report “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).



### Appendix 3: 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  $i$  represents the number of individuals and  $j$  represents 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 job-seeker 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.

In the Table A3 below, there are 24 response categories in total (6 questions multiply by 4 options). 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. A two-dimensional category cloud is shown in Figure A3, where points are derived from the means of the individual coordinates for each respondent. The first and second principal axes accounts for 64.8% and 13.5% 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 question – 18 in this case<sup>19</sup>. We can also see from Table A4 the first two dimensions accounts for 78.3% of the variation. The rule of thumb in deciding the cut-off point for the number of dimension is the “elbow test” (Abdi and Williams, 2010). The Scree plot shows the bend in the elbow at 2 (Figure A4), 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 A3 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 moderate rankings (2s and 3s). The public sector is perceived in a similar way for training and career

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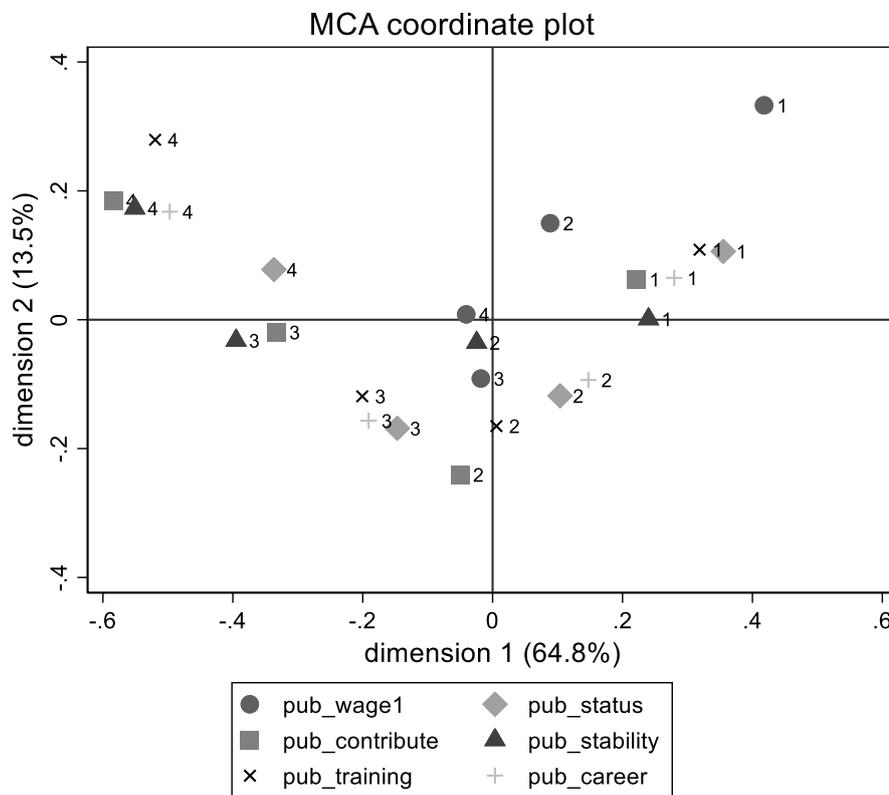
<sup>19</sup> The first 8 dimensions account for 88.85% of the variation as shown in Table A4, and the remaining 10 dimension not shown account for the other 11.15%.

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.

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

Figure A3: MCA plot of category cloud (for the public sector)



coordinates in principal normalization



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 individuals perception/ranking of the public sector. Similar methods are used to obtain measures for the other three sectors.

Figure A5: MCA plot of individual clouds

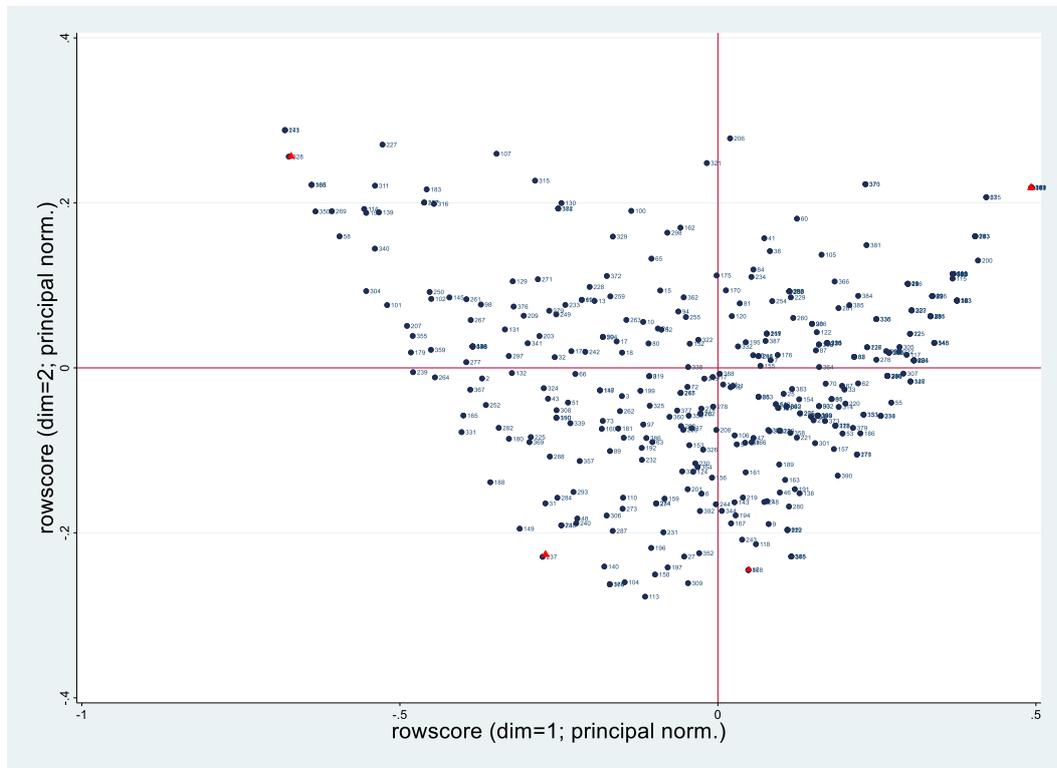


Table A5: Data extract of sector rankings by characteristic based on outlying values

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

## Appendix 4: Survey Instrument

Enumerator number \_\_\_\_\_

Date \_\_\_\_\_

### QUALIFYING QUESTIONS

1. Are you currently a an undergraduate university student?

Yes  No

2. Are you in your final year of your degree programme?

Yes  No

3. Are you studying for a health/medical qualification?

Yes  No

*NB: If the respondent answers "No" to any of questions 1-2 or "yes" to question 2, they are not eligible to take part in the study.*

*Italics indicate a note to the enumerator, and should not be read to the participant.*

These first set of questions are meant to collect some basic information about you. Feel free to ask for clarification at any time.

### Section 1: Education

1. What subject are you currently studying? \_\_\_\_\_

2. Which year of your studies are you in?

4<sup>th</sup> year  5<sup>th</sup> year

3. Why did you choose this field of study? *Tick as the respondent speaks, but do not lead with answers. Record any other answers under "other".*

I enjoy it

I can get a high paying job

I can get a stable job

I can make a contribution to society

I know a family or friend who studied this

The field is well-respected

I could not get into the course I wanted

Other \_\_\_\_\_

4. Are you enjoying your course? Please rank on a scale of 1 to 10.

1- not at all .....  10 extremely

5. What is your current GPA? \_\_\_\_\_

## Section 2: Demographics

6. How old are you? \_\_\_\_\_

7. Sex?

Male  Female

8. Which ethnic group would you say you belong to? \_\_\_\_\_

9. Where do you reside in Freetown?

East Freetown  West Freetown

10. What is the name of area? \_\_\_\_\_

11. Are you originally from Freetown? *Skip to question 13 if "yes"*

Yes  No

12. If no, which district are you from originally? \_\_\_\_\_

13. How many people do you currently live with? \_\_\_\_\_

14. How many people do you support financially? \_\_\_\_\_

15. What is your marital status?

Single  Married  Engaged to be married  Living with partner

Separated/divorced  Widowed

16. Do you have children? *Skip to question 18 if "no"*

Yes  No

17. If yes, how many children do you have? \_\_\_\_\_

18. What is the highest formal education that your father has completed?

None  Primary school  Secondary school  Vocational

Non-university tertiary  University  Post-graduate  Do not know

19. What is the highest formal education that your mother has completed?

None  Primary school  Secondary school  Vocational

Non-university tertiary  University  Post-graduate  Do not know

### Section 3: Games – ANSWER ALL Questions

In this section, we will play a series of games. There will be five (5) games and in each you will have a chance of winning cash; at the end of the survey, you will role a die, which will determine the game you receive the winnings from. You have an equal chance of being compensated for any one of the games. If you roll 1, you will get compensation based on game 1; if you roll 2, you will get compensation based on game 2, etc. Compensation will be between 0 and SLL 50,000 based on how you play. I will explain each of the games in turn. Each game will take between 1 – 5 minutes.

#### 20. Game #1

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, the certainty of getting the job. I will show/explain to you a series of choice. Please pick the one you would choose<sup>21</sup>.

*Skip to question 14 once “job 2” if selected*

	Job 1 – variable income	Job 2 – certain income	Choice
a	50% of nothing 50% chance of SLL 5 million	SLL 0.5 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
b	50% of nothing 50% chance of SLL 5 million	SLL 1 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
c	50% of nothing 50% chance of SLL 5 million	SLL 1.5 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
d	50% of nothing 50% chance of SLL 5 million	SLL 2 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
e	50% of nothing 50% chance of SLL 5 million	SLL 2.5 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
f	50% of nothing 50% chance of SLL 5 million	SLL 3 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
g	50% of nothing 50% chance of SLL 5 million	SLL 3.5 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
h	50% of nothing 50% chance of SLL 5 million	SLL 4 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2
i	50% of nothing and 50% chance of SLL 5 million	SLL 4.5 million certain	<input type="checkbox"/> Job 1 <input type="checkbox"/> Job 2

<sup>21</sup> In the actual survey, each choice of two will appear individually. The software can prevent inconsistent answers by skipping to the next question as soon as “job 2” is selected.

### 21. Game #2

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?<sup>22</sup>:

*Read as SLL10,000 or SLL100,000 in seven days, etc.*

Option	Today <sup>23</sup>	Seven days from Today	Choice
a	SLL 10,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
b	SLL 20,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
c	SLL 30,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
d	SLL 40,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
e	SLL 50,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
f	SLL 60,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
g	SLL 70,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
h	SLL 80,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time
i	SLL 90,000	SLL 100,000	<input type="checkbox"/> Today <input type="checkbox"/> Seven days time

### 22. Game #3

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	<input type="checkbox"/>
4.0	1.0	<input type="checkbox"/>
4.0	2.0	<input type="checkbox"/>

### 23. Game #4

Now imagine that you have earned 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

<sup>22</sup> In the actual survey, each choice of two will appear individually. The software can prevent inconsistent answers by skipping to the next question as soon as "today" is selected.

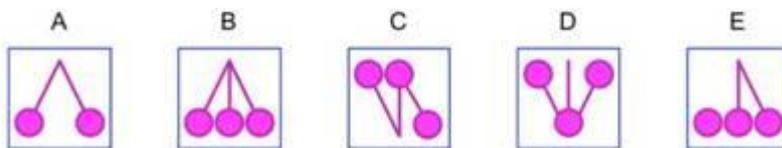
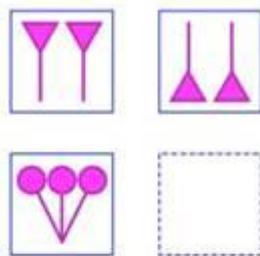
<sup>23</sup> I need to pilot this to see if the result change if I start with SLL10,000 today vs SLL90,000 today.

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? \_\_\_\_\_

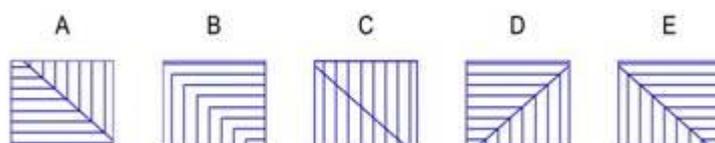
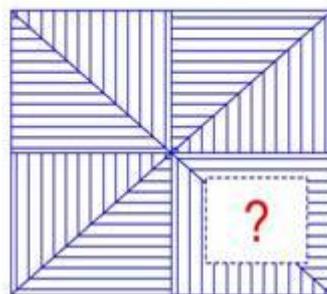
**24. Game #5**

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 6). Read the instructions carefully, then select the answer which you think is correct<sup>24</sup>.

- 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?

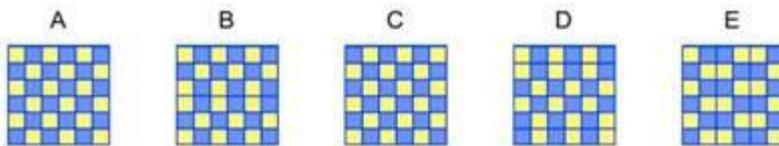
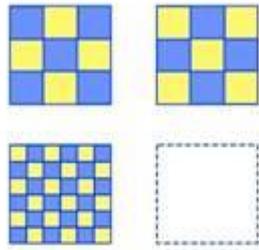


- b. Look at this puzzle. Which is the missing piece?

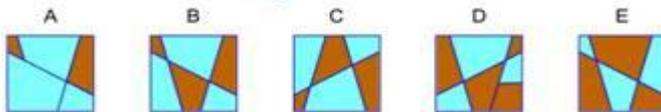
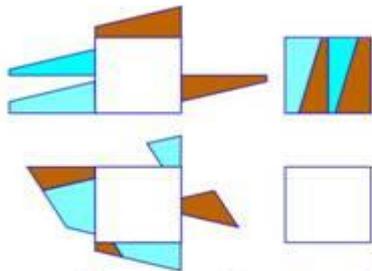


<sup>24</sup> Practice questions were given before, but it not reproduced here.

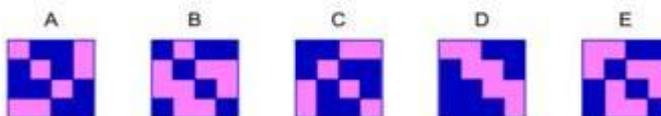
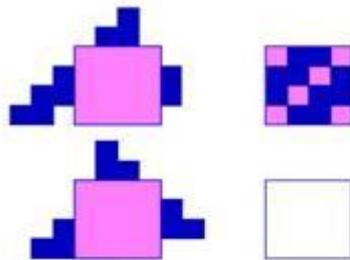
- c. Look at the squares on top. They go together in a certain way. Chose the square from the options below that belongs in the set.



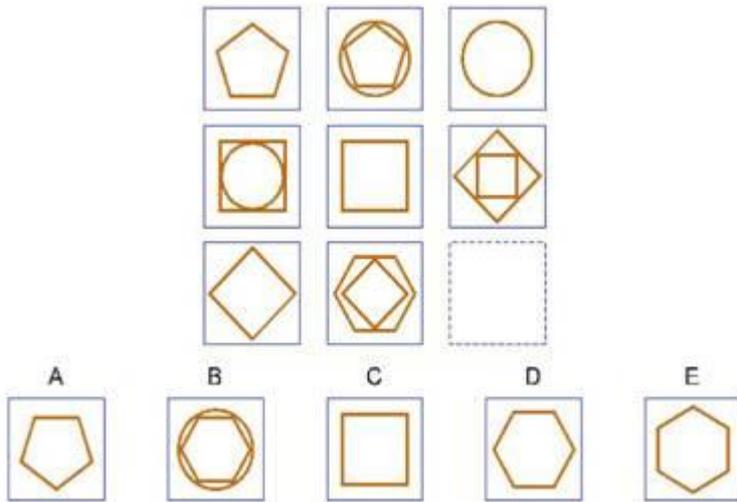
- d. Look at the pictures on top. When the outside pieces of the first square are folded in, it will look like the picture on the top right. Which of the options will you get if you fold in the pieces on the bottom left?



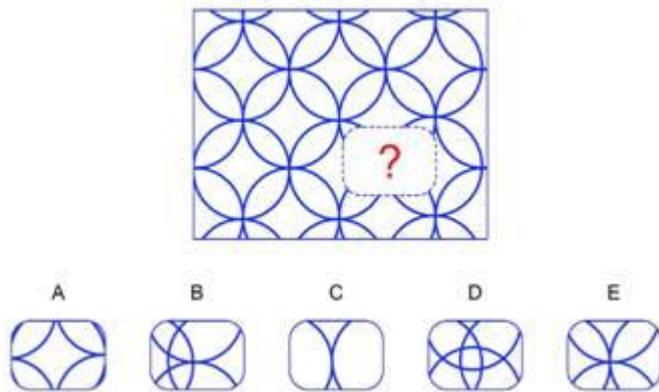
- e. Look at the pictures on top. When the outside pieces of the first square are folded in, it will look like the picture on the top right. Which of the options will you get if you fold in the pieces on the bottom left?



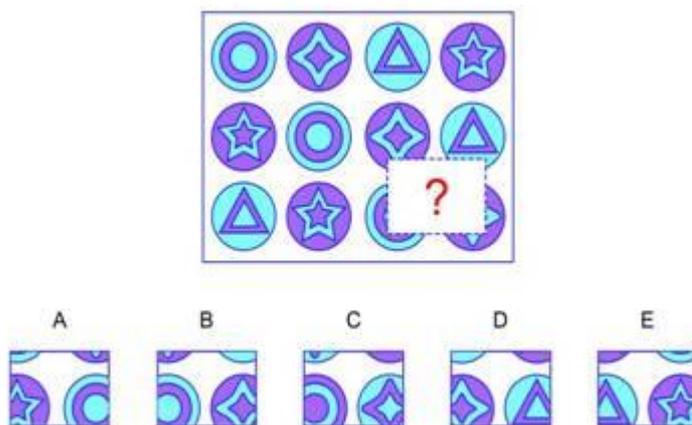
- f. Look at this puzzle. Something is missing. Which of these answer choices goes here completes the puzzle?



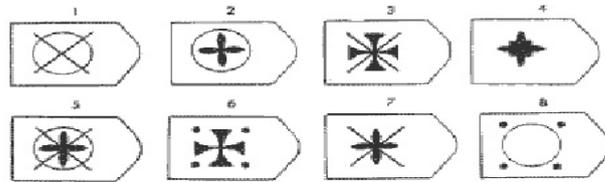
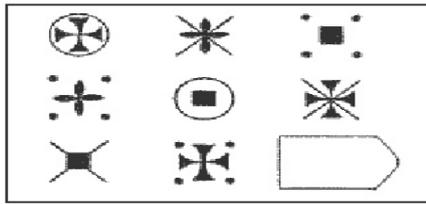
- g. Look at the pattern on top. A piece has been taken out of it. Choose the piece below the pattern that goes where the question mark is in order to complete the pattern.



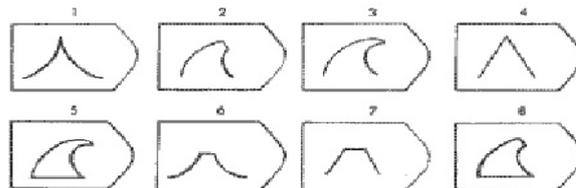
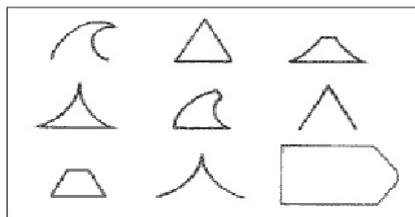
- h. A piece has been taken out of it. Which of the options completes the pattern?



i. Which of the eight option completes the sequence?



j. Which of the eight option completes the sequence



25. 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 you will like to be in five years’ time, relative to other people in Sierra Leone.

26. Think about the type of job you wish to have after you graduate. How much do you expect you will earn on average in a given month? \_\_\_\_\_
27. You stated you would earn XX in an average month. This means XXX in year. What percentage do you think each of the following will contribute toward your annual earning? *Total must be 100%.*

		Percentage
a	Basic Salary	
b	Fuel/travel allowance	
c	Housing allowance	
d	Other subsistence e.g. travel, workshop/conference	
e	Other. Please list _____	

28. Do think there will be variability in your income? *Skip to question 30 if “No”.*
- Yes    No
29. If yes, explain \_\_\_\_\_
30. What is the lowest salary you be willing to accept? \_\_\_\_\_
31. How much money do you think is necessary to maintain a comfortable life in Freetown?
32. 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.
- a. Would you be willing to wait for the better job? *Skip to question 33 if “no”.*
- Yes    No

b. If so, how long would you be willing to wait? \_\_\_\_\_

**Section 4: Perceptions**

		<b>Public Sector</b>	<b>Wage- employed Private</b>	<b>NGO/Donor</b>	<b>Self- employed</b>
33.	Based on your knowledge, how much do you think an entry level worker in your field will be paid in each of the four sectors:				
34.	Please rank the following sectors from 1-4 in terms of <u>social status</u> if someone were working in one of these sectors, 1 being the best:				
35.	Please rank the following sectors from 1-4 in terms of <u>contribution to and improvement of Sierra Leonean society</u> , 1 being the best:				
36.	Please rank the following sectors from 1-4 in terms of <u>job stability</u> , 1 being the best				
37.	Please rank the following sectors from 1-4 in terms of <u>opportunities for training</u> , 1 being the best:				
38.	Please rank the following sectors from 1-4 in terms of <u>opportunities for career progression</u> , 1 being the best:				

**Section 5: Employment**

39. Have you ever been employed, including any internships?

- Yes  No

40. What factors do you think are important when choosing a job? *Can prompt the respondent "for example the type of work...."*

---

41. On a scale of one to ten, how important are each of the following factors?

<b>Factors</b>	<b>Score of 1-10</b>
Value of salary	
Stability of income	
Length of the contract (job security)	
If the job contributes to society	
A job related to my field of study	
A job that is respected in society	
Opportunities for travel	
Opportunities for training	
Other 1	
Other 2	

42. On a scale of one to ten, how much would you say that you are willing to take financial risks?

- 1- not at all .....  10 extremely

This section will explore your work experience in four sectors: the public sector, private sector, donor/NGO sector and self-employment.

43. Have you ever been employed? *Skip to question 48 if "no".*

- Yes  No

44. Have you ever worked in the public sector? *Skip to question 45 if "no".*

- Yes  No

45. Have you ever worked in the private sector? *Skip to question 46 if "no".*

- Yes  No

46. Have you ever worked in the NGO/Donor sector? *Skip to question 47 if "no".*

- Yes  No

47. Have you been an apprentice/intern to some who started their own business? *Skip to question 48***Error! Reference source not found.** if “no”.

Yes  No

48. Have you ever volunteered? *Skip to Section 6, if “no”.*

Yes  No

49. When you volunteer, how many hours per month do you usually volunteer for? \_\_\_\_\_

What types of activities do you volunteer for? \_\_\_\_\_

### Section 6: Psychometrics

These next set of questions are based on your opinions. Please answer truthfully by saying if you agree or disagree with the statement. If you need clarification, please say.

*Enumerator, please read each statement and ask the respondent if they agree or disagree with the statement.*

		Yes	No
A	Do you think all citizens should have equal right to Sierra Leone’s resources?		
B	Is it difficult for you to support a cause that does not directly affect you?		
C	Do you think Sierra Leonean society is in danger because people nowadays are less concerned for each other?		
D	Should disabled people begging on the street be helped?		
E	Do you think all citizens are equally responsibility for the future of Sierra Leone?		
F	Do you think charity and public benefit should be supported by Government and not by citizen and businesses?		
G	Do not feel responsible for your country’s advancement?		
H	Is public interest more important than self-interest?		
I	Do you think that if any one group does not share in the prosperity of our society, then we are all worse off?		
J	Is the idea of social programmes to help the poor good?		

Now for your compensation, you will be paid based on one of the 5 games so there is some uncertainty about the actual payment based on the roll of the die.

*Enumerator, please ask participant to roll the die and give payment based on number rolled. Please record this and collect signature from recipient when payment is made.*

50. Would you like to be contacted for any follow-up data collection?

Yes  No

51. Can you provide contact details so the researcher can contact you for a follow-up?

a. Mobile number: \_\_\_\_\_

b. Email address: \_\_\_\_\_

THANK YOUR FOR YOU TIME!

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