Who you know or what you know? Job search and matching in the presence of patronage

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Abstract

This paper explores the role of networks in search and matching of university graduates. Networks are considered in relation to homophily which can arise from ethnic, political, institutional or social similarities. A simple analytical framework is developed which describes the search behaviour of firms and jobseekers in the context of networked search and patronage. Research on networked-search has chiefly sought to understand the effects at the extensive margin (being made aware of vacancies through networks), while this paper emphasises the importance at the intensive margin (being employed because of membership of a network), and the effects this has on the functioning of the labour market. Sierra Leone is used as a case study to explore these themes. The data shows that political and ethnic networks are the two most dominant in the Sierra Leonean labour market. Firms and jobseekers at the individual level, opt to utilise networks to maximise individual benefits, but this is costly to the labour market as a whole, as the information set is distorted and/or reduced, and search is likely lower. Networked-search combined with patronage therefore introduces a friction into the labour market by preventing employers and jobseekers from freely interacting with each other. Jobseekers respond to patronage by searching probabilistically and increasing applications to fairer sectors and organisations. In Sierra Leone, the perceived fairer sector is the development sector. Empirical data supports this perception as results show that candidates are more likely to be selected using visible signals like certification and grades in the development sector compared to other sectors. The outcome is higher demand for development sector jobs by workers who are not highly connected.

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1. Introduction

This paper seeks to explore how networks and social connections affect the labour market in a small developing country. In so doing, I explore the concept of homophily or social networks, looking at political, ethnic, familial and institutional networks and the effects of such networks on the labour market for skilled workers. I argue that these networks can lead to a matching friction by distorting outcomes, as labour market actors navigate these frictions. The data from this study shows that in low trust contexts where the functions of networks surpass information-sharing to include hiring based on patronage, both firms and jobseekers excessively build and draw on networks when engaging in search. Observed and reported individual behaviour reveal individual clustering to various groups/networks and deliberate efforts to become connected and use networks. Despite this observed behaviour, use of such “connections” are widely regarded as disadvantageous and harmful to the labour market collectively. As Schelling (1971, p.144) notes, “the active choice is more like congregation than segregation”; but in effect, as agents form and utilise networks based on homophily, an insider-outsider situation is created where the connected are insiders and the unconnected are outsiders.

Previous research has considered social networks and job referrals in obtaining employment, primarily focusing on the benefits. For example, networks provide more information on candidates and reduce information asymmetries (Montgomery, 1991; Calvó-Armengol and Jackson, 2004) and have been reported to be most cost-effective ways to search (Beam, 2016). I do not argue that networks are not advantageous to increasing the candidate pool if a recruiting organisation uses the networks of their employees (and their networks’ networks) to advertise vacancies more broadly in addition to general advertisement. Or if jobseekers utilise their networks to obtain a meaningful referral letter which gives a positive signal to the recruiter as shown in Abel et. al. (2017). There is evidence that the use of networks in such settings have led to matching in the labour market. This paper takes this as given but asks two related research questions:

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

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

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

I argue that once there is a proportion of unfair firms in the labour market who recruit based on homophily/networks/connections rather than ability only; perceptions and behaviour in the labour market are affected; and ultimately labour market outcomes.

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

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

The analysis in this paper largely focuses on the jobseeker side of the problem; but also draw on the firm’s decision. Primary data for the analysis is drawn from Sierra Leone. Sierra Leone provides an apt case study as few advertised vacancies are observed, there is little hiring in the formal private sector and labour productivity may be lower than potential. Alongside this, there are many unemployed university graduates in the labour market. This allows the existence of established frictions in the market to be investigated, while also exploring new ones. The data used in this paper was collected between August 2017 and August 2018 using a combination of a survey, interviews and focus group discussions. The methodology chapter of this thesis discusses this thoroughly. Methodologically, the paper utilises a mix of analytical models and data analysis. The overall analysis is an iterative one, with the primary data informing the set-up of the analytical
models and simulation; while at the same time giving empirical backing to some of the behavioural or outcome predictions of the analytical models.

The rest of the paper is organised as follows. Section two reviews the literature which has argued (and established) that little hiring may be attributed to macro-level factors related to demand and supply in the economy, in addition to factors that drive the allocation decision in the labour market. Section three define the concept of homophily as it relates to the labour market, setting out arguments as to why the use of networks emerges as a type of market friction. Section four presents a simple analytical model of the search process in the context of homophily. Section five provides illustrative evidence based on both qualitative and quantitative data on search and matching of skilled workers in Sierra Leone. Section six links this paper to the DPhil wider thesis by discussing the role of the development sector in such an eco-system. Section seven concludes.

2. Job search and matching – A review of the literature and situating the current study

Sierra Leone, like several other African countries, has not seen a noteworthy expansion in formal employment and/or boost in job creation despite an increasing skilled labour force. In Sierra Leone, informal employment still accounts for almost 90% of all employment (SSL, 2015). Evidence put forward by Pritchett (2001) show that in in several Sub-Saharan African countries studied, the growth in new educated entrants into the labour force was at least four times as large (and even up to twenty-nine times as large) as the change in wage employment (Pritchett 2001). This places attention on the differences between expected and realised returns to human capital in such countries. Importantly, it begs the question, why have we not observed an expansion in formal sector employment?

I will attempt to answer this question based on theoretical arguments and empirical evidence presented in other studies. I separate the literature into five main bodies which can be used to explain the paucity in hiring. First, I begin with macro-level factors or first-order conditions that drive aggregate employment in a country, namely demand and supply factors. Thereafter, I discuss factors that affect the allocation process as it relates to search and matching. These factors have been grouped based on overarching themes; namely: (i) information and search frictions, (ii) discrimination, (iii) networks and (iv) clientelism in the labour market.

2.1 Macro-factor that drive aggregate employment

According to Fields (2011), workers in poor countries want “good jobs” which are steady, secure and well-paid, but there are insufficient “good jobs” for those who are willing and capable. This speaks to issues of insufficient labour demand at the macro-level to absorb all workers. Labour demand is likely to be lower in contexts of stagnant economic growth (Fields, 2011). Relatedly, low levels of investment and capital accumulation is argued to limit growth and the generation of productive employment (Tan et. al, 2016;
Campbell and Ahmed, 2012, Nichter and Goldmark, 2009). Other factors postulated to positively affect the growth of firms and consequently stimulate labour demand include a favourable business environment, intra-firm cooperation, values chains in the country, and the experience and education of the owner/manager of the firm (Nichter and Goldmark, 2009). At the macro-level, theoretical and empirical evidence also identify effective public infrastructure as a contributor to raising the productivity of private investment and labour (Straub 2008; Morrison and Schwartz 1992).

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

It is possible that firms would like to hire, but issues on the supply side limit employment. For example, despite increasing populations in many developing countries, the types of workers demanded may not be readily available in local labour markets. This has become an important policy question in the development discourse with respect to skills levels of the labour force (World Bank, 2018). The question as to whether graduates are over qualified or under skilled is not unique to developing countries, but is one debated in developed countries as well (Quintini, 2011). Survey data from Tanzania show that firms reported deficiencies in technical, communication, report writing, IT and problem solving skills to name a few (Tan et al., 2016 p.29). Similar types of skill-deficits are reported in Sierra Leone (see chapter five of this thesis for a complete discussion on this). In order to alleviate the skills deficit, firms either train workers or hire expatriate staff (Tan et al., 2016 p, 36). Both these strategies can affect local employment. In the first case, if the firm absorbs some of the costs of training (and does not pass all the cost to workers in the form of lower wages) less employees will be hired. In the latter case, hiring expatriate staff is a direct substitution away from local workers.

2.2 Information and search frictions

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

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

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

Other recent studies provide evidence that the informational constraints to search may need to move beyond bringing firms and workers together, but by easing frictions with respect to selecting workers. Abel et al. (2017) show that reference letters from former employers mitigate information asymmetry and increase callbacks. In their study, they design standardised reference letter templates and encourage active job-seekers in South Africa to have it completed by a former employer. In one experiment of the three experiments in the study, the research team then submits applications with and without reference letters on behalf of the job-seeker. The results show that for the same candidate, attaching a reference letter to the application increases the probability of a response from the firm by 60 percent - from 4.2 percent to 6.7 percent; and being invited to an interview by 62 percent - from 2.5 percent to 3.9 percent (Abel et al., 2017 p.2)
Similarly, Bassi and Nansamba (2017) and Brown et al. (2015) provide empirical evidence that providing more information to employers can be beneficial to the recruitment process. Bassi and Nansamba (2017) study the effect of certification of soft skills on the beliefs of the firm and the perceived employment prospects of workers. Firms are separated in high or low ability managerial skills and results are reported based on this demarcation. The authors find that high ability managers update their beliefs on the skills of workers because of the skills certificate and workers that interacted with high ability managers update their reservation wage - an estimate of their outside option. No results were found for the subset of low ability managers. For workers in the middle of the skill distribution, revealing information through certification increased the probability of employment from 2.3 percent to 5.5 percent (Bassi and Nansamba, 2017 p.4).

2.3 Discrimination in the labour market

The literature has established that low hiring may be observed in the labour market as a consequence of low levels of labour demand, lack of an appropriately skilled labour force, transaction costs related to search, and information asymmetries that cause frictions. This literature, however, has implicitly assumed a theoretical market of impersonal exchange where there is no relationship between the buyer and seller of labour. As Arrow (1998) notes, this simple assumption breaks down in the case where there is direct personal relationship between employer and employee, or between employee and other employees. For example, the pioneering works of Becker (1957) attached disutility to Whites from entering into contracts with Blacks in America. Arrow (1971) built on Becker’s work, analysing two forms of taste-based discrimination: employer-employee and employee-employee discrimination. Taste-based discrimination are forms of non-market discrimination (Arrow, 1971). Arrow’s predicted result for both is a segregated labour market, but no wage differential between groups.

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

One explanation of observed discrimination put forward by Arrow (1971) relates to the costs associated with firing white workers because of upfront investments in labour say. If the firm has invested in training of white workers, the firm may be willing to pay white workers more as compensation for their dislike of working with black workers to prevent them from leaving the firm. Arrow’s reasoning predicts wage differentials between groups. Hence by introducing up-front investment costs which make separation costly, taste-based employee-employee discrimination can be reconciled with profit-maximising by the firm.
A second explanation consistent with profit-maximisation is statistical discrimination in cases of asymmetric information. For instance, if group A is on average less productive than group B as a result of some unobservable characteristic, over time the employer uses the observable trait of group A (say race or gender) as a proxy for the unobservable trait that is correlated with lower productivity (Phelps, 1972). Though the theory of statistical discrimination provides a market-based explanation of discrimination in the labour market, distinguishing this from non-market explanations like taste-based discrimination is difficult as this requires the ability to observe labour’s marginal product (Arrow, 1998).

Another non-market explanation relates to social capital and falls under “the theme that social linkages alter resource allocation process” to borrow the words of Arrow (1998, p97). The principle holds that although social networks are initially developed for non-economic reasons, there is still an impact on economic efficiency. It follows that the value placed on maintaining social interactions, or one’s place in the network overcomes profit maximization (Arrow, 1998). Arrow’s evidence of this stems from Granovetter’s (1974 cited in Arrow, 1998) work on job referrals through social networks. The categorisation of differing employment outcomes in the labour market in this chapter of the thesis aligns with network-based explanation as described above. As such, selected recent studies are presented in the next subsection.

2.4 Networks and the labour market

Workers have used networks to gather more information on vacancies; or use the direct influence of a contact to obtain employment. Topa (2011) synthesise the body of literature and the evidence suggests that the use of networks span continents and country income levels. In the US for example, based on the sample, estimates range from 50 to 87 percent of people who secured their jobs through networks (Topa, 2011 p.1199-1200). In the Philippines, “social networks are the most cost-effective way to look for work in the capital region” (Beam, 2016 p.33).

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

Though the use of referrals has been shown to ameliorate information asymmetries for firms and cost of search for job-seekers, there are likely negative effects that result. Use of networks in the labour market can lead to an insider-outsider situation as theorised by Calvó-Armengol and Jackson (2004) where outsiders are disadvantaged in the labour market. Such an insider-outsider effect has been shown empirically in the networks/job-referrals literature in relation to labour market outcomes. For example, Brown et al. (2015) use
firm-level data on job applications in the US to show that employee referrals are associated with an increased probability of being hired, an initial wage advantage that gradually disappears, and longer tenure at the company. Candidates referred were 7.3 percent more likely to be interviewed and 2.4 percent more likely to be hired in comparison to non-referred applicants (Brown et al., 2015 p. 181). Referred candidates hired also benefited from a 2.1 percent premium on their starting salary (Brown et al., 2015 p. 182).

Having observed the empirical evidence, Arbex, et al., (2018) built a theoretical model to show the effects of networked search on labour market outcomes. In their model, employment can be found through direct contact with a firm or through the job-seekers’ network. The authors show that networked workers are more likely to find jobs, have longer tenured contracts and earn higher wage. The underlying argument is that those who are better connected are better able to obtain referrals. Better connected in this sense implies that the connected are in turn connected to other highly connected individuals who are higher up the job ladder. It is through these connections that networked workers can be referred and negotiate higher wages and better contracts (Arbex et al., 2018 p.3).

When networks are formed around gender, ethnicity, race for example, it follows that minority groups may be disadvantaged in employment outcomes (Montgomery 1991; Tassier and Menczer 2008). Beaman et al., (2018) provide empirical evidence of this insider-outsider effect with respect to gender using a randomised control trial in Malawi. The study shows that women are statistically less likely to be referred by men, and if female referrals are made by women, they are less qualified on average. The result is that less qualified women are referred, and this is statistically different to the outcome where women apply through observing the advertisement themselves (Beaman et al., 2018 p.4).

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

### 2.5 Clientelism, corruption and the labour market

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

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

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

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

2.6 Situating the current study in the existing literature

To conclude this section, I will summarise the previous literature and the contribution of this paper. In order for there to be a thriving labour market with efficient levels of search and optimal matching, I posit that four things are needed, at the macro-level: (i) labour must be demanded by firms and (ii) job-seekers must have the requisite skills that are demanded in the labour market. With respect to labour allocation, (iii) barriers to search such as direct search costs and information asymmetries must be minimised and finally, (iv) networks should not be excessively used in the search and matching process. The first three of these features have been established in the literature presented in this section. The rest of the paper evaluates the latter of the four, and contributes to the literature by introducing network-based recruitment as a form of search friction.
3. Patronage based on homophily and networks in the labour market: A conceptual framework

“Similarity breeds connection”


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

I argue that the use (and over-use) of all types of networks to secure employment has distortionary effects in the labour market. Throughout the analysis, I refer to patronage rather than corruption, to broaden the focus beyond politic groups only. Though political connections have been shown to be important (section 2.5 above), belonging to other types of network or groups can drive employment outcomes (sections 2.3 and 2.4 above). I take a dictionary definition of patronage to be “the power of a person to give someone an important job or position”. In the analysis, the patron is someone from the same network or group as the prospective candidate (client).

3.1. The conceptual framework

According to McPherson et al (2001, p.416), “homophily is the principle that a contact between similar people occurs at a higher rate than among dissimilar people”. The term was coined by sociologists in the 1950s to explain homogeneity in social networks. In reviewing the many ways in which homophily has been conceptualised over the years, McPherson et al (2001) identify various types or causes of homophily which include race and ethnicity; sex and gender; age; religion; education, occupation, social class, geography, family ties, or organisational foci (school, church, community group). Irrespective of the cause, differences which arise from these traits translate into differences in social networks and network distances. This is especially problematic in cases of labour market discrimination or clientelism. It is for this reason that homophily becomes important to the labour market. Section 3.2 below characterises the types of homophily observed in the Sierra Leonean labour market based on empirical data.

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

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

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

As outlined above, based on evidence from existing literature, I posit that four things are needed to facilitate a thriving labour market with efficient levels of search and matching: (i) labour must be demanded by firms, (ii) jobseekers must have the requisite skills that are demanded in the labour market, (iii) barriers to search such as direct search costs and information asymmetries must be minimised and finally, as I will argue in the rest of this paper (iv) networks should not be excessively used in the search and matching process. Figure 1 graphically illustrates this conceptual framework.

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

Figure 1: Homophily in the labour market – a conceptual framework

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

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

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

3.2. Homophily in the Sierra Leonean labour market

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

Political networks appear to be the biggest and most pervasive of all types. They arise when the hiring organisation actively seeks out a political connection (in cases where a public sector organisation is hiring) or uses political influence to affect the hiring process in a private company or NGO. The latter is often part of a quid pro quo situation where the recruiter expects a future favour from the politically connected or where the recruiter complies for fear of retribution - for example non-renewal of operating licences. In the first case, the recruiter’s aim is to maximise his/her benefits from a nepotistic system, while in the second case, the recruiter aims to minimises his/her costs.

Ethnic networks form around common ethnic groups. In Sierra Leone, this mirrors political networks to a large extent as the two predominant political parties are divided along ethnic lines – the Temne and Mende. There are 15 other ethnic groups represented in Statistic Sierra Leone data, but these minority groups historically align with one of the two dominant parties. Knowledge of ethnicity in the labour market cannot be avoided in Sierra Leone as applicants can be easily sorted into an ethnic group based on their surname – which is present on all application documents. Anecdotally jobseekers muse about the power of a Krio surname. Krios are originally from the Americas and Caribbean, and often have traditionally English surnames (like Williams, Roberts, for example).

Social connections include networks comprising friends, family and members of one’s local community. Sierra Leoneans take pride in what is colloquially known as “the cotton tree culture” – a culture whereby, those endowed, provide “shade” to others in the community. Shade can range from offering a meal to helping someone to secure employment. In this case, the individual helping to secure a job in his/her social network is seen as being powerful and respected for this ability. Another incentive to secure employment for those in

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2 Kandeh (1992) discusses this in his paper: “Politicisation of Ethnic Identities in Sierra Leone”.
one’s social network is to lessen the burden if the candidate being helped is dependent on the referee for financial support.

And finally, institutional/organisational networks. Networks form around educational institutions at both the secondary and university level. Some human resource managers report drawing on connections at their alma mater and asking the respective heads of department to suggest able candidates. Lecturers who are full-time employed in industry and also engage in part-time teaching often create internships for students at their place of employment. These internships, in a significant amount of cases, lead to full-time employment. The rationale is that having been through and/or exposed to a particular pedagogical system, the employer is able to ascertain, to some extent, the type of knowledge that a graduate from that institution would leave with. In essence, some recruiters use this strategy to minimise information asymmetries in the market.

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

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

4. Modelling search in the context of Homophily - the firm and the jobseeker decisions and behavioural responses

This section aims to explore the labour market in the context of homophily using a series of decision-making models. Throughout this section, I take a similar approach to Arbex et al., (2018), Calvó-Armengol and Jackson (2004) and Ioannides and Loury (2004) assuming that there are two ways in which the firm and jobseeker can make contact: either through a network or directly without a network. The models themselves have been influenced by various search theoretic models in the literature. Rogerson et. al. (2005) survey and summarise the search model in the labour market.

First, I explore the decision-making of the firm and worker in the search process when recruitment from networks is a feature of the labour market. In so doing, I show conditions under which it is in the firm’s
interest not to advertise vacancies and/or to recruit from within their network. For the jobseeker I show that in certain situations, it will be in the jobseekers interest not to apply for vacancies, apply to some collection of firms that are perceived to be fairer (a given sector for example) and/or develop and exploit networks for personal employment gain. I do this to solidify the first part of my argument on the role of individual perceptions, incentives and behaviour in leading to an outcome.

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

4.1 The employer model

The employer observes the pool of potential recruits in the labour market and must make a selection for a current vacancy. The employer must decide if to recruit based on the response to an advertisement or from within their network. The decision is taken based on the cost versus benefits of advertising, and the type of candidate that the organisation can recruit with and without advertising. Advertising attracts a wide range of applicants which increases the chances of the match being optimal. The costs to the firm includes the (i) cost of advertising and (ii) the costs of screening. The former is simply the financial cost of creating and posting an advertisement. The latter screening cost stems from information asymmetries as theorized by Akerlof (1970) and the difficulties inherent in separating low ability from high ability candidates. Before proceeding, all variables are concisely defined below for completeness and ease of understanding.

\[ p \] – is the share of high ability workers among the pool of potential recruits, \( 0 \leq p \leq 1 \)

\[ q \] – is the share of high ability workers in the firm’s network, \( 0 \leq q \leq 1 \)

\[ y^H \] – is the value of output produced by a high ability worker, \( y^H > 0 \)

\[ y^L \] – is the value of output produced by a low ability worker, \( y^L > 0 \). \( y^H > y^L \) by definition. That is, the output from a high ability worker is larger than that of a low ability worker.

\[ N \] – is the total number of applicants that apply, \( N > 0 \). \( N \) comprises \( N^H \) high ability workers and \( N^L \) low ability workers

\[ n \] – is the number of applicants that apply from within the network without any advertisement. \( n > 0 \) and \( N > n \) by definition as \( n \subseteq N \). In other words, once a vacancy has been advertised there will be more applications submitted than the number of applications from within the network only.
$s$ - is the cost of screening each application, $s > 0$.

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

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

$w$ - is the wage paid out by the firm and earned by the successful applicant, $w \geq 0$. $w$ is fixed and not contingent on ability type. It is determined by the company’s internal pay-grade scheme for example, and advertised prior to screening.

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

Assume the share of high ability workers is $p$, and $1 - p$ is the share of low ability workers in the pool of potential recruits who generate output $y^H$ and $y^L$ respectively. An employer has access to a small segment of all potential recruits through their network, with $q$ and $1 - q$ high and low ability workers respectively. The employer has access to these workers through political, ethnic, familial, social or institutional networks, and is able to limit the candidate pool to his network. One can imagine a recruiter may know graduates from church, within the local community, or through family friends that they think may be well-suited to the vacancy. These types of networks are likely independent of the worker’s ability. The employer may also have a network where data are compiled from volunteers and interns who previously worked at the organisation. Here the network-effect is reduced as it is not based on homophily only, but on the desire not to advertise a vacancy and choose from a more familiar pool. In both cases, the employer is able to recruit without advertising.

I assume that the employer is unable to distinguish high ability from low ability jobseekers by observing university degrees due to deficiencies in the education system. In this context acquiring a university degree is not a clean signal as Spence’s (1973) model might suggest. The employer therefore screens candidates using a combination of interviews and assessments. The employer then observes the worker’s ability in the first six months of employment, a probation period. High ability here refers to someone who is qualified and is able to fulfils the job requirements successfully. The employer may or may not be able to tell ability type from within their network depending on the type of network and if network is independent of ability as discussed below.

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

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

Once the employer makes a decision to advertise or not, workers will respond, and the vacancy will be filled. I assume that there are surplus graduates in the market and vacancies can be easily filled. There are instances where a skills gap might exist, but I assume the firm then seeks out a different market where the skills are available, for example a market where expatriate workers are sourced. The advertisements and recruitments I discuss are therefore for local recruits, and advertisements are done using local media.

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

There are two cases to consider. In the first case, the employer is unable to determine the ability of those in his/her network. This arises from networks based on political, familial, social or institutional groups that are orthogonal to ability. In the second case, homophily is not orthogonal to ability and the connection may be via an educational institution, or the jobseeker having volunteered at the organisation in a previous period for example. Each of the cases are considered below.
Case 1: Network is independent of ability.

In this case, the screening quality is the same if the recruiter screens from applicants who respond to the advertisement or those in his/her network.

\[
\text{net benefits of recruiting through advertising} > \text{net benefits of recruiting without advertising}
\]

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

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

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

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

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

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

i. The larger the share of high ability workers in the pool of potential recruits relative to the share in the employer’s networker;

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

iii. The cost of screening falls

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

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

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

**Case 2: Network is not independent of ability**

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

\[
\text{net benefits of recruiting through advertising} > \text{net benefits of recruiting without advertising}
\]

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

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

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

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

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

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

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

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3 It is very common in Sierra Leone for individuals to teach part-time at the university while simultaneously working at another organisation during the day.
And finally, it may be the case that the recruiter cannot source a high ability worker from within his/her network, that is, the network is made up of only low ability workers and this is known by the recruiter. The problem reduces to:

\[
\text{net benefits of recruiting through advertising} > \text{net benefits of recruiting without advertising}
\]

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

Again, the recruiter compares the expected differences in output from recruiting from an advertisement versus recruiting from their network to the relative costs. From the left-hand side, if the firm’s screening technology is good and the firm is able to select a high ability worker, the left-hand side is positive. The firm would therefore opt for market-based recruitment, unless the benefit from nepotism \(\lambda\) is sufficiently high to make hiring a low ability worker rational. If the screening technology is poor and the firm has a high chance of selecting a low ability worker, they would recruit from within their network if \(\lambda\) is positive as the output from a recruit within or outside the network is likely to be similar. Table 1 summarises these results.

Table 1 The firms hiring decision

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

In sum, the analysis above allows the derivation of conditions under which the firm would recruit through advertisement. It has been shown that a rational firm will recruit from within their network if the conditions
in the second column of Table 1 are not satisfied. Williams and Kedir (2016) similarly show that engaging in corruption and bribery can be rationale. Network based recruitment, similar to corruption, can negatively affect systems though the decisions are rationale at the individual level.

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

4.2 The jobseeker model

4.2.1 The application decision

Firms are perceived to be fair or unfair by graduates. A firm is perceived to be fair if observed recruitment is based on ability only, and unfair if recruitment is based on some combination of ability and connectedness. Both the connected and unconnected jobseeker has information on the proportion of fair employers in the labour market. One can imagine this information is received from graduates in previous years, members of their cohort and friends employed. The unconnected jobseeker is an outsider and is aware of the share of fair employers, but not specifically which firms are fair. The connected jobseeker is an insider and is able to identify those unfair firms that they are highly connected to. The employer knows whether or not they are fair. Having observed a vacancy, the jobseeker must decide whether to apply or not. All relevant term used in the model are presented below.

\( w \) - is the wage earned by the successful applicant and paid out by the firm

\( \bar{w} \) – is the reservation wage, or outside option

\( \alpha \) – is the cost of making an application

\( \beta \) – is the share of fair firms in the market. \( 0 \leq \beta \leq 1 \)

\( \theta \) – is the ability level of the candidate

\( \gamma = \alpha(\theta) \) - the probability of a successful application. That is, the probability of being selected is based on the firm’s capacity to observe ability level. \( \alpha(\theta) = \gamma^L \) for low ability workers and \( \alpha(\theta) = \gamma^H \) for high ability workers. For high screening capacity, \( \gamma^H = \frac{1}{N^H} \) and \( \gamma^L = 0 \). Whereas for low screening capacity, \( \alpha(\theta) = \gamma^L = \gamma^H = \frac{1}{N} \).
\( \eta \) is a dichotomous variable representing connectedness. \( \eta = 1 \) if the jobseeker is sufficiently connected to be employed through his network and \( \eta = 0 \) if the jobseeker is not connected\(^4\).

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

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

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

In the case of the fair firm, where selection is purely based on ability \( (\upsilon = 1) \), the applicant’s probability of being hired for a job is \( \gamma^i \), which depends on where a separating or pooling equilibrium exist as defined above. There is a \( 1 - \gamma^i \) chance of not being selected by a fair firm.

On the other hand, a firm that is completely unfair and recruits purely based on connections \( (\upsilon = 0) \) will only be interested in networked candidates \( (\eta = 1) \). The jobseeker is able to ascertain if they are an insider \( (\eta = 1) \) or an outsider \( (\eta = 0) \) in a networked labour market. In reality, the majority of firms will be selecting on a combination of ability and networks.

The jobseeker observes an advertised vacancy and must decide if to apply given the information. The process can be analysed using the decision tree in Figure 2. If the job seeker deems the wage rate to be below his/her reservation wage \( (\bar{w}^i < w) \), he/she does not apply to the vacancy, he/she is not hired, but bears no application cost. Here, the net payoff is the reservation wage, which the jobseeker is assumed to be capable of earning without securing the job applied to. Should the jobseeker decide to apply to the vacancy, he/she will encounter a fair recruiter with probability \( \beta \), and a biased or unfair recruiter with probability \( 1 - \beta \). If the jobseeker encounters a fair firm, he/she can be successful or not, but this is entirely contingent on the jobseeker’s ability and how this matches the job description. The jobseeker therefore estimates the probability of being success as \( \gamma^i \). If the vacancy was posted by an unfair firm, the jobseeker has little confidence on being selected based on ability only and modifies the estimated probability of a successful application for that firm.

\[^4\] One can imagine that there is some threshold level of connectedness above which the jobseeker can utilise his/her network to improve employment prospects.
The payoffs for each outcome are given at the end of the final branch. If the applicant is selected, the payoff is the wage net of the cost of making the application \((w - a)\). If the jobseeker applies and is not selected, the payoff is outside option less the cost of applying \((\bar{w}^i - a)\) if the firm is fair. The decision tree is presented in Figure 2.

The payoffs in Figure 2 differ in expectation depending on if the jobseeker is a connected insider or an unconnected outsider. This results as the probability of success is modified by connectedness and the weight the unfair firm places on connections. Table 2 summarises the differences in probabilities for the connected and unconnected. From the table, \(\nu\) functions as a discounting factor by reducing the probability of success for outsiders who encounter unfair firms. Insiders have a higher (lower) probability of success (failure) relative to outsiders when the firm is unfair. The probabilities of success and failure are the same for outsiders and insiders when the firm is fair.

Table 2: Matrix of probabilities for insiders vs outsiders

<table>
<thead>
<tr>
<th>Type of Firm</th>
<th>Success/Failure</th>
<th>Insider</th>
<th>Outsider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair firm</td>
<td>Successful</td>
<td>(\gamma^i)</td>
<td>(\gamma^i)</td>
</tr>
<tr>
<td></td>
<td>Unsuccessful</td>
<td>(1 - \gamma^i)</td>
<td>(1 - \gamma^i)</td>
</tr>
<tr>
<td>Unfair firm</td>
<td>Successful</td>
<td>(u\gamma^i + (1 - u))</td>
<td>(u\gamma^i)</td>
</tr>
<tr>
<td></td>
<td>Unsuccessful</td>
<td>((1 - u) \gamma^i)</td>
<td>(1 - u\gamma^i)</td>
</tr>
</tbody>
</table>

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

\[
\text{apply} = \beta \gamma^i (w - a) + \beta (1 - \gamma^i) (\bar{w}^i - a) + (1 - \beta) u\gamma^i (w - a) + (1 - \beta) (1 - u\gamma^i) (\bar{w}^i - a)
\]

\[
\text{do not apply} = \bar{w}^i
\]

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

\[
\beta > \frac{a - \gamma^i (w - \bar{w}^i)}{\gamma^i (w - \bar{w}^i) - u\gamma^i (w - \bar{w}^i) - \bar{w}^i} = \beta^*
\]
Figure 2: Jobseeker decision process

Apply

Jobseeker

1 - β

Fair firm

Application successful

\[ \alpha(\theta') = \begin{cases} 
\nu' = \frac{1}{N} & \gamma^l = 0 \\
\nu = 1 - \frac{1}{N} & \gamma^l = 1 
\end{cases} \]

Successful, given high screening capacity

\[ w - a \]

Unsuccessful, given high screening capacity

\[ \bar{w}^i - a \]

Application unsuccessful

\[ 1 - \alpha(\theta') = \begin{cases} 
\nu' = 1 - \frac{1}{N} & \gamma^l = 1 
\end{cases} \]

Successful, given low screening capacity

\[ w - a \]

Unsuccessful, given low screening capacity

\[ \bar{w}^i - a \]

Unfair firm

Application successful

\[ \nu \alpha(\gamma) + (1 - \nu)\eta \]

\[ = \nu^H = \nu^l = \nu \frac{1}{N} + (1 - \nu)\eta \]

Successful, given high screening capacity

\[ w - a \]

Successful, given low screening capacity

\[ w - a \]

Unsuccessful, given high screening capacity

\[ \bar{w}^i - a \]

Unsuccessful, given low screening capacity

\[ \bar{w}^i - a \]

Application unsuccessful

\[ \gamma^H = \gamma^l = 1 - \nu \frac{1}{N} - (1 - \nu)\eta \]

Unsuccessful, given high screening capacity

Unsuccessful, given low screening capacity

\[ \bar{w}^i \]

Do not apply
The jobseeker will apply to the observed vacancy if the proportion of fair recruiters $\beta$, is greater some threshold $\beta^*$ which depends on the cost of applying ($a$), the relative difference between the wage rate and reservation wage $(w - \bar{w}^i)$, their perceived probability of success conditional on ability ($\gamma^i$), and relative fairness of the firm ($v$), that is, how much weight is placed on ability relative to connectedness. From the inequality above, the following can be observed in Table 3 (derivations are provided in Appendix one).

Table 3: Comparative statics of the jobseekers model given fairness of the firm is unknown

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

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

Further, the unconnected jobseeker responds to the estimated proportion of unfair firms in the labour market. If the share of unfair firms increases (or the share of fair firms decrease) the unconnected jobseeker will be incentivised to make an application if the wage rate is higher or the cost of applying is lower. Unconnected jobseekers with higher reservation wages will need to be motivated to apply by a larger share of fair firms and only the very able unconnected jobseekers will apply if the share of fair firms is low.
It follows that if the wage rate declines or the cost of applying increases, without a change in the share of fair firms in the market, some unconnected jobseekers will not apply to vacancies. Jobseekers with lucrative outside option will not participate in the labour market, and only those at the top of the ability distribution will actively participate when there are very few fair firms. These results indicate that a labour market where some firms recruit based on network, an outcome results where there is reduced search and discouraged workers who do not participate in the labour market. The results hold for those that are not connected in the labour market.

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

\[
\beta > \frac{-\gamma_i^w w}{\gamma_i^w - \nu \gamma_i^w} \Rightarrow \beta > \frac{-\nu}{1 - \nu}
\]

The right-hand side is negative. Since \(0 \leq \beta \leq 1\), it follows that when application cost is zero and the reservation wage is sufficiently close to zero, any value of \(\beta\) will still lead to applications. Another special consideration is where firm screening is high, and there us at least on high ability worker. In this case, \(\gamma^H = \frac{1}{N_H}\) and \(\gamma^L = 0\). The result is a separating equilibrium. For low ability workers, the condition reduces to \(\beta > 0\). It follows that low ability workers will still apply when firm screening is high, in instances when costs are close to zero. This is likely to explain why some candidates adopt for the “apply to everything strategy” if their costs are close to zero and they are desperate for employment. Others may reduce applications if their costs are high and/or have high reservation wages (for instance they benefit from financial support from family members or friends). The link between the predications and observed behaviour are discussed in section five based on empirical data from Sierra Leone.

**4.2.2 Updating beliefs**

Sub-sections 4.1 and 4.2.1 presented a static story for firms and jobseekers respectively. For the firm, it was shown that it can be rational to recruit from within their network; and for unconnected jobseekers it was shown that depending on the share of unfair firms in the market, some jobseekers may limit search or exit the market altogether. In this sub-section, I explore a dynamic setting by presenting an analytical description of how jobseekers update beliefs about the fairness of the labour market using a Bayesian updating process. The analysis that follows is specific to case of a separating equilibrium, where the employer is able to partition high and low ability workers using some screening technique. Where a pooling equilibrium exist, high and low ability workers have the same probability of being selected as the firm randomly samples from all
workers. There is no basis for updating in this case as the employee is unable to distinguish nepotism from poor screening.

Each unconnected jobseeker engages in the process above each time a vacancy is observed, and an application is made. This continues until a position is secured. The jobseeker updates his/her beliefs each period based on the experiences of himself/herself and others observed in the labour market in the previous period, based on a given updating rule. Before discussing the updating rule, the following variables are defined:

\[ \theta_{ls} \] is the ability of the successful candidate for the \( i^{th} \) vacancy. \[ \theta_{ls} = \begin{cases} \theta^H & \text{for high ability workers} \\ \theta^L & \text{for low ability workers} \end{cases} \]

\[ \theta_{s_{\max}} \] is the ability of the most able unsuccessful candidate for the \( i^{th} \) vacancy

\[ g_t \] is the propensity of firms to recruit on connectedness where,

\[ g_t = \begin{cases} \frac{\text{no. of filled vacancies where } \theta_{s_{\max}} = \theta^H > \theta_{ls} = \theta^L}{\text{no. of vacancies}} & , \theta_{s_{\max}} = \theta^L < \theta_{ls} = \theta^H \end{cases} \]

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

\[ \beta_t \] is the share of fair firms in the labour market at time \( t \). \[ \beta_{t+1} = z(v_t) \text{ and } \frac{\partial \beta_{t+1}}{\partial v_t} > 0, \frac{\partial \beta_{t+1}}{\partial g_t} < 0 \]

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

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

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

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

From the decision tree above (Figure 2), it follows that a primary incentive is thus to become more connected in a bid to increase the probability of success, if the jobseeker believes more weight is assigned to connections when recruiting. This is one of several responses of the jobseeker.

### 4.2.3 The jobseeker response – an individual action

Having updated the estimated probability of fair firms in the market, the jobseeker responds in one of three ways (Figure 3). Firstly, by only applying to jobs that are perceived to be fair; secondly by attempting to build networks and to become connected, or thirdly by exiting the formal labour market altogether. The options are not mutually exclusive. Jobseekers may do a combination of the first two with varying intensities, or swap between options one/two and option three at different points in the search process.

**Figure 3: The jobseeker response**
The first response is tantamount to crossing observed unfair organisations off the list of potential employers to apply to. Relating this back to subsection 4.2.2 above, for a given firm, if the jobseeker applies, is not hired and observes the ability level of the successful candidate $\theta_s$ to be less than his/her ability $\theta_i$, the jobseeker updates his/her beliefs on the weight the firm places on ability but may also decide not to apply to said firm in the future. The jobseeker may also draw conclusions on the industry or sector the firm operates in if similar observations are made of other firms in the same sector or industry. In so doing, the jobseeker makes future applications to a subset of all employers, and within this subset, the proportion of fair firms $\beta'$ is perceived to be larger than the overall proportion $\beta$. Alternatively, the applicant calculates a new $\beta_j$ for each sector $j$, and applies primarily to the sectors with higher $\beta'$s.

The second response attempts to influence the value of securing employment through connections - $\eta$. By seeking out networks and becoming connected the jobseeker is happy to apply widely with the hope of building and using connections to become employed in the future. This can manifest in several ways. For example: volunteering as an intern for free at an organisation, asking a friend or family member to submit one’s CV even when no job has been advertised, joining various social and political clubs, or even physically going from organisation to organisation to submit CVs with the hope of meeting someone who can help.

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

All three responses outlined above changes the composition of the pool of potential recruits and networks of firms. Recall from section 4.1, there are $p$ and $q$ high ability workers in the potential pool of candidates and firms network respectively. If jobseekers attempt to improve connectedness to enhance their chances of success, $q$ will change in the employer model. In the case where $q$ increases (relative to $p$), this may lead to the firm increasingly recruiting from within their network and advertising less. This reinforces the strength of networks and is symptomatic of a divergent process that is not self-correcting. In other words, as more jobseekers attempt to and become connected, firms are less incentivised to advertise if the share of high ability workers in their network increases. This in turn increases the value of being connected, so more jobseekers aim to become connected, etc, etc. A vicious cycle emerges were the importance of networks becomes increasingly high and obtaining employment without being part of a network becomes increasing rare. This imposes a negatively externality on some agents in the labour market.

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

4.3 The labour market outcome – a collective result

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

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

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

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

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

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

Figure 4: Negative externality from the overuse of networks in the labour market

In Figure 4, I assume that the marginal private benefits (MPB) of using networks is the wage rate from employment and this fixed at some value \( w \). This equals the marginal social benefit (MSB) as I assume under perfect competition the wage rate equals the employee’s value addition to the firm and by extension society. A horizontal MPB=MSB curve also follows from the implicit assumption in the jobseeker model in section 4.2 that the use of networks increases the chances of obtaining a job; but does not affect the level of earnings. The marginal private costs (MPC) of expanding and utilising networks increase with the size of the network so the curve is upward sloping. This lies below the marginal social costs (MSC) curve as the social marginal cost considers MPC as well as the third-party costs imposed on some firms and jobseekers when others use networks. These third-party costs or negative externalities were discussed in 1-3 above.

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

Figure 4 is drawn in such a way that the socially efficient level of network usage is not zero. This stems from the fact that some use of networks can be good in the labour market based on both theoretical arguments and empirical studies as discussed in section two of this paper. Information asymmetries on worker type
resulting from a poor education system may imply some use of networks in recruitment can positive. Another theoretical perspective is that large inefficient bureaucratic systems may require “greasing the wheels” to achieve a more efficient outcome (Bouzid 2016; Williams and Kedir 2016). Empirically, there is evidence to suggest that political connections may be good for firm performance in Africa. I therefore do not suggest that the use of networks is altogether harmful, but the excessive use of networks might be. Importantly, the effect on the labour market depends on if networks are used to share information, rather than to circumvent ability-based recruitment and recruit based on patronage.

From the simple decision-making models presented in this section, several behavioural predcitions can be made which have been observed in the labour market in Sierra Leone. On the firm side, some firms will not advertise if they have ready access to a network of jobseekers, and if they are able to identify high ability workers in their network. Some firms may not advertise if advertising leads to high screening costs, or information burdens from candidates being suggested for hire. Some firms may advertise and simultaneously select from their network if the reputational value of advertising is high. The result is incomplete and/or inaccurate information in the labour market.

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

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

The models above have looked at the employer and job seeker separately, and the interactions between the two have been discussed the dynamics of the jobseeker updating their beliefs. In the next section I provide empirical evidence form the labour market in Sierra Leone as an illustrative case of the theoretical arguments made in this section.
5. Evidence and discussions – an illustrative example from the data

This section draws on a mix of data collected from focus group discussions, interviews and CVs of over 200 recent graduates in Sierra Leone. All names have been changed to protect anonymity. The data have been analysed in such a way as to provide an illustrative example of the analytical model present in section 4. This section first presents the empirical data and subsequently links this data to sections three and four by consolidating data and theory. The main aim of this section (in combination with section four) is to answer the two research question of this paper, that is: How does the existence of such networks and homophily more broadly affect decision-making and behaviour in the labour market? And (ii) Is the observed outcome an optimal outcome for the labour market?

5.1 Observations from the labour market – Search and Matching for Skilled Workers in Sierra Leone

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

Mohammed, Economics Graduate 2012 – unemployed in 2017

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

Alpha, Business and IT graduate 2012 – employed in 2017

“I liked auditing and forensics. I wanted to work for the government. I applied but it’s political. I was accepted at [organisation name removed] and [organisation name removed]. I took the job at the second one. It might be harder now getting a job for me. I am a Conteh so they will know I am not Mende.”

Aminata, Accounting graduate 2016 – employed in 2017
Mohammed’s, Alpha’s and Aminata’s story are not unique. These three examples were extracted from the data to illustrate that homophily and use and effects of networks in the labour market spans gender, area of study, types of organisation applied to and current employment status.

There are many like Mohammed who share accounts of being side-lined in the recruitment process for another candidate who may not necessarily be better, but is better connected. Connections, connectivity, nepotism, favouritism, discrimination were all words used to describe what graduates perceive as one of the biggest challenges in the labour market. According to respondents, connections affect both the creation of jobs, and the allocation of jobs. Fewer jobs are created as workers inside the system negotiate contracts to work beyond the legal retirement age, and resurface as experts on fixed-term contracts. This limits progression up the organogram and prevents new vacancies being created at entry level positions. With respect to allocation, a dominant theme arising from the focus group discussions (as shown in Mohammed’s and Alpha’s stories) is that meritocracy can at times be second to patronage in the selection process. This perception is common among the unemployed who are still searching, but also those who are permanently employed. Aminata’s account gives evidence of the pervasiveness of political and ethnic homophily, which is further discussed in sub-section 5.2 below. The analysis that follows is positioned within the search and matching literature and focuses on the allocation rather than the creation of jobs. Based on interview and focus group discussion data I describe and discuss how jobs are advertised, and how candidates are screened and recruited.

The majority of organisations interviewed advertise using print and online media, and at times, radio advertisements. Some companies also outsource to recruitment firms such as Careers.sl, AfRecruit, Revolutum and Job Search. The UNDP-funded Career Advisory and Placement Services also works with these recruitment companies and various employers to advertise vacancies and in the past, 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 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 precuring the information, for example, the cost of buying a newspaper or accessing the internet. However, jobseekers complained that some positions were not advertised, and even positions that were advertised “were not for them”. There is a culture of mistrust among jobseekers based on responses in the 14 focus group discussions (across 70 respondents from various disciplines and years of experience in the job market). The majority of respondents believe that job advertisements are merely a formality and candidates have already been cherry-picked by the employer either from their network, or as a favour to someone else (political or otherwise).
As such, the majority of respondents who were just about to enter the job market anticipated high spells of unemployment and estimated waiting at least a year before finding full-time employment. Those who had been searching for at least a year already (some up to ten years) had all but given up hope of finding a permanent job and relied on: (i) working informally as a barber, hairdresser, electrician/plumber, making and selling cakes, tailoring, (ii) engaging in short-term casual work to gain experience (usually related to donor funding) e.g. working as an enumerator on a project, (iii) teaching – science and engineering graduates, and some social science graduates, often teach at private schools on a part-time basis, (iv) volunteering for free in the formal sector with the hope of being absorbed and/or (v) relying on friends and family members for financial support. For those employed, some had waited up to 7 years before securing a permanent job, while others were employed immediately after graduating.

Lack of confidence in the recruitment process is not without reason, as many HR managers reported facing external pressure on hiring decisions which led to “having their hands tied” to the situation, and simply adhering to instructions from above. Respondents commonly referred to “interference”, “connectedness” and more colloquially “sababu or potato leave, cassava leave fambul” to indicate the series of networks that they perceive have become more important to employment than merit. Jobseekers perceived this as a form of labour market discrimination based on ethnicity, political affiliation, or affiliations through alma maters.

It is possible that the unemployed may explained their employment state by lack of connections, rather than failure on their part to secure a job as a result of their ability or low levels of search. I therefore analyse data collected on the subset of employed people only. Table A1 in the appendix presents data collated from respondents who were full-time employed at the time of the second round of data collection in August 2018. The data in its purest form in Table A1 is qualitative in nature and drawn from snowball sampling. As such, I do not attempt to conduct any statistical analysis given the size and nature of the sample. Albeit, some interesting patterns can be discerned from the data. 13 out of 30 respondents knew someone working at the organisation at the time of making an application. Three respondents reported that they had never made a job application, but were gainfully employed. All three were connected to someone at the organisation before being hired. Two of these three were interns and then interviewed when a vacancy arose. The third was informed by a friend employed at the organisation to attend an interview.

It follows that those who were not connected at the time of applying made more applications, on average, since graduating and faced a longer average waiting period between applying and securing their current employment (Table 4). Based on the 30 respondents, the boxplot in Figure 5 shows that there was more variability in search experience among the unconnected versus the connected in terms of applications made and waiting time between applying and being made an offer. This gives an indication of the precarious nature of job-search for those unconnected in the labour market. For instance, one unconnected jobseeker made up to 50 applications, while the maximum for a connected jobseeker was 20 applications.
In keeping with the sector-level analysis from Paper One of this thesis, I separate the sector of employment into the public, private and development sectors (See Appendix two). Some interesting patterns emerge from the data at the sector level. Five out of eleven respondents employed in both the public and private sectors were connected at the time of applying, a share of 45.5% each. This is marginally larger than the 37.5% in the development sector (three out of eight) – but not statistically different. Furthermore, in the development sector, connections appear to play a role in recruitment at the local NGO level, but not at INGOs or donor organisations. As noted above, the analysis is not statistically robust, but corroborates other qualitative data from focus group discussions.

Table 4 Search Experience of Employed Respondents (averages with standard deviation in parenthesis)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Connected (n=13)</th>
<th>Unconnected (n=17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Applications</td>
<td>4.27 (6.03)</td>
<td>14.71 (13.50)</td>
</tr>
<tr>
<td>No. of Jobs Held</td>
<td>1.46 (1.56)</td>
<td>1.71 (1.36)</td>
</tr>
<tr>
<td>Time between Applying and Offer</td>
<td>2.77 (4.27)</td>
<td>6.13 (1.36)</td>
</tr>
</tbody>
</table>

Figure 5: Search experience of connected versus unconnected employed graduates (n = 30)
5.2 Political connections as a key friction

Political interference in the labour market was cited as the most dominant friction. As Aminata’s experience above illustrates, there is widespread belief that the jobseeker must be politically connected to secure a job in the public sector. In addition to this, employers from all sectors report political pressures to hire certain worker and often refer to “lists that come from State House” that suggest which candidates should be invited for an interview, or even hired. Examples of this are given below.

“There was some political influence in 2011, but management understood what I was trying to do. But now it’s bad. Back then, the GM used to bring a list from State House, from the First Lady’s office. Now they just say take this person, give this grade. From the Ministry, State House. Not even an interview. The GM says they’ve done us a favour so take this guy and see if he performs. We had an IT guy we had to let go. Sometimes those brought in like this, they do perform. But we as HR prefer them to come through a recruitment process. I don’t think the other staff members know who comes in like this. Just HR because we need to fix the paperwork.”

Human Resources Manager, Private Sector Company

“When I applied for this job in 2007, it was fair. It’s not like that now. It used to be based on qualifications, but not now. Now I am not sure I would get this job with my experience since I am not politically connected.”

Manager, Government Organisation.

I use CV data to further explore the claim that political affiliation (and by extension ethnicity) influence labour market outcomes by teasing out basic relationships between indicators of ethnic/political/regional affiliation and the labour market experience of university students. As noted in Kandeh (1992), ethnicity has been politicised in Sierra Leone. Research participants submitted their CVs to be considered for an internship which was organised by this research. From the CVs submitted, data was extracted on the work experience of jobseekers (mainly internships and part-time work during the degree programme), as well as their ethnicity and area of origin. The latter two variables were triangulated using the data collected in the survey.

Casey (2015, p.2415-2416) estimate loyalty for a political party by taking the share of voters of a given ethnic group who reported voting for a particular party. A score was calculated, which the author uses to classify ethnic group by party affiliation to one of the two major political parties - the All People’s Congress (APC) or Sierra Leone People’s Party (SLPP), or unaffiliated. The All People’s Congress (APC) was the ruling party between 2007-2018. I use the classifications from Casey (2015) to sort jobseekers by expected political affiliation based on their reported ethnicity in the survey I conducted. Data for 150 university leavers show...

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5 See the methodology section and chapter one of this thesis for more on this.
that the respondents belonging to the main ethnic group associated with the opposition party at the time, the SLPP, had a lower median work experience in the public sector (Figure 6). In other words, 25 percent of respondents belonging to ethnic groups affiliated with the APC party or unaffiliated to any party had no experience in the public sector, while 50 percent of those affiliated with the opposition SLPP had no public sector work experience. The result is especially noteworthy as the midpoint of the distribution does not vary across groups for the development and private sector. Ignoring Casey’s (2015) classifications and focusing on the two main ethnic groups only, the patterns are similar (Figure 7). The only difference among ethnic groups relates to the public sector. As shown, over 50 percent of those identifying as Temne had at least one job in the public sector, while at least 50 percent of those identifying as Mende had no public sector experience. This is expected as then ruling APC is seen as the Temne party and the SLPP the Mende party.

Figure 6: University students’ experience in the labour market by political affiliation (n = 150)

![Figure 6](image)

Figure 7: University students’ experience in the labour market by ethnicity (n = 86)

![Figure 7](image)
I then exploit data on regional origins of the jobseeker’s family as another proxy for political connections. Traditionally, the Northern areas of the country has been dominated by the APC party (Casey, 2015; Kandeh, 1992). As shown Table 5, jobseekers of northern origin had more experience overall, and in the public and private sectors, but not the development sector. The difference between means is statistically significant at the 10% level for overall experience and experience in the public sector. The difference observed is smallest in the development sector.

Table 5 Average number of jobs held by area of family origin

<table>
<thead>
<tr>
<th></th>
<th>Northern Origin Obs = 54</th>
<th>Other Origin Obs = 100</th>
<th>p-value $(H_0: \mu_n = \mu_o)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall experience</td>
<td>2.22 (0.20)</td>
<td>1.76 (0.13)</td>
<td>0.0565</td>
</tr>
<tr>
<td>Public sector experience</td>
<td>1.00 (0.14)</td>
<td>0.70 (0.087)</td>
<td>0.0681</td>
</tr>
<tr>
<td>Private sector experience</td>
<td>0.69 (0.12)</td>
<td>0.50 (0.078)</td>
<td>0.2012</td>
</tr>
<tr>
<td>Development sector experience</td>
<td>0.54 (0.098)</td>
<td>0.56 (0.089)</td>
<td>0.8626</td>
</tr>
</tbody>
</table>

The number of observations used for this analysis is small; and given that the data is on work experience of graduands about to enter the labour market the number of jobs held is likely to be lower on average than for those who have been in the labour market for an extended period. The data is still useful to explore a trend that was highlighted in the qualitative data that politically connected individuals are more likely to obtain employment in given sectors.

5.3 Information versus inefficiency – a behavioural response to patronage rooted in homophily

“If you have no connections, it’s a miracle to get a job. We say ‘degree nah get bad luck’. It means there’s no harm to having a degree. There will be an opportunity in the future. But you need to have connections. So we try.”

Julie⁶, BA Adult Education and Community Development

“The manner in which these organisations advertise, they suppress it. Some do not even advertise. They stay internally. Then they pass it to friends and family. Then there is the mindset. A number of Sierra Leoneans do not have skills e.g. drive test engineers. They do not have the skills and try to use connections to get the job.”

Swaray, Electrical and Electronics Engineering graduate 2014 – employed in 2017

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⁶ Name changed to protect interviewee’s identity.
“We have a bunch of CVs. We have an HR information software. There is rarely a time we go outside of this. This is the first point of call. For my position, it was clandestine. In secrecy, to avoid interference. Now, I need a warehouse supervisor. I need someone with integrity. Politicians try to influence. The issue with letting these people in is that they bring negative energy to the rest of the staff. Then they are protected and they will protect others. I want to avoid this.

Human Resources Manager, Private Sector Company

“For a given year, there are 4-5 positions created because of new projects. Sometimes we don’t advertise because of government bribery and withholding certificates. People call from State House with names of people for the job. If we don’t comply, we’re not in Government’s good books. So we go based on references. We ask colleagues. One project asked us to advertise. There was so much interference. This project was partially funded by the Government”.

Director, Local NGO

The behavioural effects of homophily and networks are apparent on both the demand and supply side of the labour market. Firms and workers respond, either embracing a nepotistic culture or refuting it, and the decision results in various behaviours in the labour market. It should be noted that in Sierra Leone (as discussed in the context chapter of this thesis), a buyer’s market exists as there are few vacancies being created, but many graduates entering the labour market each year. This is an important feature for understanding what is observed on the supply side, and the lessons that can be drawn.

On the demand side, companies reported that they respond to external pressures (and minimise reprisals from failing to carry out suggested hires) by not advertising certain positions externally, or absorbing current/former interns and volunteers, referring to their pool of CVs or asking for personal recommendations. This overcomes issues of external interference to some extent; but limits the pool of eligible candidates. It also does not fully overcome standard information asymmetry in the labour market (Spence, 1973). Aside from this inefficiency from failing to advertise, there is likely a pooling equilibrium as traditional signals do not work, and employers find it difficult to distinguish “high ability” from “low ability” jobseekers because of fake degrees and students reportedly buying grades from lecturers and paying other students to take their exams for them. Many organisations complained about not having the resources/staff to properly vet candidates. In addition to this, from a human capital perspective, employers do not think the education system (from primary school to university) is actually developing the right skills, or even basic skills in literacy and numeracy.

There are thus two types of firms that emerge in the data - compliers and non-compliers. Compliers embrace networks and (i) use their contacts to advertise vacancies, (ii) place value on referral letters from trusted sources in their network and (iii) importantly, would hire a candidate that has been suggested to them over
another candidate that may be of equal or higher ability. Compliers see the benefit of networks to provide information, but may also be willing to hire a lower ability candidate because of some utility that is derived from that person being part of their network. Non-compliers derive informational benefits from networks as in (i) and (ii) above; but refrain from patronage and therefore would not hire a candidate on account of nepotism over merit. These firms are “fair recruiters” in terminology of section four. An example of a complying firm is given by the private sector company quoted at the beginning of this sub-section, while the NGO is an example of a non-complier.

With these two types of firms existing in the market, the first and obvious outcome is the informational gain which helps in screening candidates. This is particularly useful if the firm is not able to distinguish applicants based on the quality of their degrees. The second outcome relates to the optimality of the match and is conditional on the type of worker hired. If the utility from nepotism is sufficiently high for the recruiter - be it for political, ethnic social or institutional reasons - the recruiter (on behalf of the firm) may hire a candidate with ability lower than optimum. This has implication for the firm’s productivity, and importantly, for jobseeker’s perception on the fairness of the labour market.

On the labour supply side, there are two types of workers, those that are connected and those that are not connected. Firstly, the unconnected limits search intensity and reduces the number of applications submitted in comparison to if the labour market were fair. Due to distrust in the system, applicants cannot tell which jobs are legitimately open until they reach the final stages (as in Mohammed’s case), so many update expectations and do not apply to avoid wasting time and resources. In other words, there is a discouraged worker effect for some unconnected workers (see Box 1). From the data, those who had been searching for at least a year already (some up to ten years) had all but given up hope of finding a permanent job and relied on working informally as a barber, hairdresser, electrician/plumber, making and selling cakes, tailoring while occasionally engaging in short-term casual work such as working as an enumerator on a project.

As discussed in section four, this reduces the candidate pool for those companies trying to recruit the best candidate. Secondly, the unconnected makes a judgement based on observed data over time as to which firms, or groups of firms are fair and which are not. Based on this, applications are shifted from the unfair to the fair firms. An example of this strategy is applying to jobs at donor organisations, INGO and foreign-owned and managed organisations that are perceived to be fairer. Thirdly, the applicant attempts to become connected, thereby increasing the likelihood of a successful application in the future. All three strategies were observed in the primary data (Box 1).
The effects do not end here, as labour market interactions are ongoing over many periods. Given that some non-connected job seekers limit their applications because of perceived unfairness, firms that are non-compliers incur a cost because of the actions of the nepotistic firms that change the behaviour of some jobseekers. For these firms who wish to use networks for increased information but not direct candidate selection, there is now a smaller applicant pool when a vacancy is posted as a percentage of jobseekers lose trust in information/advertisements generally and reduce the number of applications made.

Moreover, given that some percentage of jobseekers are now actively trying to become connected and use their networks to secure employment (in response to not being able to find a job without connections in the context of little job creation); there is added pressure on those who are connected to refer people in their networks to firms that are hiring. Non-complying firms respond to this by limiting the number of vacancies that are advertised for fear of interference and candidates being suggested. Non-compliers instead restrict themselves to trusted network (where the risk of direct patronage is smaller) and/or hire recruitment firms to discretely head-hunt on their behalf. Public advertising diminishes as a strategy to manage influence from networks that engage in patronage. This then causes information friction as there is less observed vacancies.

Furthermore, since some fair firms start using networks to recruit (because of pressure from those who are trying to help the jobseekers that are trying to use networks because of the existence of some nepotistic

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**Box 1: Job-seeker responses in the labour market**

“You need three things for getting a job: social relations, technical skills and to be highly connected. I am trying to build connections. As for now, I am a trained and qualified electrician and plumber. I trained at GTI. I use this to make money.” Male, BSc. Social Work

“It is very difficult to get a job these days. For us, the sciences, the easy way is to teach. I was teaching Physics and Further maths. I went with no paper. I had not graduated yet. But they allowed me to work as a volunteer. They observed my teaching and then asked me to formally apply. Then I got the job.” Male, BEng Civil Engineering

“I worked on a survey. After the survey, I set aside some money for business, like petty trading. I sent my friend with money to Guinea to buy groundnut oil and leave it at these offices.” Female, BSc. Financial Services

“For me, I can do designs. I can braid hair, bake cake, I can be a small proprietor. But I prefer to be employed. But I don’t only have to depend on my education.” Female, BSc. Commerce

“I will engage in other business while looking for work. Like hairdressing and food selling, like shawarma.” Female, BSc. Linguistics
compliers to begin with), there will be fewer fair firms in the market. The process observed in visually illustrated in Figure 8 below.

Figure 8: The Search Process

1. Some proportion of firms recruit based on nepotism in the labour market.
2. Job-seekers estimate probability of a successful application for a given sector and decide to apply or not to apply for a vacancy.
3. Job-seekers apply to jobs and observe success rate of themselves and others in the labour market.
5. Job-seekers improve likelihood of a successful application by: (i) applying to fair firms and (ii) trying to use connections.
6. Some fair firms limit the number of vacancies advertised for fear of interference and use networks.

The response at the individual firm and jobseeker level to utilise networks can be clearly seen as a self-interested strategy as this maximises the firm/recruiter’s desire to either find a good candidate, engage in deliberate nepotism or minimise unwanted external influence. For the jobseeker in the given context, this may be the best strategy to secure a job. Section four formalised and discussed the firm’s and jobseeker’s decision based on their respective incentives. Here I will conclude this section by discussing some likely consequences and in so doing, address the two questions posed at the beginning of this paper, that is: (i) How does the existence of such networks and homophily more broadly affect decision-making and behaviour in the labour market? And (ii) Is the observed outcome an optimal outcome for the labour market?

Following the logic described above, the prediction is a fairly dystopian labour market. Once there are some firms that are using networks to recruit workers that are less able than unemployed jobseekers, jobseekers perceive the labour market as unfair either exiting, shifting focus to fairer firms or attempting to use connections themselves. In so doing, a burden is then placed on initially fair firms as there is now more connected jobseekers seeking jobs. These firms then turn to their networks, thereby becoming an unfair firm. The end result will see the majority of worker seeking to be, and ultimately being connected to someone within the organisation before they are hired. There are some exceptions where the costs of nepotism are high, and the firm remains fair - for example donor organisations and international NGO who are externally accountable to international donors and governments.

As discussed above, of the 30 employed respondents 43 percent knew someone within the organisation before they applied. Furthermore, there is also the belief that the labour market has become less fair overtime as some workers do not believe they would be hired in their existing roles should they apply now.
in a currently more nepotistic and networked labour market. Recruiters also report increasing external pressures to hire connected individuals.

The perception that the labour market is getting more connected is both a prediction of and crucial mechanism in the theory. It demonstrates that there has been some response by firms and workers to an initial level of patronage, and the response has worsened the system. If the dominant belief is that there is an increasingly nepotistic labour market were homophily is a key requirement, it follows that the incentive will be to become more connected, making the presence of homophily and patronage in the labour market even more dominant.

The practice of recruitment through networks leads to a combination of the following: (i) less information in the labour market as fewer firms advertise, (ii) fewer candidates applying for advertised vacancies as some become discouraged, (iii) higher hazard rates and/or underemployment for some higher ability workers and (iv) less able workers in some positions. The former two affect the search process and the latter two the match observed in the labour market. Ultimately, recruitment through networks can be seen as an ill and is disadvantageous to the labour market. Respondents are cognisant of this and see connections as one of the biggest challenges in the labour market which needs to be addressed.

This is reminiscent of the Schelling (1971) model where individual incentives lead to a collective result that is less desirable to society as a whole. In the famous segregation model, Schelling demonstrates that even mild preferences at the individual level for similar neighbours can lead to highly segregated neighbourhoods. This body of literature recognises that in cases of complex systems, individual behaviour can have striking effects on a collective result, even though such effects may be unintended by, or even undesirable to, the individual.

A similar phenomenon emerges in this study. The majority of firms would like to be able to find and hire the best candidates; and most workers would like to be able to observe all vacancies and be selected based on merit. However, once some percentage of firms hire based on networks, the incentives of some workers and firms will be to use connections to secure a match. The system then reduces to one that is nepotistic with connected insiders securing jobs over the outsiders, though the majority of agents in the labour market would prefer a freer, fairer labour market. The outcome is thus sub-optimal. Moreover, if being connected is correlated with other sociodemographic measures such as income, gender or urban vs rural place of birth, connections in the labour market would serve to reinforce existing social inequality. In this case, the outcome is both inefficient and unequitable.

6. The development sector in a networked labour market – leveraging fairness as a practical strategy

One of the three jobseeker responses identified in Figure 3 and discussed in section 4 is a shift away from unfair sectors to perceived fairer ones. This manifests as a pull toward the development sector in Sierra
Leone. In other contexts, this need not be the development sector, but whichever sector or industry is perceived to be fairer. Evidence of the push toward the development sector is presented in this section. In so doing, a link is established between this chapter the thesis as a whole, which aims to understand the effects of the development sector on the labour market in small developing countries.

A dominant perception was that the development sector was fairer than the public and private sector, and within the development and private sector, foreign organisations were less nepotistic. This may be on account of such organisations being inherently more transparent due to donor funding and associated obligations and/or having access to a smaller network in comparison to local organisations. Extracts from the focus groups discussions are presented below:

“It’s more easy to get an NGO job because of qualification, not nepotism. In developing countries, NGOs bring jobs. One NGO would have 3 projects. Then the NGO can have 500 staff. The private sector is controlled by the politicians as well. The advertisements is for the internal audit. The private sector is a branch of the government. The foreign banks are more transparent.”

Male, BSc. Banking and Finance

“I sent my CV to a recruitment agency after I graduated in 2017. 3 weeks ago, I got a call. I forgot I applied. It was March/April. I met these foreign guys – one Indians and one black foreign guy. The company is [organisation name removed]. It’s affiliated with [organisation name removed]. They called on Saturday. I got the job. I don’t really know the company. I will be a business development person. For health. The interview was at Ecomed. I used AfRecruit to find the job. I frequently use the online search engines. Only the UNDP job and this job was no connections.”

Female, BSc. Information Systems

“I apply to the NGOs. I had an interview at [organisation name removed], but the difficulty is experience. I am open to any sector, but 90% of the jobs I see on the job-link are NGOs. You hardly see government jobs. I drop my CV but I don’t hear from them. The NGOs believe in transparency, they call. So I apply to them. Most interviews I get is with NGOs.”

Male, BSc. Human Resources

“There are places that are based on merit. Like the INGOs, DFID, UN. I mean you can get a job through connections, but I expect it to be more on merit.”

Male, BSc. Peace and Conflict Studies

Triangulating the findings from the qualitative data with data collected from the survey (conducted in August 2017, the perception of the development sector as fairer is substantiated. The survey asked respondents if they had any work experience, and if so in which sector. Unlike the CV data used throughout this chapter,
the survey data does not capture the number of jobs per sector, but simply if there was work experience in the sector (a binary variable). There are more observations from the survey data in comparison to the CV data, which enables more robust quantitative analysis. Probit models are then used to determine if reported Grade Point Average (GPA) is associated with gaining experience in a particular sector. I use GPA as a proxy of ability as recruiters often request transcripts when hiring interns.

GPA scores are likely an imperfect measure of ability given the existence of grade fraud in Sierra Leone⁷, however given the short-term nature of internships, aptitude tests are rarely done as the costs of such screening outweigh the benefits associated with temporary tenure. Furthermore, GPA scores are a constant and common signal to all employers while pure measures of ability as a predictor is conditional on the screening quality of the recruiter. Finally, jobseekers are often aware of others’ GPA and use this as a barometer of employability. Using GPA scores as a proxy is thus sufficient for understanding perceptions of fairness.

Of the 392 students surveyed, 233 had some type of work experience. 110 had experience in the public sector, 74 in the private sector, 62 in the development sector and 10 shadowing someone in self-employment⁸. Table 6 shows the regression results from three separate sector-specific Probit models. Average marginal effects (AME) are reported. AME is understood as the average change in probability of having employment experience in one of the three sectors when a regressor changes, ceteris paribus.

The primary variable of interest in the model is GPA as the coefficient indicates the change in the probability of being employed in a sector associated with a higher GPA score. The most striking result is that higher GPA is associated with a higher probability of employment experience in the development sector only. This corroborates the perception of relative fairness of the development sector which emerged from the qualitative data. From Table 6, a 0.001 unit change in GPA increases average the probability of having experience in the development sector by 0.0213 percent. The result is significant at the five percent level. Furthermore, the faculty of enrolment (which indicates the types of skills to a large extent) is related to development sector experience but not private or public sector experience. Social Scientists and Pure and Applied Scientists are more likely than Arts students to have development sector experience, while Engineers are comparatively less likely.

Personal attributes like age and gender are not associated with development sector experience in the model, while these traits are significant in the public and private sector models. Being older or female is correlated with public sector experience, while being younger and male with private sector experience. With respect to ethnicity, relative to Temnes (the reference group in the three models), all other groups are more likely to

⁷ See context chapter of the thesis for a discussion on this.
⁸ The sum all sector experiences is larger than the number of respondents ever employed as some respondents had experience in multiple sectors.
have development sector experience. One potential explanation is that Mendes, Krios and others ethnics perceive the development sector as fairer and thus self-select into the sector leading to clustering of these ethnics in the development sector. Krios and Mendes have a lower probability of having public sector and private sector experience respectively.

The quantitative data therefore shows that the development sector is conspicuous for selecting based on a signal of ability (GPA) and/or skills sets (faculty of enrolment). Understandably, some jobseekers assign a higher probability of employment to the development sector and in expectation, this sector becomes more attractive. The results are robust to various specifications of the models such as excluding all controls or including interaction effects between: (i) GPA and faculty, (ii) GPA and ethnicity and (iii) ethnicity and being originally from Freetown.

Table 6: Probit regression results for sector experience

<table>
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<th>VARIABLES</th>
<th>(1) Public_Sector</th>
<th>(2) Private_Sector</th>
<th>(3) Development_Sector</th>
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<td>30.88***</td>
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Obs = 233
The baseline group for Ethnicity is Temne and for Faculty, the baseline is Arts
Standard errors in parentheses. Standard errors are calculated based on sample weights.

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

It should be noted that model does not capture likely omitted variable such as social/familial networks as there is now data on these ties.
In the first paper of this thesis I argued that the development sector impacts on early-career occupational choice of young skilled workers as the majority (44 percent) of university leavers opt for employment at a development sector organisation (NGO, INGO or donor organisation). The probability of choosing the development sector was also shown to increase with cognitive ability. Based on the arguments in this paper, it follows that even though some workers may not have preferred employment in the development sector a priori, patronage in other sectors pushes these workers into the fairer development sector. From section five of this chapter, if high ability workers observe lower ability workers being hired ahead of them, one of the behavioural responses is to apply to firms that are perceived to be fairer. This is the development sector in this case. It thus follows that if a higher share of higher ability non-connected workers applies to the development sector, the sector will employ a higher share of high ability workers relative to other sectors.

At the macro level, this has implication for the internal brain drain effect discussed in the first paper of the thesis, but at the micro-level, movement to the development sector is a completely rational and likely optimal response for those unconnected and unable to obtain employment. This is thus another example of individual behaviour impacting on an aggregate system. In the quest to avoid nepotistic firms and become employed at the individual jobseeker level, the aggregate system may see a movement of high ability workers to the development sector.

7. Conclusions

There is evidence of nepotism and patronage in the labour market. I do not try to quantify how many or what percentage of firms/workers in the labour market use connections to secure employment. More importantly, what matters is that some firms do and that there is the belief among jobseekers that such behaviour exists. The perceived prevalence of biased recruitments varies from individual to individual based on their experience in the job market. The jobseeker who has been unable to find a job for an extended period while observing his/colleagues in employment is likely to be less positive of the labour market. These beliefs matter for decision-making and behaviour. In such a situation, it is expected and observed, that jobseekers apply heuristics and probability judgement when deciding to apply for jobs. Connections, networks, homophily are thus likely to create a market friction and prevent smooth interactions between jobseekers and recruiters.

Actions by agents in the labour market (both firms and workers) pollute the information set and limit the amount of information available to everyone in the labour market. As jobseekers and firms engage in search and make hiring decisions; their private actions to utilise networks change conditions in the labour market and encourage perceptions of unfairness. This imposes a cost on those wishing to access and use information in the labour market. Some firms may limit the information they provide, and the number of vacancies posted, and some applicants may not respond to vacancies posted because of perceptions of unfairness. The result is that there is less information available to some firms and jobseekers that are searching based on
merit and desire full information. Moreover, some firms may advertise as a formality, without genuine intentions of recruiting based on the advertisement. In this instance, the information is not credible as some applicants who respond incur the costs of applying with little to no chances of being recruited. Using connections or networks in the labour market therefore imposes a third-party cost or a negative externality on firms and workers that either choose not to use such networks, or on those that cannot access such networks. For these two groups, there is reduced chances of an optimal match. The response of firms and jobseekers may also worsen the situation. On the jobseeker side, some jobseekers may opt-out and not apply for certain jobs that are perceived to be for those with connections. In the Sierra Leonean context, there is a push toward the fairer development sector.

The above effects all relate to individual perceptions and behaviour, which in turn impacts the collective system that is the labour market and the economy more broadly. For instance, human capital choices are distorted, productivity and output are likely lower than potential, and there are distributional implications if some jobseekers are excluded from the labour market. Exploring and depending our understanding of the perceptions and behavioural responses to patronage is the main contribution of the paper. I have argued that the use of networks in itself may not be disadvantageous if networks are used to identify candidates and/or to provide preliminary screening. Issues arise when the firm is willing to trade off ability for connectedness. The trade-off negatively effects the ability distribution of the employed, but also fosters perceptions of unfairness in the labour market.

References


Appendix 1 - Derivations

The expected pay-offs for applying and not applying are given below.

\[
\text{apply} = \beta y^i(w - a) + \beta (1 - y^i)(\bar{w}^i - a) + (1 - \beta)\nu y^i(w - a) + (1 - \beta)(1 - \nu y^i)(\bar{w}^i - a)
\]

\[
do\ not\ apply = \bar{w}^i
\]

Applying this condition, the candidate applies if:

\[
\beta y^i(w - a) + \beta (1 - y^i)(\bar{w}^i - a) + \nu y^i(1 - \beta)(w - a) + (1 - \beta)(1 - \nu y^i)(\bar{w}^i - a) > \bar{w}^i
\]

\[
\beta \left[y^i w - y^i a + \bar{w}^i - a - y^i \bar{w}^i + y^i a - \nu y^i w + \nu y^i a - \bar{w}^i + a + \nu y^i \bar{w}^i - \nu y^i a \right] + \nu y^i w - \nu y^i a + \bar{w}^i - a - \nu y^i \bar{w}^i > \bar{w}^i
\]

\[
\beta > \frac{a - \nu y^i w + \nu y^i \bar{w}^i}{y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)} = \beta^*
\]

Taking \( \beta^* = \frac{a - \nu y^i(w - \bar{w}^i)}{y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)} = \frac{\nu}{\nu} \) and \( |U| \leq |V| \) since \( 0 \leq \beta \leq 1 \)

\[
\frac{\partial \beta^*}{\partial a} = \frac{1}{y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)}
\]

\[
\frac{\partial \beta^*}{\partial a} = \frac{1}{(y^i - \nu y^i)(w - \bar{w}^i)}
\]

Both the numerator and denominator are positive. This means that as the cost of applying increases, unconnected jobseekers require a larger share of fair firms in the market to apply for vacancies.

\[
\frac{\partial \beta^*}{\partial w} = \frac{-\nu y^i V - (y^i - \nu y^i) U}{[y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)]^2}
\]

\[
\frac{\partial \beta^*}{\partial w} = \frac{-\nu y^i[y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)] - (y^i - \nu y^i)[a - \nu y^i(w - \bar{w}^i)]}{[y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)]^2}
\]

\[
\frac{\partial \beta^*}{\partial w} = \frac{\nu y^i[a - y^i(w - \bar{w}^i)] - y^i[a - \nu y^i(w - \bar{w}^i)]}{[y^i(w - \bar{w}^i) - \nu y^i(w - \bar{w}^i)]^2}
\]
\[
\frac{\partial \beta^*}{\partial w} = \frac{vy^i a - vy^i (w - \bar{w}^i) - y^i a + vy^i (w - \bar{w}^i)}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial w} = \frac{vy^i a - y^i a}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial w} = \frac{(vy^i - y^i) a}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2}
\]

The denominator is positive, and the numerator is negative. The derivative is therefore negative. This means that as the wage rate decreases, the unconnected jobseeker will desire a greater share of fair firms in the labour market to incentivise job applications.

\[
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{vy^i V - (vy^i - y^i) U}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{vy^i [y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i) - a + vy^i (w - \bar{w}^i)] + y^i U}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{vy^i [y^i (w - \bar{w}^i) - a] + y^i [a - vy^i (w - \bar{w}^i)]}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{vy^i^2 (w - \bar{w}^i) - vy^i a + y^i a - vy^i^2 (w - \bar{w}^i)}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{-vy^i a + y^i a}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial \bar{w}} = \frac{(y^i - vy^i) a}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2}
\]

Both the numerator and denominator are positive. In words, as the reservation wage increases, a larger share of fair firms will be needed to incentivise applications.

\[
\frac{\partial \beta^*}{\partial y} = \frac{-v(w - \bar{w}^i) V - [(w - \bar{w}^i) - v(w - \bar{w}^i)] U}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2} \\
\frac{\partial \beta^*}{\partial y} = \frac{v(w - \bar{w}^i) (U - V) - (w - \bar{w}^i) U}{[y^i (w - \bar{w}^i) - vy^i (w - \bar{w}^i)]^2}
\]
\[
\frac{\partial \beta^*}{\partial \gamma} = \frac{v(w - \bar{w}^i)(a - v\gamma^i(w - \bar{w}^i) - \gamma^i(w - \bar{w}^i) + v\gamma^i(w - \bar{w}^i)) - (w - \bar{w}^i)U}{[\gamma^i(w - \bar{w}^i) - v\gamma^i(w - \bar{w}^i)]^2}
\]

\[
\frac{\partial \beta^*}{\partial \gamma} = \frac{v(w - \bar{w}^i)[a - \gamma^i(w - \bar{w}^i)] - (w - \bar{w}^i)[a - v\gamma^i(w - \bar{w}^i)]}{[\gamma^i(w - \bar{w}^i) - v\gamma^i(w - \bar{w}^i)]^2}
\]

\[
\frac{\partial \beta^*}{\partial \gamma} = \frac{va(w - \bar{w}^i) - (w - \bar{w}^i)a}{[\gamma^i(w - \bar{w}^i) - v\gamma^i(w - \bar{w}^i)]^2}
\]

\[
\frac{\partial \beta^*}{\partial \gamma} = \frac{(va - a)(w - \bar{w}^i)}{[\gamma^i(w - \bar{w}^i) - v\gamma^i(w - \bar{w}^i)]^2}
\]

Here the denominator is positive, and the numerator is negative. The derivative is therefore negative. This means that as the share of fair firms decreases only higher ability applicants will apply.
### Appendix 2: Search Experience Data

#### Table A1 Search Experience of Employed Respondents

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<th>Connected to organisation before applying</th>
<th>Degree</th>
<th>No. of jobs applied to</th>
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