EFFECT OF SOCIAL CAPITAL ON LABOR FORCE PARTICIPATION IN KENYA

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DECLARATION

I declare that this thesis is my original work and neither part nor whole of it has ever been presented for any academic award in any other university.

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APPROVAL

The thesis has been submitted for examination with my approval as university supervisor

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DEDICATION

I dedicate this work to my parents, Francisca and Julius Mwatu, for their unwavering support and commitment towards my education and for bringing me up as a hardworking and responsible citizen of this great nation. The work is also dedicated to my two siblings, Nthenya and Kalee for the many life sacrifices they made so that I could study. I am forever indebted to you. May God bless you.

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ACRONYMS AND ABBREVIATIONS

CCF	Chancelor's Career Fair
DMHDS	Dunedin Multidisciplinary Health and Development Study
GHS	General Household Survey
GSS	General Social Survey
ILO	International Labor Organization
IRCA	Immigration Reform and Control Act
KIHBS	Kenya Integrated Household Budget Survey
Ksh	Kenya Shillings
LFS	Labor Force Survey
LOGMFEES	Logarithm of subscription fees to Parents-Teachers Associations
NEA	National Employment Authority
PTA	Parents-Teachers Association
U.K	United Kingdom
US	United States

ABSTRACT

The aim of this study was to examine the effect of social capital on labor force participation in Kenya. Whereas human capital is necessary, social capital is an adequate factor for successful participation in the labor force in the country. More specifically, social capital was found to be a resourceful tool in allocation and distribution of labor market information to job seekers thus facilitating an efficient search and matching process. Symmetric flow of information drives the labor market towards an efficient equilibrium, mitigating possibilities of market failure due to asymmetry of information in the search and matching process.

In realizing the objective of the study, data from the 2015/16 Kenya Integrated Household Budget Survey was used in the analysis. The control function approach proved powerful in addressing endogeneity. Estimation of effect of social capital on labor force participation was done using Tobit model. The findings indicated that social capital has a positive and statistically significant effect on labor force participation in Kenya. Specifically, if an individual's stock of social capital increased by 1%, labor force participation was found to increase by 2.65%. Males were found to participate in the labor force for more hours (.35) than females. Individuals living in urban areas were similarly found to participate in the labor force for more hours (.035) than those in rural areas. Every 1% increase in an individual's age was found to be associated with a 1.1% improvement in labor force participation. Individuals possessing KCPE, KCSE, DIPLOMA, and DEGREE had an average labor force participation of .15, .30, .19, and .08 hours more than those with no educational attainment. Economic agents possessing the post-graduate level of educational attainment were, however, found to have lower labor force participation (1.58 hours) compared to those with no educational qualification.

Key Words: Social capital, Informational symmetry, Market failure, Labor force participation, Efficient equilibrium.

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CHAPTER ONE

INTRODUCTION

1.1 Background

In Kenya today, human capital is a necessary[1] but insufficient condition for successful participation and progression in the labor market. Informational asymmetry between job seekers and employers prolongs the job search and matching process, resulting in poor participation and progression in the labor market.

The World Bank (2003) defines social capital as institutions, social networks, relationships, trust and norms that shape the quality and quantity of interactions in a society. Aquilera (2002) argues that social capital is created through relationships, associations and interactions among economic agents. According to the study, social capital is an institutional resource with the potential of shaping behavior of economic agents and thus economic outcomes. Information is the most important resource embodied in social capital. A symmetrically informed economic agent is empowered to make more rational decisions regarding participation in the labor force.

Brook (2005) defines social capital as networks, together with shared norms of trust, values and understanding that facilitate cooperation within and among groups. He goes further to provide a framework for measurement of social capital as membership to social, cultural, economic, political and leisure groups. Membership to such groups enhances the frequency of seeing, speaking and interacting with other economic agents possessing unique information about who is employing, the hiring-wage, on-the-job wage growth and desirable non-wage characteristics of a job such as promotion. As economic agents interact in their social networks, they exchange information related to demand for and supply of labor through a bonding, bridging and linking process. This nudges job seekers and potential employers to engage in a directed search and matching process. Social capital is thus not only a necessary incentive for enhanced labor force participation, but also a sufficient one, coupled with human capital, for driving the labor market towards an efficient equilibrium.

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[1] Educational human capital is necessary for successful participation in the labor market because it serves as a filter that selects economic agents into the market based on the signal of their intrinsic abilities (Spence, 1973).

It is important to note from this definition that social capital as networks developed through interactions among economic agents enhances "who you know" as a source of current and future information pertaining demand for labor, specific job description, wage rate and job promotion (Granovetter, 1974). Human capital, on the other hand, which is "what you know" is in and of itself, an insufficient condition for successful participation and progression in the labor force. This is so because a job seeker characterized by high human capital but no social networks as sources of social capital faces informational asymmetry and may not secure a job as fast as those with many, reliable and trustable social networks. As economic agents interact repetitively, they become more familiar, the level of trust grows and the likelihood of helping one another through information flow regarding job opportunities increases.

Some job seekers may not be searching for jobs actively simply because besides the job search process being costly, they do not know which firm has open job opportunity and the prevailing hiring wage rate. Further, career progression for those already working may not depend on marginal productivity, but rather on institutional factors of trust, shared norms and reciprocity that stem from how well an employer knows and trusts current employees.

Tassier (2006) argues that network structure, which is an embodiment of social capital, affects information flows thus affecting labor market outcomes. Network structure refers to how wide, in terms of the number of non-redundant social networks, that an economic agent has. If one has more non-redundant social networks, then they are exposed to more and unique job-related information. Better-informed searchers in the labor market make more informed decisions pertaining labor force participation.

In light of the above propositions, social capital can play a key role in addressing informational asymmetry affecting the search and matching process in the Kenyan labor market. This is possible through exchange of information. Through bonding, bridging and linking, social capital can make the job search and matching process more efficient while making the labor market move towards a perfectly competitive equilibrium. Consequently, efficiency in the job search and matching process would improve labor force participation and progression in Kenya, addressing the prevailing unemployment challenge and boosting economic growth.

1.2 Research Problem

According to International Labor Organization (2014), whose labor standards Kenya ratified, the appropriate age to participate in the labor market is between 15 and 64. *Figure 1* shows convergence between percentage growth in working-age population and total population in late 1970s. Before this point, the working-age population was growing slower than the total population. However, after the convergence point, the working-age population started growing faster than the total population.

Figure 1: Growth in working-age and total population between 1955-2015 in Kenya (%)

Source: UNDP 2013
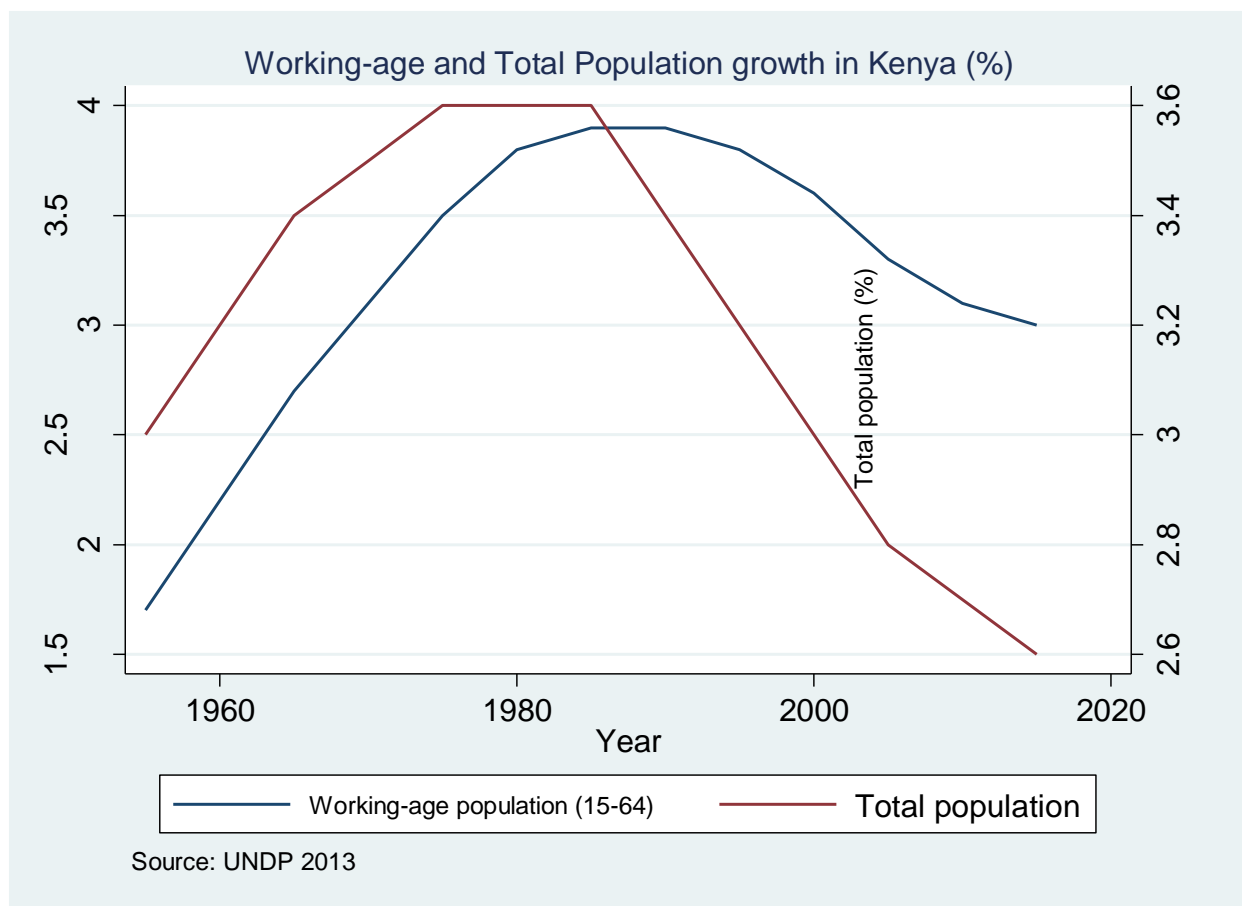
The above scenario is both good and bad for the Kenyan economy. It is bad if the larger proportion of the working-age population, irrespective of its human capital, has given up from participating in job search or despite actively being involved in the search process, is unable to secure a job or promotion if already employed. In such a situation, for a given level of human capital, this rapidly growing section of the population would remain unproductive, thus not contributing to economic

growth of the country. That is dead human capital. On the other hand, a working-age population that grows faster than total population would be good if, given a certain level of human capital, is largely in the labor force with current employment or those actively looking for work or job promotions being able to secure them within a shorter period of time, to avoid hysteresis. In such a case, a working-age population that is engaged in the labor force through having employment and those searching for job opportunities or promotions being able to secure them within a shorter time, is economically productive and contributes towards growth.

The World Economic Forum (2017), which generates Human Capital Index in a scale of 0-100, ranks Kenya in position 78 globally with an index of 59.48, placing the country within 2 points adrift of the global average of 62. However, Human Capital Development Index for Kenya is higher than the overall average of 52.97 for Africa as a whole. Coming closer home, Kenya is second after Rwanda in terms of Human Capital Development in East Africa. Based on these facts, one would not be wrong to assert that Kenya has commendably high level of human capital stock.

Data on Index of Human Capital per Person for Kenya obtained from the Federal Reserve Bank of St.Louis (2016) further reinforces the above observation as shown in *Figure 2*. Per Person Human Capital Index for the country has been increasing at an increasing rate since early 1970s.

Figure 2: Per Person Human Capital Stock for Kenya

Source: Federal Reserve Bank of St. Louis
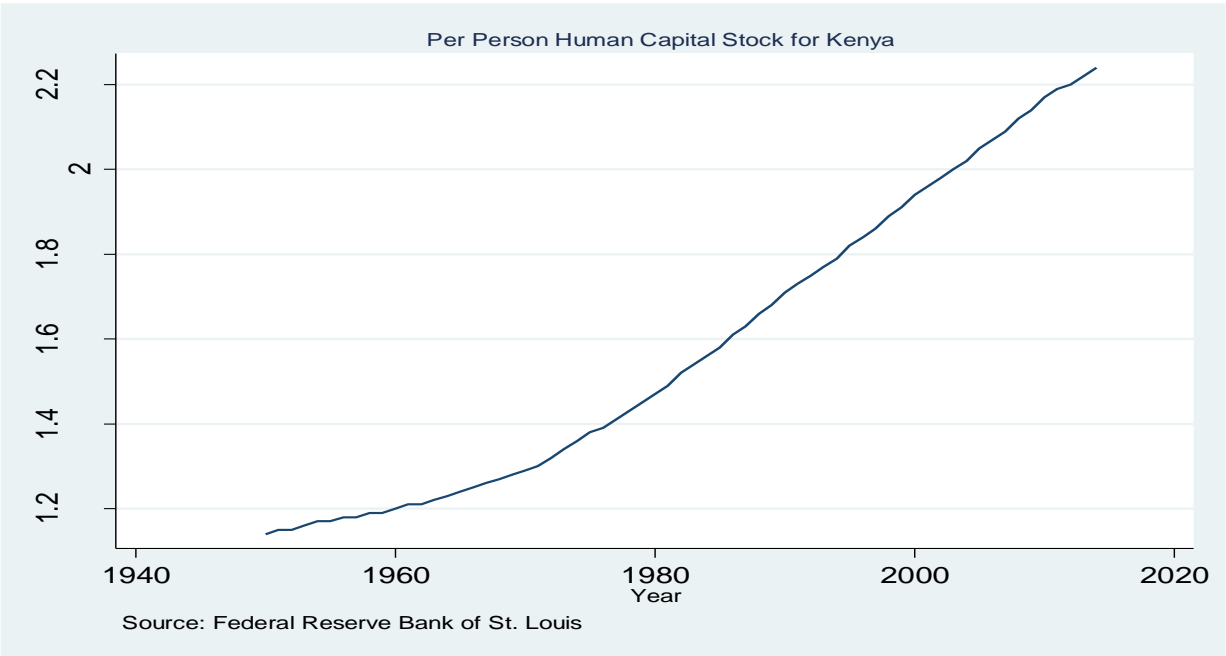
Given that the country's stock of human capital, which is one of the considerations for successful participation and progression in the labor force, is not only reasonably high but has also been increasing over time, how does the actual outlook of the labor force participation in the country look like? Do we have near full participation rate? If yes, then human capital is both necessary and sufficient for successful participation and progression in the labor force. However, if no, then human capital is necessary but another factor is sufficient for successful participation and progression.

This paper seeks to examine whether that other factor could be social capital. Could social capital help ameliorate hysteresis where a high proportion of working-age population has completely given up the search process?

Labor force participation is poor if the proportion of working-age population that is unemployed and not actively engaged in the job search process is high. Further, if the actual labor force as a share of the total eligible population is low, then low labor force participation is implied.

United Nations Development Programme (2016), reports that labor force participation in Kenya for males and females was 72.1% and 62.1% respectively, translating to a national average of 67.1%. It is reasonably high, but it does not mean that it can't be improved. It does not mean that everyone who is legally eligible to work actually has work, nor does it mean that everyone who is legally eligible to work is actively looking for work. It means that some 32.9% of persons who are eligible to look for work and actually work, are not actively looking for work or have given up the job search altogether. That proportion is reasonably high. It calls for policy intervention.

Reasons for non-participation include reservation wage being higher than prevailing market wage rate for a given level of human capital, ill health, early retirement, hysteresis and high cost associated with the job search process.

This paper assumes that prevailing market wage rate is higher than reservation wage for a given level of human capital, so that an economic agent does not fail to participate in the labor force because their value for leisure is higher. The paper equally rules out early retirement, ill health and any other factor, apart from hysteresis and high cost of the search process.

Given a certain level of human capital, hysteresis and high cost of the search process have a bearing to inaccessibility of relevant labor market information pertaining who is employing, the hiring-

wage and other non-wage characteristics of a job opportunity. Ruling out the possibility of the labor market not being able to absorb everyone who is eligible to work, informational asymmetry may lead to labor market failure as manifested by the 32.9% of the working-age population that is not participating in the labor force.

This paper will endeavor to find out whether social capital, which is an embodiment of informational flow, in addition to its other institutional factors of trust and reciprocity, can help foster informational symmetry about demand for labor by firms among the 32.9%, making them actively engage in the search process and consequently increase participation rate.

In *Figure 2*, Kenya's per person human capital stock was increasing at an increasing rate since early 1970s through 2014. In the same period, the share of those employed or actively looking for work was decreasing at an increasing rate till 2005 when it started rising as shown in *Figure 3*. This provides more credence to the proposition that human capital, despite being necessary for successful participation and progression in the labor force, is insufficient. As per person human capital stock was increasing at an increasing rate, the share of those either employed or actively looking for work was decreasing at an increasing rate, meaning that an increasing share of persons within the working-age population were actually not participating in the job search process.

In light of the above revelation, this research paper will strive to provide an empirical solution to the problem that a country with reasonably high stock of human capital can have reasonably high non-participation in the labor force as implied in *Figure 3*. Reasonably high human capital that is unengaged in the labor force is dead human capital. Such capital is not helpful to an economy.

The reasonably high non-participation in the labor force may be attributable to persons within the working-age population, endowed with reasonably high human capital stock, being unable to access bridging and linking information pertaining available job opportunities in the labor market. In absence of symmetric flow of information from the demand side to the supply side, and vice versa, the search process becomes costly and job seekers may end up dropping out of the search process. This paper will find out whether social capital, which embodies institutional aspects of information flow, trust and reciprocity, can bridge and link relevant information to searchers, thus improving labor force participation and averting labor market failure.

Figure 3: Labor force as a share of total working-age population

Kenya's Labor Force as Share of the Total Population

Source: World Bank and UNDP 2013
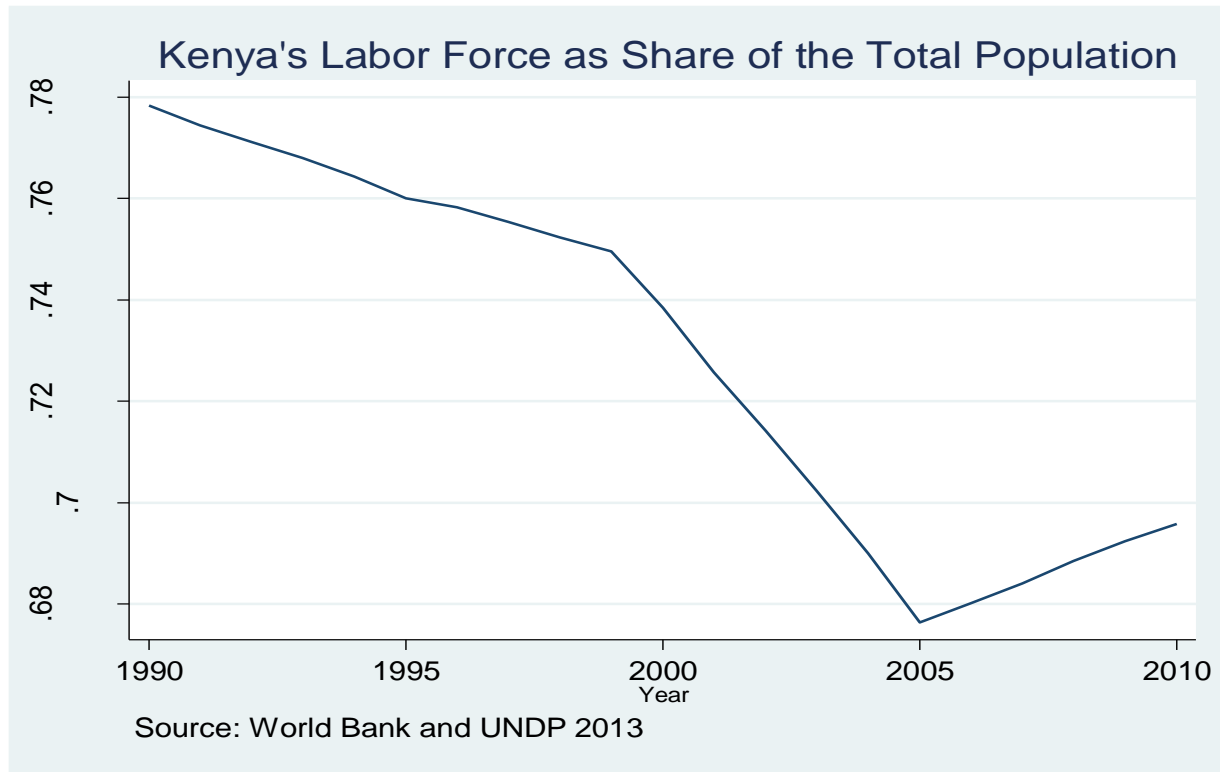
1.3 Research Objective

The general objective of this research was to determine whether social capital, which is an embodiment of informational flow, trust and reciprocity can help bridge and link relevant information from the demand to the supply side of the labor market, resulting in increased participation in the search process and thus successful participation and progression in the labor force. The specific objectives were:

  i.   To determine whether social capital has an effect on labor force participation in Kenya.

 ii.   To determine whether social capital has an effect on employment in Kenya

1.4 Research questions

The research questions for the study were:

  i.   Does access to bridging and linking information pertaining demand for labor make the job search process more directed, less costly, shorter, and efficient?

ii. Does access to bridging and linking information pertaining demand for labor mitigate against involuntary and frictional unemployment?

iii. Can institutional tenets of trust and reciprocity make the search process more directed, less costly, shorter, and efficient?

iv. Is labor market failure attributable to imperfect and inefficient access to information in the search and matching process?

1.5 Research hypotheses

The following set of falsifiable hypotheses were tested:

H_0: Social capital has no effect on labor force participation in Kenya.

H_1: Social capital has an effect on labor force participation in Kenya.

1.6 Justification

Montgomery (1992) noted that the normal job search models needed to be relaxed so that besides catering for how social networks influenced off-the-job search, they could also address the aspect of on-the-job search. In this paper, that gap is now filled in that the study endeavors to provide an empirical analysis of how social capital, measured by social networks that embody important institutional aspects of informational flow, trust and reciprocity, relay relevant labor market information to the two types of searchers, influencing their choice to participate in the labor market.

Additionally, no research has empirically investigated the effect of social capital on labor force participation in Kenya. As such, the findings of the study will inform policy debate as to what should be done to foster labor force participation and progression in the country for continued economic growth.

The findings will further shed light into the question of whether the Kenyan market is perfectly competitive or imperfectly competitive. The reasonably high labor force non-participation may be attributable to informational asymmetry, which is a cause of market failure. The findings will play an important role in helping domestic and external policymakers come up with strategies of investing on the institution of information, trust and reciprocity through creation of social capital stock for better participation and progression in the labor force and thus ameliorate labor market failure.

If social capital is found to have a positive and significant effect on labor force participation, then appropriate policy measures will be taken to address involuntary and frictional unemployment in the country. If larger proportion of the working-age population is engaged in the labor force, then the country's productivity and growth will increase, while reducing dependency ratio and criminal activities associated with persons within the working-age population dropping out of the search process and becoming economically unproductive.

The field of social capital is relatively new in economics. The findings will enrich the existing scanty literature on the effect of social capital on labor force participation thus being of help to future researchers.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, theories that are deemed relevant to the relationship between social capital and labor force participation will be reviewed. The review will put emphasis on the linkage between the theories and the topic under investigation. The empirical literature review will delve into investigating how previous research modeled the concept of social capital, the type of data used, analytical methodologies embraced, and the findings, if any, on the effect of social capital on labor force participation.

2.2 Review of Theories

2.2.1 Social Capital Theory

The theory of social capital originates from Bourdieu (1986) and Coleman (1990). It rests on the strong institutional tenets of information, trust and reciprocity. Information is the most significant resource that institutionalized relationships embody. Membership to a group is believed to promote mutual acquaintance and recognition. Social capital embodies collective action among economic agents within a social network, a factor that nudges the action of reciprocity. Relationships that are stable embody honor and reputation among economic agents within a social network and thus help build trust. Investment strategies are necessary to produce and reproduce durable and useful social networks and relationships that can serve in relaying linking and bridging information about open job opportunities, the hiring-wage and non-wage characteristics of jobs in the labor market. As Bourdieu (1986) rightly notes, the quantity of social capital that a job searcher possesses is dependent on the size of the network of connections mobilized. Social capital is thus build in the same way economic capital is built as an economic agent has to make investment increasing the volume of their social networks and relationships.

Coleman (1990) further reinforces the concept of social capital by arguing that social capital is a resource embodied in kinship social relations and formal or informal social organizations. It exists in relations. More specifically, social capital is seen as embodied in social structure within which certain beneficial actions informed by trust and the need for reciprocity are facilitated for individuals within that social structure (Coleman, 1990). The theory presents social capital as a

public good that is embodied in the structure of relations between persons and among persons. Changes in the manner in which economic agents relate with one another are important in facilitating beneficial actions induced by trust and reciprocity.

Institutional tenets of trust and reciprocity are integral in the social structure. The structure of social relationships is important in establishing and nurturing social norms that are considered socially acceptable (Coleman, 1990). Compliance to the socially acceptable social norms induces the need for economic agents to act on the basis of mutual trust and reciprocity. Since economic agents are assumed to be utility maximizing, investment in the accumulation of social capital play an important role in enhancing informational symmetry in the labor market. Coleman (1990) supports this observation by arguing that social relationships, which embody social capital, have an information potential to provide agents with crucial information in the utility maximization process. Access to information, despite being costly, can be made relatively cheap through investment in the accumulation of social capital through social networks. Symmetrical access to information serves as basis for economic agents to take actions like the action to participate in the job search process.

The theory is of significant importance in determining how social capital influences choices by economic agents to participate in the labor force in Kenya. It is helpful in creating an empirically measurable construct of social capital as an embodiment of linking and bridging information and other institutional tenets of trust and reciprocity that can foster directed job search process which is less costly, shorter and more efficient. Promotion of linking and bridging informational symmetry is crucial in ameliorating labor market failure in Kenya.

2.2.2 The Nudge Theory

The nudge theory is attributable to Thaler (2008), the winner of the 2017 Nobel Prize in economic sciences. The theory is based on the assumption that almost all economic agents, almost all of the time, do not make rational decisions that yield the best outcomes for them, thus the need for them to be influenced or encouraged to make better decisions. Thaler rightly notes that one way of nudging economic agents to consciously or unconsciously make decisions that are in their best interest is through providing them with good information and prompt feedback. Good information should be relevant information. The flow of the information between searchers and employers is necessary in fostering informational symmetry, thus mitigating against labor market failure.

Job seekers who are poorly informed pertaining who is employing, the hiring-wage, and non-wage characteristics of open job opportunities in the labor market are more likely to make decisions that do not promote their best interest. If the searchers have fewer or no social networks at all, then they are likely to know few or no one at all who can relay job-related information to them. Such searchers are equally less likely to benefit from institutional tenets of trust and reciprocity.

The best interest of searchers is to have successful participation in the labor force through being able to secure a job opportunity at the lowest cost and within the shortest time possible. Due to the fact that searchers with lesser or no stock of social capital have poor access to information and it is not easy for them to benefit from trust and reciprocity, they make decisions to participate in undirected job search process which is costly and time-consuming. When they incur high search costs and spent more time searching unsuccessfully, they are likely to make the decision to drop out of the search process. The decisions are not in their best interest. They are bad choices. How can nudging help them make decisions that promote their best interest? How can the theory help design the choice architecture of searchers such that they are better off in the search process?

Nudge theory has a role to play in influencing the choices of job seekers. Investment in accumulation of social capital stock can promote informational flow, trust and reciprocity which subsequently influences the behavior and choices of searchers. Policymakers in the public and private sectors need to design systems that foster right incentives among searchers. The systems need to factor the choice architecture of searchers in a manner that promotes access to good and relevant information, trust and reciprocity. These are important tenets of social capital.

The Kenyan labor market has 32.9% of economic agents within the working-age population having given up the job search process. Designing of nudges can encourage these individuals to gain access to information about job openings for them to make applications. Nudges can equally provide incentives for these economic agents with lower stock of social capital to invest in creation of social networks that embody informational access, trust and reciprocity. The ultimate outcome is enhanced participation in the labor force.

2.2.3 The classical theory of capital

The theory is attributable to Marx (1933) where social capital is investment towards accumulation of informational resources that can help searchers reap returns from the labor market. Investment

towards accumulation of social capital stock adds value to searchers who already have innate or acquired talent and skills that amount to human capital. The theory further postulates that effort and time are necessary in mobilization and accumulation of social capital. Social structure, which embodies social networks and the inherent resource of informational flow and tenets of trust and reciprocity between the bourgeoisie (employers) and the potential laborers (job seekers) is important if the labor market is to clear. Job searchers have to know the potential employers who may demand and hire their innate and acquired skills whereas the employers have to know potential workers who possess suitable innate and acquired skills that fit the job descriptions of the available job opportunities. This presents an image of employers and searchers in the labor market who are simultaneously engaged in a search and matching process. If the searching and matching process is to be efficient, effective and thus successful, these two types of economic agents, the first on the demand side and the latter on the supply side of the market, must invest in a system that enables them to know, reach and interact with one another for purposes of familiarity, trust and reciprocity. The contemplated system should be able to relay information to and from each side of the labor market. It is a system of social networks. Investing in having wide and deep social networks is investing towards accumulation of social capital.

Searchers with high stock of social capital, in addition to being endowed with innate and acquired skills and knowledge, are thus likely to engage in directed job search process that is less costly and shorter. These searchers have incentive to actively participate in the search process, thus enhancing labor force participation. Policy programs that nudge and provide an incentive to economic agents within the working-age population to engage in directed job search that is less costly and shorter can foster labor force participation in Kenya. Specifically, such programs can prod the 32.9% of Kenyans within the working-age population who have dropped out of the labor force to reconsider their decision and actively engage in the job search process, albeit more directed.

2.2.4 Social capital and information symmetry

The social capital of an economic agent comprises of core and random networks. Core networks are non-unique while random networks are unique. In a core network, everyone knows everyone else and the information is redundant. In a random network, everyone does not know everyone else and thus information is non-redundant (Tassier, 2006).

The mix of random and core networks affects the size of stock of social capital possessed by an individual and thus information flow in the labor market. As the stock of social capital increases in the labor market, every searcher becomes connected to a random or core network that embodies bonding, bridging or linking information flow.

The total stock of social capital in a labor market can be described in terms of generations. Each generation has random and core networks. Assuming that the labor market has j searchers, the first-generation stock of social capital is the sum of random and core networks of the jth searcher in the market. The second-generation stock of social capital is the non-repeating sum of searcher jth's first-generation stock plus all the networks of networks of searcher j and so on. In the subsequent generations, it is good to note that each core network adds its random networks while each random network adds the sum of its core and random network (Tassier, 2006).

To illustrate this mathematically, first-generation's stock of social capital is given by $G_1 = C + R$, second-generation's stock of social capital given by $G_2 = (C+R) + CR + R(C+R) = C + R + 2CR + R^2$, $G_3 = G_2 + C^2R + 3R^2C + R^3 = C + R + 2CR + R^2 + C^2R + 3R^2C + R^3$, and so on, where C and R represent core and random social networks respectively.

To see how the stock of social capital grows in the subsequent generations, consider two situations where situation one has C=25 and R=15 while for situation two, C=15 and R=25.

Table 1: Accumulation of social capital stock in the labor market

Generation	Situation 1	Situation 2
G_1	40	40
G_2	1,015	1,415
G_3	30,640	50,790

Table 1 above shows how the stock of social capital grows in the labor market. As accumulation of social capital stock grows as searchers in the labor market get connected to each other through core and random social networks, bonding, bridging and linking informational flow grows as well, driving the labor market towards a situation of informational symmetry. Symmetry of information can help avert labor market failure.

2.2.5 The Simple Job Search Model

This model assumes that a job seeker knows the distribution of wages that are commensurate to his level of human capital and the intrinsic cost of information for generating a job offer (McCall, 1970). Job offers are random variables with distributions different from those of wages. A job seeker either accepts or rejects a job offer. As a rational economic agent, a job seeker accepts a job offer if the hiring wage is greater than their reservation wage, otherwise the job offer is rejected. Information is very valuable in this model as it helps a job seeker know who is hiring and the hiring wage so that they can make a decision to accept or reject it based on their reservation wage. Job seekers with strong social networks face symmetric flow of labor market information and thus experience lower cost of accessing information. Such job seekers are less likely to drop out of the job searching process.

2.2.6 Network Structure and the Reservation Wage

Job seekers have incomplete knowledge pertaining open job opportunities in the labor market. As such, they must rely on the information obtained through formal and informal channels (Montgomery, 1992). These channels may include personal referrals, direct application to employers and advertisements on newspapers, firm websites and social media platforms like LinkedIn. In this model, an unemployed searcher accepts a job offer if the hiring wage is greater than the value of reservation wage. On the other hand, an already employed searcher will accept job promotion if both wage and non-wage characteristics of the new job offer are better than those of the current job. Searchers, whether employed or unemployed, already know their respective reservation wages. What they do not readily know is who is employing, at what wage rate and the intrinsic non-wage characteristics of the job offers. Information about the unknown labor market aspects is handy. Searchers are likely to get information from formal and informal channels. The informal channels comprise of strong and weak ties. The formal channel comprises of impersonal search. Generally, the quality of labor market information received by a searcher is depended on the size and composition of their social network (McCall, 1970).

Although weak-tie and strong-tie network offer symmetrical distributions that have the same mean, the weak-tie offer distribution curve is more dispersed. Weak-ties offer better distribution of information about job opportunities to searchers with generally low initial conditions (Montgomery, 1992). Additionally, for a given network composition, reservation wage is observed

to be an increasing function of network size. The searcher's reservation wage increases because as the size of the social network increases, more bonding, bridging and linking information pertaining job opportunities in the market becomes available, making the searcher become more selective.

2.3 Empirical Literature Review

Aquilera (2002) undertook to examine the effect of social capital on labor force participation in the United States using national data from the Social Capital Benchmark Survey of 2000. In the study, social capital is measured using friendship networks while labor force participation is measured by employment and hours worked. A total of 3003 respondents who were randomly selected during the survey were used in the analysis. The empirical model was analyzed using Logit regression. It was found that social capital has a potential of reducing failure of the labor market attributable to informational asymmetry through dissemination of demand for labor information to individuals actively engaged in job search. Further, it was noted that human capital, in and of itself, is a necessary but insufficient factor for successful participation and progression in the labor market. Social capital complements human capital in the job search, labor force participation and career progression. The empirical findings, while controlling for human capital, indicate that social capital is positively associated with increased labor force participation.

Caspi et al. (1998) investigated the relationship between social capital and labor force participation using longitudinal data for young individuals whose development was captured within a 21-year period spanning between 1972-1993 in New Zealand. They argue that social, human, and personal capital are the three main determinants of an agent's likelihood to participate in the labor force. They defined social capital as social relationships that empower economic agents to gain access and control over the informational resources. They see social capital as a public good that exists in the relations among economic agents. The study posits that economic agents with low or no stock of social capital have lesser employability. Longitudinal data obtained from the DMHD study that comprised of 1,037 participants was used in the analysis. The empirical estimation was carried out using the Tobit model (Tobin, 1958) which allows for censoring variables that can't take values beyond certain points. After controlling for human capital, which was measured in terms of the level of educational attainment, social capital which was measured by structure of family relationships had a positive effect on youth unemployment. Specifically, the youths who were born to unwed mothers, implying weak familial networks, were more likely to be

unemployed. The implication was that youths with low stock of social capital are less likely to participate in the labor force.

Donato et al. (1992) carried out a study to determine how IRCA implemented in the US in 1986 influenced working conditions faced by immigrants in the labor market. The working conditions examined were hours worked, wages and employment terms. The study used panel data collected from at least 150 households in each of the ten migrant communities located in US and in Mexico between 1987 and 1991. Logit regression was used to estimate the empirical model. The findings indicated that Mexican immigrants who had relatives in the United States worked more hours, implying higher labor force participation rate than those without relatives. The study is unique in that it used panel data as contrasted to majority of studies reviewed that used cross-sectional data. The study is similar to that by Aquilera (2002) in that the two used logit regression analysis.

Yakubovich (2005) undertook to examine how urban job seekers in the Russian local labor market find jobs. The study examined the likelihood of getting a job due to information and influence transferred through social relationships and networks. It notes that one important resource transferred through social networks is information. From an economics' point of view, informational asymmetry is one of the key causes of market failure. In this context, information asymmetry in the labor market is likely to result in inefficiency in the job search and matching process, thus resulting in labor market failure. The study used cross-sectional data collected using stratified sampling from a sample size of 1,434 individuals recently hired. The Logit model was used in carrying out the analysis. The study is similar to that by Aquilera (2002) in that the two used cross-sectional data and the Logit models in carrying out the analysis. The findings indicated that job seekers with strong social networks have a higher likelihood of getting a job compared to those without strong social networks. Social networks are important in transferring information related to available job opportunities from the demand side to the supply side of the labor market, thus driving the market towards a competitive and efficient equilibrium.

Seibert et al. (2001) conceptualized social capital as social network resource that influences career success. They used cross-sectional data from a sample of 448 employees from different organizations and occupations and empirically modeled the relationship between social networks and career success. Using a structural equation model, the study found that social networks embodied social resources that mediated career success through access to information, resources

and career sponsorship. They conclude that social networking is important for realization of career goals. It is important to note that looking for a job and being able to secure one is a career goal to economic agents.

Luthans et al. (1988) examined how social capital affected career success among corporate managers. It is reasonable to deduce that career success entails successful participation and progression in the labor force. Cross-sectional data randomly collected from a sample of 457 managers was used. The study used descriptive analysis and results showed that most successful managers spend 70 and 10 percent of their time in social networking and communication activities respectively compared to their less successful counterparts. Social networking and communication are important in the allocation and distribution of information as an intangible economic resource, thus facilitating rational and directed job search and matching among job seekers and employers. Coleman (1990) arrives at a similar conclusion in his social capital theory. He finds that social networks influence careers of economic agents. Specifically, social networks that facilitate access to information have positive extrinsic and intrinsic career outcomes. The outcomes manifest themselves in factors like searching for and securing a job, wage-offer, promotions and job satisfaction.

Kram and Isabella (1985) examined how social networks influence professional mentoring and career progression. Job seekers, who aspire to join the labor force, need mentoring from experienced workers already in the labor force in order to improve their chances of securing job opportunities and career progression. Cross-sectional data was collected from 15 focus group discussions. The qualitative data was analyzed using content analysis technique. They found out that career-mentoring relationships are rich sources of social capital that can facilitate dissemination of information regarding job opportunities and their characteristics. The findings indicate that besides mentoring social networks being a source of labor market information, they create trust and norms of reciprocity that are very important ingredients of social capital. It follows job seekers with established mentorship networks are more likely to participate in the labor force than their counterparts without such networks.

Brook (2005) undertook to examine how social capital influences labor force participation in the UK labor market. Cross-sectional data obtained from the UK 2004/5 GHS databse was used in the analysis. The study is similar to that done by Aquilera (2002) in that it uses cross-sectional data.

The difference is in the empirical models used. The study argues that social capital is an asset for job seekers and workers seeking job progression, retention and job change. It is beneficial as it provides information about available job opportunities. The methodological approach that the study embraced entailed reporting descriptive statistics on how job seekers in the labor force had obtained information pertaining the open job opportunities. The study also relied on review of information reported by the Labor Force Survey on how job seekers had found jobs. The study maintained that employers are more likely to hire job seekers recommended by existing employees as this helps build trust. Specifically, the study reported that over 30% of job seekers who had obtained new job opportunities in the last three months had received information about the availability of the opportunity from someone who worked with the organization.

Brook and Barham (2006) examined how social capital aids job seekers secure job opportunities and attain career progression once in the labor market in the United Kingdom. Cross-sectional data obtained from the UK 2006 LFS databse on 47,552 individuals was used in the analysis. The study found out that 30 percent of workers who had commenced working in the last three months had heard about the availability of the job opportunity through someone in their social network who worked in that organization. The study also found out that another 10 percent of workers who had secured employment in the same period had got information about the availability of open job opportunities through an employment club or agency. Hales et al. (2000), in a study evaluating New Deal Initiatives for lone parents, found out 30 percent of parents who had recently secured jobs had received information about the job opportunities through friends and relatives compared to 10 percent who had received it from a job center.

Stone et al. (2003) carried out a research in Australia examining how social capital affects the job search process. Cross-sectional data obtained from the 2001 Australian Institute of Family Studies for 1506 households was used in the analysis. The multinomial logit model was used to carry out the empirical analysis. The study differs from those by Donato et al. (1992) and Aquilera (2002) in that the two used the logit regression. The findings showed that there is a significant relationship between social capital and labor force participation in the country. More specifically, the study found out that job seekers with high levels of social networks were 2.5% more likely to be in full-time employment. Social networks were found to be useful sources of labor market information needed during the job search process. They further found that job seekers from low socio-economic

backgrounds using friends and family networks to secure job opportunities are less likely to secure high paying and satisfying jobs compared to those from well-off backgrounds who are more likely to have more professional networks.

Smith (2000) examined how social capital affects the likelihood of participating in the labor force in the U.S. The study considered groups that were deemed disadvantaged in terms of ethnicity and gender. Data from 2,781 respondents covering the period between 1992-1994 was used in the empirical analysis. Participation in the labor force was measured using hourly wages while social capital was measured in terms of weak or strong social ties. The analysis embraced the logit model which is similar to that used by Aquilera (2002). The findings indicated that social capital plays a crucial role in disseminating labor market information to disadvantaged groups thus alleviating social inequality through labor force participation. Specifically, white women earn an average of 14 percent more if found job through personal contacts.

Granovetter (1973) examined how contacts and social networks influence the likelihood of securing a job opportunity in the United States. The study used survey data on 64 individuals randomly selected to participate in the study. It was found that weak ties, which denote relationship between acquaintances, as opposed to relatives and close friends, are the most important in helping job seekers find employment. The major finding was that half of job seekers in the country find jobs through friends, relatives and other social contacts. Weak ties accounted for 27.8% of jobs found through referrals compared to 16.7% of jobs found through strong ties. The majority, comprising of 55.6% found jobs through moderate ties that are between weak and strong social ties. Weak and moderate social ties disseminate useful job information that is not redundant more frequently than strong ties. Social networks are a resource that relays out job-related information to job seekers thus influencing the job finding process. Granovetter (1974) supports the findings where 282 men in U.S were found to heavily rely on social networks to access information about open job opportunities in the market.

Tassier (2006) examined how weak ties, which are a category of social networks, influence how searchers find employment and how these ties affect a worker's income. The study used cross-sectional data on 958 respondents obtained from GSS in U.S in 1985. The ordered logit model was used in carrying out the estimation. Employed individuals had incomes while unemployed ones had no incomes. Social networks, which embody social capital, were measured in terms of the type

of friends an individual has. The study found that searchers obtained employment through information relayed to them by friends. Since weak ties are less likely to overlap compared to strong ties on average, they embody a wider range of an economic agent's social networks. Social networks that have lesser overlap embody more opportunities of acquiring job information. More generally, the study found out that the range of an economic agent's social connections imbibed in weak social ties had a statistically significant and economically meaningful effect on income. Individuals with deeper and wider social networks were found to have a higher likelihood of having an income. Specifically, for every additional friendship that an individual created, income was found to increase by 3.2% on average.

Wegener (1991) carried out a study to determine the effect of social networks on career progression. The study argued that career progression, signified by individuals being able to secure better jobs, is achieved through contacting people possessing unique information and influence pertaining availability of open job opportunities in the labor market. Cross-sectional data on 604 women in German collected in 1987 was used in carrying out the analysis. The Probit regression model was used in carrying out the estimation. It was found that weak social networks had a positive and statistically significant effect on the incomes of high-status individuals. According to the findings, weak social networks help high-status individuals bridge their networks to other high-status individuals with useful job information. Individuals possessing high stock of social capital were thus more likely to attain career progression compared to those possessing low stock. The study, although different from that by Tassier (2006) in that different methodological approach is embraced, arrives at similar conclusion in that social capital, measured by weak ties, is found to have positive influence on labor force participation.

2.4 Summary of Literature

The review of theories and empirical literature laid strong foundation for the study. The social capital theory provided a concise construct and definition of social capital as specific type of capital. Social capital was defined as resources that exist in social relationships and networks. It was seen as having the potential to relay job related information from the demand to the supply side of the labor market.

The review of empirical literature provided evidence that social capital is an important asset in the job finding process. Social capital embodied institutional tenets of information, trust and

reciprocity. It was found that social capital has the potential to ameliorate labor market failure that is attributable to informational asymmetry through dissemination of demand for labor information to individuals actively engaged in job search. Social capital provides bridging and linking information to searcher, thus making them engage in directed job search process which is shorter and less costly.

The review of studies established that social capital has positive effect on labor force participation. Economic agents possessing high stock of social capital were found to have higher chances of having successful participation in the labor force. The studies reviewed revealed that cross-sectional data was popular in estimating the effect of social capital on labor force participation. This study resolved to equally use cross-sectional data.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this section, the conceptual framework underlying the study will be presented. The data that will be used in the empirical analysis will be described. The outcome variable, the key explanatory and control variables, and their measurement, will be described. Diagnostic tests such as test for normality and heteroscedasticity will be undertaken. The model that will be used to carry out the estimation will equally be documented.

3.2 Conceptual Framework

The Kenyan labor market, just like all labor markets across the globe, is imperfectly competitive owing to informational asymmetry. Employers on the demand side of the market search for potential employees who have certain desirable characteristics. The characteristics include trustworthiness and skills embedded in a job seeker's human capital. Job seekers on the supply side of the market search for job opportunities that have certain desirable characteristics. The characteristics include, among others, prevailing market wage rate and career progression through promotions. The market attains efficient equilibrium through a continuous process of searching and matching. Both job seekers and potential employers participate in the search and matching process. On the supply side of the market, job seekers search for open job opportunities that match their stock of human capital. On the demand side of the market, potential employers search for potential workers who have certain desirable characteristics to match them with available job opportunities. Successful job search and matching process is dependent on availability and accessibility of information by economic agents. Informational symmetry is very important for the market to clear.

3.2.1 Assumptions

The paper makes six logical assumptions. Firstly, it is assumed that the Kenyan labor market has two economic agents. The two are either simultaneously actively looking for first employment opportunity or are already employed and their objective is to attain career progression. Progression is realized through attaining desirable job characteristics that are superior to those of the job currently held. It occurs either within the current firm or with a new one. Secondly, one has higher

stock of social capital measured by bonding, bridging and linking social networks. Thirdly, they have 24 hours only in a day. Fourthly, their human capital endowment is similar, such that a hiring firm is indifferent between the two searchers as they have similar skills, but has to hire only one. Fifthly, they have same reservation wage. Sixthly, the search process is not costless.

The searchers allocate the available time to job-searching and leisure activities. They derive utility from one or both activities. Workaholics and moonlighters, for instance, derive more utility from work and less from leisure. A searcher is, however, free to allocate all the available time to either searching or leisure.

An economic agent who is discouraged from participating in the labor force partly due to informational asymmetry pertaining job opportunities and their characteristics, and partly due to high costs associated with the searching process due to absence of social networks that can relay relevant job market information, ends up allocating all available time to leisure. In contrast, a searcher who has access to symmetrical flow of labor market information through social networks, experiences lower cost associated with the searching process. This searcher has higher likelihood of engaging in the search process to obtain the first job or job promotion that signifies career progression.

It is good to note that a searcher does not have to allocate more time to job searching than to leisure in a day in order to achieve the objective of finding the first job or making progress career-wise. At least that does not have to be the case in the presence of social capital that embodies institutional factors like information, trust and reciprocity among economic agents in a social network.

An economic agent with high stock of social capital may allocate fewer hours towards the searching process in a day and still end up securing a job opportunity or promotion faster than another who allocates more hours to the searching process in a day but has little or no stock of social capital. A searcher with higher stock of social capital has competitive edge compared to one with little or no stock of social capital because his search process is not characterized by trial and error, it is rather a directed one. Without heavy investment in accumulation of social capital stock, someone can as well allocate all the available time in a day to searching but end up not securing a job or obtaining career promotion. This is true if the searcher, despite having high stock of human capital, has no access to relevant labor market information, lacks trust, and reciprocity from the eyes of potential employer.

Since the job search process is not costless, a searcher, while deciding whether to participate in the labor force or not, considers the expected return after securing a job and his current reservation wage. For the searcher to decide to actively search for work if frictionally or involuntarily unemployed, the firm's hiring wage must be higher than the reservation wage. For an already working economic agent to actively search for job promotion, the expected benefits must exceed the current benefits.

In a labor market where searchers face informational asymmetry in the search process, the cost of search is prohibitively high. Such a scenario is likely to disincentivize searchers, making them drop out of the search process. If this happens, then the labor market has low participation.

To avert a possibility of labor market failure due to uncompetitive and inefficient search and matching process attributable to informational asymmetry, investment in social capital is necessary to embody and disseminate labor-market-related information not only to searchers, but also to employing firms. Availability of bonding, bridging and linking information nudges searchers to make a choice to participate in the labor force.

Even though the focus of this paper is on the supply side of the labor market, an investment in accumulation of social capital by both searchers and firms would drive the supply and demand sides of the labor market towards an efficient equilibrium.

3.2.2 Searcher's optimal labor supply

The searcher is on the supply side of the labor market. His objective is to maximize utility derived from engaging either in income-generating or leisure activities subject to income and time constraint.[2] Mathematically, his objective is to:

Maximize U=μ(Y,L_H)   *(general functional form)*   …(1)

Or Maximize U=YL_H   *(specific functional form)*   … (2)

Where U is utility, Y is income, and H_L is hours spent on leisure.

Subject to:

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[2] The searcher, in his utility maximization pursuit, faces time constraint in that he has only 24 hours in a day which should be shared between income-generating and leisure activities.

(i)   *Income constraint; $Y=wY_H+N$*   …(3)

         Where w is hourly wage, Y_H is hours devoted to income generating-activities, and N is non-wage income.

(ii)   *Time constraint; $T=Y_H+L_H$*   …(4)

         Where T is total 24 hours available to the searcher in a day, Y_H, is hours spent on income-generating activities, and L_H is hours spent on leisure.

Substituting equations (3) and (4) to equation (2) I get:

$U=wY_H T-wY_H{}^2+NT-NY_H$ …(5)

Taking the first order conditions of U with respect to Y_H I get:

$\frac{\partial U}{\partial Y_H}=wT\text{-}2wY_H\text{-}N=0$ …(6)

$Y_H{}^*=\frac{T}{2}\text{-}\frac{N}{2w}$ …(7)

Where $Y_H{}^*$ is the optimal number of hours that a searcher is willing to supply to the labor market in return for income. Since leisure is assumed to be a normal good, when non-wage income increases, demand for leisure increases and the number of hours supplied to the market in exchange for wage income decreases.

To determine whether $Y_H{}^*$ is optimal, the second order conditions are obtained and the sign determined whether it is negative. If the sign is negative, then $Y_H{}^*$ is optimal.

$\frac{\partial 2U}{\partial Y_H 2}=\text{-}2\text{w}$ …(8)

3.3 The Econometric model

The study seeks to determine the effect of social capital on labor force participation in Kenya. Labor force participation is the sum of those employment and unemployed. Both employed and unemployed economic agents engage in job search. As Kim (2010) rightly notes, employed economic agents engage in an on-the-job search for better jobs while unemployed ones search for a job opportunity. A utility-maximizing economic agent is characterized by non-satiation. As such, employed economic agents will always participate in the job search for better jobs. Better is always preferred to good. Unemployed economic agents participate in the search process to get a job opportunity.

The log-log econometric model, particularly the left-censored Tobit model (Tobin, 1958) presented in equation (9) was estimated. The Control Function approach (Wooldridge, 2015) was followed.

LogLaborForce=β_0+β_1Gender+β_2Residence+β_3LogAge+β_4HumanCapital+β_5LogSocialCapital+ε (9)

Where the dependent variable is specified as:

LogLaborForce=$\{In\ Labor\ Force \geq 1,\ Not\ in\ Labor\ Force\ = 0\}$ …(10)

In equation (9), the left-censoring of the dependent variable, which is the number of hours worked in all income-generating activities in the last seven days, was bounded at 0, meaning those not in the labor force had zero hours worked while those in the labor force (employed and unemployed but looking for work) had non-zero and positive hours worked[3]. Estimating the equation helped answer the research objectives.

3.4 Data

Data from the 2015/2016 Kenya Household Budget Survey database was used in the empirical analysis. Specifically, the data was obtained from the sections on Household Information and Household Members Information. Toossi (2015) defines labor force as comprising people within the working-age population who are either working or looking for work. Borrowing from that definition, labor force participation in this research was measured by hours worked. Ehrenberg and Smith (2006) support this approach in the argument that since labor force participation includes both those employed and those who want a job but have none, the number of hours of work is a pure measure of labor supply[4].

Individuals who are employed[5] and thus earning income, and those who are unemployed but searching for work, have non-zero and positive hours worked. Individuals are considered unemployed, despite supplying non-zero and positive hours of work to the market, if the number

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[3] The research assumes that unemployed people, who are actively looking for work, are currently supplying non-zero and positive hours of work to the labor market, only that the number supplied is too small to be accepted by employers at the prevailing market wage rate and thus be considered employed.
[4] Labor force participation is a labor supply concept (Ehrenberg & Smith, 2006).
[5] Employment can either be salaried or non-salaried (self-employment).

of hours supplied are too few to be accepted by employers at the prevailing market wage rate. Using this criterion, 39,354 individuals were deemed to be participating in the labor force compared to 53,492 individuals who were not.

Bhandari and Yasunobu (2009) hold that social capital is centered on social relationships and its main elements are social networks, civic engagement, norms of reciprocity and generalized trust. Further, they argue that social capital is embodied in associations, institutions, voluntary community organizations and self-help groups. Social capital, as an intangible asset, has benefits like helping job searchers obtain information and find job. Borrowing from them, social capital in this study was measured by the number of days an individual had spent in a social gathering in the last three months. It was measured as a continuous variable. Social gatherings are considered key sources of social capital as they bring members together, interact, know each other, build trust, values and norms of reciprocity and stand a higher chance of helping one another with labor market information.

Human capital was measured as a categorical variable with six categories. The categories are None, KCPE, KCSE, Diploma, Degree, and Post-graduate educational qualification. Individuals with no educational attainment were reference category. Place of residence, gender and age may influence an individual's likelihood of participating in the labor force. Residence and gender were measured as dummy variables while age was measured as a continuous variable. Residence has 1 representing urban area and 0 rural area. Gender has 1 representing males and 0 females. Age was measured in years. The four were used as control variables.

3.5 Diagnostic tests

3.5.1 Summary Statistics

Table 2: Descriptive Statistics

Variable	Observations	M	SD	MIN	MAX
In Labor Force	39,354	42.3884	21.7414	1	168
Not in Labor Force	53,492	0	0	0	0
Social Capital	92,846	.3402	1.5249	0	50
Human Capital					
KCPE	92,846	.1965	.3973	0	1
KCSE	92,846	.1097	.3125	0	1
DIPLOMA	92,846	.0157	.1242	0	1
DEGREE	92,846	.0095	.0971	0	1
Post-Graduate	92,846	.0012	.0349	0	1
Residence	92,846	.2962	.4566	0	1
Gender	92,846	.4945	.4999	0	1
Age	92,846	34.9982	17.1186	15	107
MFees	92,846	353.8929	1336.051	0	53000

Table 2 presents the summary statistics on the variables used in the analysis. The unit of analysis for the study is the individual level and the 92,846 observations represent the number of individuals who were surveyed in the 2015/16 KIHBS survey. There were 39,354 individuals in the labor force compared to 53, 492 individuals who are not in the labor force. Those in the labor force work an average of 42 hours in a week with the minimum and maximum hours worked being 1 and 168 respectively. The summary statistics for those in the labor force were (*M*=1.5271, *SD*=1.8306)

while the summary statistics for those not in the labor force were (M=0, SD=0) meaning people who are not in the labor force had an average of zero hours worked.

Social capital had (M=.3402, SD=1.5249) meaning individuals had spent an average of 8 hours in social gatherings in the last three months. The minimum and maximum number of days spent on social gatherings in the three-month period were 0 and 50 respectively.

Human capital was measured as a categorical variable. KCPE had (M=.1965, SD=.3973), KCSE had (M=.1097, SD=.3125), Diploma had (M=.0157, SD=.1242), Degree had (M=.0095, SD=.0971), while Post-graduate had (M=.0012, SD=.0349). The categories for human capital were dummies with minimum and maximum values being 0 and 1 respectively. Residence had (M=.2962, SD=.4566). It was measured as a dummy with minimum and maximum values being 0 and 1 respectively. Gender had (M=.4945, SD=.4999) with minimum and maximum values being 0 and 1 respectively.

Age had (M=34.9982, SD=17.1185) meaning the average age of the individuals interviewed was 34 years. The youngest and oldest individuals were 15 and 107 years respectively. Lastly, Membership fees had (M=353.8929, SD=1336.051) meaning the average amount paid to join PTA associations was Kenya Shillings 353 while the minimum and maximum amount paid were Kenya Shillings 0 and 53,000 respectively. This variable was used as an instrument for social capital.

3.5.2 Normality Test

Table 3 presents results for normality test. Continuous variables such as Log Labor Force, Log Social Capital, LogAge and LogMfees had normal distributions (*p-value*<.05). Discrete variables were not normally distributed because they follow a Bernoulli distribution (Marshall & Olkin, 1985). The variables with Bernoulli distribution are Residence and Gender. Human capital, which is a categorical variable, was normally distributed.

Table 3: Shapiro-Wilk Normality Test

Variable	Observations	W	V	Z	Prob>Z
Log Labor Force	92,846	.9131	2520.067	21.928	.0000
Log Social Capital	92,846	.9024	2832.290	22.255	.0000
Human Capital	92,846	.9414	1699.723	20.825	.0000
Residence	92,846	.9999	.851	-0.453	.6746
Gender	92,846	1.0000	.036	-9.292	1.0000
LogAge	92,846	.9583	1211.213	19.876	.0000
LogMFees	92,846	.9877	357.723	16.462	.0000

3.5.3 Heteroscedasticity test

Table 4 presents the Breusch-Pagan test for heteroscedasticity. A p-value of .0000, which is less than the 5% level of significance (p<.05), was obtained. The null hypothesis of homoscedasticity was thus rejected implying the error terms were non-constant. The presence of heteroscedasticity meant that the obtained parameter estimates were unbiased, but inferences were inefficient. Since the cause of heteroscedasticity was unknown, the censored Tobit model was estimated to obtain unbiased parameter estimates, after which robust standard errors were obtained to aid in carrying out hypothesis testing on significance of the estimated parameter estimates.

Table 4: Test for Heteroscedasticity

Chi2(1)	3823.5600
Prob>chi2	.0000

CHAPTER FOUR

RESULTS

4.1 Introduction

In this chapter, the empirical results obtained from the estimated model are presented. The research problem and tested hypotheses are revisited. The results are interpreted in light of the research problem, research question and hypotheses as they were set in chapter one.

4.2 Results

The general objective of the study was to determine the effect of social capital on labor force participation in Kenya. It was to be determined whether social capital, which embodies informational flow, trust and reciprocity, could help bridge and link relevant information from the demand to the supply side of the labor market. The outcome was expected to be increased participation in the job search process, which would improve participation in the labor force. There were two specific objectives. Firstly, the study sought to determine whether social capital has an effect on labor force participation in Kenya. Secondly, the study sought to determine whether social capital has an effect on employment in Kenya.

Social capital was thought to embody social networks that could facilitate informational symmetry between job seekers and employers, shortening the job search and matching process and thus improving labor force participation in the country. It was seen as useful tool that could help ameliorate labor market failure occasioned by searchers with reasonably high human capital stock being unable to know who is employing, the hiring-wage, job description and non-monetary benefits of the job. Specifically, the study sought to find out whether social capital could help ameliorate hysteresis where a reasonably high proportion of working-age population has completely given up the search process.

It had been found that, despite the country's participation in the labor force being reasonably high, it needed improvement as about 32.9% of people within the working-age population had no work and were not actively looking for one. The study sought to use the findings to suggest policy measures that could help the proportion of Kenyans within the working-age population who had dropped out of the search process to participate in the labor force.

The study used cross-sectional data and was subject to endogeneity problem. Stone and Rose (2011) posit that while carrying out socio-economic research, understanding how and why variables take certain values is important if valid and reliable inference is to be made.

Wooldridge (2013) suggests the method of instrumental variables in addressing endogeneity. He argues that a good instrument must be exogenous, relevant and strong. The log of membership fees to PTA associations was used as an instrument for social capital[6]. Since the model had one endogenous independent variable and one instrumental variable was used, there was exact identification.

The condition on relevancy of the instrument was satisfied as indicated in *Appendix 1*. The log of membership fees was a relevant[7] instrument for social capital. This was achieved through testing the null hypothesis that its coefficient was equal to 0. The null hypothesis was rejected meaning the instrument was relevant (t=-12.87, p=.0000). The assumption on the strength of the instrument was determined through looking at how far away the t-statistic was from 0. The t-statistic of -12.87 was deemed strong.

The censored Tobit model estimated in equation (9) was a good fit (F= 6497.50, p=.0000). The pseudo R^2 was .2739 meaning the proportion of variation in labor force participation explained by the independent variables was 27.39%. The R^2 is reasonably acceptable given the study used cross-sectional dataset. It is common to have small R-squared [8] for studies using cross-sectional data (Liliana & Antonija, 2005).

The control function approach (Wooldridge, 2015) requires that after the reduced form equation (*See Appendix 1*) is estimated, the residuals should be obtained and included in the structural equation that is finally estimated (*See Appendix 11*). Following Mwabu (2008), the coefficient for the residuals should be statistically significant to prove that there was endogeneity but it was addressed. That condition was satisfied as indicated in *Table 5* (t= 14.68, p=.0000). The implication is that it was necessary to include the residuals in the structural equation in order to

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[6] The amount paid to join PTA associations is a price. It satisfied the law of demand by having a negative sign (*See Appendix 1*). The variable is exogenous because individuals planning to join these associations are price-takers and have no control over the amount paid. The assumption of instrument exogeneity is satisfied when cov (z, μ)=0.
[7] The condition on relevancy of an instrument is satisfied when cov(z, x)≠0 (Wooldridge, 2013).
[8] The R^2 for cross-sectional studies does not have to be very high. Small R^2 in cross-sectional analysis are not abnormal. The R^2 for this study, which uses cross-sectional data, is deemed adequately high.

obtain consistent estimates (Mwabu, 2008). In order to be certain that heterogeneity was equally addressed, the interaction[9] between social capital and the residuals was included in the structural equation (9) that was estimated (*See Table 5*). Following Mwabu (2008), if the coefficient for the *interaction* is statistically significant, then there was heterogeneity but it has been addressed. However, if the coefficient for the *interaction term* is not statistically significant, then there was no heterogeneity in the first place. Owing from this understanding, there was heterogeneity but it was removed (t=-2.82, p=.005) as shown in *Table 5*.

The results indicate that social capital had a positive and statistically significant effect on labor force participation in Kenya (t=4.72, p=.0000). Specifically, if the number of days spend on a social gathering increased by 1%, labor force participation was found to increase by 2.65%.

Gender had a statistically significant effect on labor force participation (t=25.04, p=.000). The hours spent by males participating in the labor force in the last seven days were more than those by females. Particularly, the average participation in the labor force for males was 21 minutes (.35 hours) more than that of females.

Place of residence had statistically significant effect on labor force participation (t=3.80, p=.000). The hours spent participating in the labor force in the last seven days by people living in urban areas were more than those by people in rural areas. Specifically, the average participation in the labor force for people in urban areas was 2.1 minutes (.035 hours) more than those in rural areas.

Age had statistically significant effect on labor force participation in the country (t=65.31, p=.000). If an individual's age increased by 1%, labor force participation was found to increase by 1.1%.

Human capital had statistically significant effect on labor force participation in Kenya (t=11.11, p=.000), (t=18.92, p=.000), (t=5.75, p=.000), (t=1.85, p=.065), and (t=-10.58, p=.000) for the KCPE, KCSE, DIPLOMA, DEGREE, and POST-GRADUATE levels of educational attainment respectively. Particularly, individuals with the KCPE qualification had an average labor force participation of 9 minutes (0.15 hours) more than that for individuals with no educational attainment. Individuals with the KCSE qualification had an average labor force participation of 18

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[9] The interaction between social capital and residuals removes heterogeneity of coefficients across workers, making it constant.

minutes (0.30 hours) more than that for individuals with no educational attainment. Those possessing a DIPLOMA had an average labor force participation of 11 minutes (0.19 hours) more than that of individuals with no education qualification. Those possessing bachelor's degree had an average labor force participation of 5 minutes (0.08 hours) more than that for individuals with no educational attainment. Individuals possessing post-graduate qualification had an average labor force participation of 94 minutes (1.58 hours) less than that for individuals with no educational attainment.

Why do people with post-graduate educational attainment have lower labor force participation compared to those with no educational qualification? The explanation is that people with post-graduate level of educational attainment participate in the labor force for fewer hours in a week but earn the highest wages[10] (Ehrenberg & Smith, 2006). Another explanation is the fact that people who have attained the post-graduate level of educational attainment have spent most of their time in schools acquiring educational human capital and thus have shorter working-life, which translates to fewer hours of the entire working lifespan spent engaged on income-generating activities[11] (Cahuc & Zylberberg, 2004).

The results of the study speak to the hypotheses and objectives of the study. The null hypothesis stated that social capital has no effect on labor force participation in Kenya. The coefficient for social capital was positive, implying that social capital has a positive effect on labor force participation in Kenya. Further, social capital, besides having positive effect on labor force participation, had statistically significant effect (t=4.72, p=.0000) on labor force participation in the country. Strategic policy formulation should be embraced to nudge Kenyans to invest in the accumulation of social capital stock that embodies institutional tenets of informational flow, trust and reciprocity. Investing in the accumulation of social capital stock can help ameliorate against labor market failure emanating from asymmetry of information where searchers have no access to bridging and linking information pertaining who is employing, the specific job characteristics, the

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[10] Educational human capital is a signal of a job-seeker's actual productivity (Ehrenberg & Smith, 2006). The higher the level of educational attainment, the stronger the signal on a searcher's potential productivity and the higher the wage rate commanded in the labor market. The higher the wage that a searcher can command in the market, the fewer the desirable hours of work (Ehrenberg & Smith, 2006).

[11] Since an individual's working-age is between 15-64 years (ILO, 2014), the more the years one spends accumulating educational human capital, assuming that an individual can either work or be in school, the fewer the years that remain for an individual to engage in income-generating activities (Cahuc & Zylberberg, 2004).

hiring-wage and non-wage characteristics of job opportunities available in the labor market. Accumulation of social capital stock can make the job search process less costly and more directed, translating to searchers taking shorter periods to gain access to employment. With the search process becoming less expensive, more directed and shorter, the 32.9% of Kenyans within the working-age population who have dropped out of the labor force can be nudged to actively start looking for work.

Table 5: Tobit Regression Results

Log Labor Force Participation	β	Robust SE β	t-statistic	P-Value	95% CI	
Constant	-3.7429	.0258	-145.18	0.000	[-3.7934,	-3.6923]
Log Social Capital	2.6478	.5615	4.72	0.000	[1.5473,	3.7483]
Human Capital						
KCPE	.1504	.0135	11.11	0.000	[.1239,	.1769]
KCSE	.2952	.0156	18.92	0.000	[.2646,	.3257]
Diploma	.1885	.0328	5.75	0.000	[.1242,	.2527]
Degree	.0774	.0419	1.85	0.065	[-.0048,	.1596]
Post-graduate	-1.5814	.1495	-10.58	0.000	[-1.8745,	-1.2884]
Residence	.0347	.0091	3.80	0.000	[.0168,	.0526]
Gender	.3478	.0139	25.04	0.000	[.3206,	.3751]
LogAge	1.0591	.0162	65.31	0.000	[1.0273,	1.0909]
Residuals	2.8639	.1951	14.68	0.000	[2.4814,	3.2464]
Interaction	-6.1834	2.1924	-2.82	0.005	[-10.4805,	-1.8863]
Pseudo R²	.2739					
No. of observation	92,846					

CHAPTER FIVE

CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Introduction

In this chapter, an overview of the research problem, research objectives, questions and hypotheses is provided. A summary of the key findings and inferred conclusion from the study is provided. Policy recommendations deemed necessary and suitable are highlighted. Finally, a research gap that requires attention in future is suggested.

5.2 Overview of research problem

This research sought to address the problem of dead human capital and the resultant hysteresis due to searchers in the labor market possessing high stock of human capital being unable to obtain bonding, linking and bridging information pertaining demand for labor so that they can respond through directed search and supply of labor to the market. It was thought that investing in institutional tenets of informational flow, trust and reciprocity, which are embodied in social networks as embodiments of social capital, could enhance informational symmetry in the market, thus ameliorating labor market failure associated with information asymmetry.

Three facts motivated undertaking this research. The first was that the working-age population in Kenya has been growing faster than the rate of growth of the total population since 1970s. The second fact was that per person human capital stock has been increasing at an increasing rate since around the same time when the working-age population started growing faster than the rate of growth of the total population. On one hand, the condition was thought to be an economic vice if a larger proportion of the working-age population was unable to secure a job within a shorter period of time. It was deemed a vice because a larger proportion of working-age population, despite having invested in accumulation of human capital, was economically unproductive. It is dead human capital. On the other hand, the condition was considered to be an economic virtue if the larger proportion of the working-age population growing faster than the rate of growth of total population, its high stock of human capital unchanging, was not only actively searching for a job, but was also able to secure one within a short period of time. In this case, the larger proportion of working-age population is economically productive.

The third fact was that the Kenyan labor market has no near full participation rate. The average national participation rate in the labor force stood at 67.1%. The implication was that 32.9% of Kenyans within the working-age population were not actively looking for work. They had dropped out of the search process perhaps due to the high costs associated with undirected searching. Undirected searching is lengthy. The situation called for policy intervention to nudge searchers to actively engage in directed searching through provision of informational symmetry. It is from this background that the effect of social capital as an embodiment of informational flow, trust and reciprocity on labor force participation was investigated.

The general objective of the research was to determine whether social capital, which is an embodiment of informational flow, trust and reciprocity could help bridge and link relevant information from the demand to the supply side of the labor market, resulting in increased participation in the search process and successful participation in the labor force. There were two specific objectives. The first objective sought to determine whether social capital has an effect on labor force participation in Kenya. The second objective sought to determine whether social capital has an effect on employment in Kenya.

There were four research questions. The first one sought to find out whether access to bridging and linking information pertaining demand for labor could make the job search process more directed, less costly, shorter, and efficient. The second one sought to determine whether access to bridging and linking information could ameliorate involuntary and frictional unemployment. The third research question sought to determine whether institutional tenets of trust and reciprocity could make the search process more directed, less costly, shorter and efficient. The fourth research question sought to determine whether labor market failure is attributable to imperfect and inefficient access to information in the search and matching process. The falsifiable hypothesis tested was that social capital has no effect on labor force participation in Kenya.

5.3 Summary of findings and conclusion

The study sought to determine the effect of social capital on labor force participation in Kenya. Specifically, the study aimed at finding out whether social capital, which embodies institutional tenets of social networks, trust and reciprocity could help ameliorate informational asymmetry that is characteristic of the labor market. Information is the main resource embodied in social capital.

Associations, relationships and interactions among economic agents play an important role in providing job-related information to searchers through bridging, linking and bonding process.

The study appreciated the fact that human capital which is defined as acquired skills or innate talent, in and of itself, may not be sufficient for successful participation in the labor force. This is because an economic agent with reasonably high stock of human capital, but who has no access to job-related information, may end up not knowing who is employing, the hiring-wage and non-wage characteristics of a job. This translates to undirected search process, which in most instances is longer and costly. The eventual effect of undirected search process with no access to information on demand for labor, is hysteresis and giving up the search process altogether, thus poor labor force participation. Human capital stock minus information pertaining who is employing, the wage rate and non-wage characteristics of a job, is just necessary but insufficient for successful participation in the labor force.

Holding the stock of human capital constant, social capital was seen to be sufficient for successful participation in the labor force. It was seen to embody institutional factors of social networks, trust and reciprocity that can help disseminate information to job seekers, thus helping them engage in a directed search process. Directed search process is shorter and less costly. It can play an important role in driving the labor market towards a perfectly competitive equilibrium, ameliorating possibility of labor market failure.

The empirical findings of the study provided a strong evidence that social capital has a positive and statistically significant effect on labor force participation in Kenya. The coefficient for social capital was statistically significant, holding the effect of an economic agent's human capital, gender, age and place of residence constant.

As such, social capital can actually provide an incentive to participate in the labor force to the 32.9% of Kenya's working-age population that has given up the job search process due to its relative high cost and hysteresis. Social capital can actually make the job search process less costly, more directed and shorter through symmetric flow of bridging and linking information. As the proportion of the country's working-age population that has dropped out of the search process gets incentive to participate in the labor force, possibility of labor market failure due to poor participation is ameliorated. Equally important, social capital can help make on-the-job search more directed, less costly and shorter, helping those already employed achieve career progression.

Social capital, on the other hand, in addition to having important aspects of human capital, is characterized by institutional tenets of trust and reciprocity, in addition to informational flow through linking and bridging social networks. As opposed to an economic agent who has reasonably high stock of human capital but does not possess social capital stock, a searching economic agent that has reasonably high stock of human capital and possesses social capital, is likely to experience a less costly and shorter searching period. This is so because the economic agent that has social capital is exposed to linking and bridging information about who is employing, the hiring wage and the non-job characteristics of a job, thus engaging in a directed search process. If social capital can make searchers engage in directed and successful job search process, then involuntary and frictional unemployed in Kenya could be made less severe. Finally, if access to bridging and linking information can make the demand and supply sides of the labor market engage in a less costly searching and matching process, then labor market failure attributable to imperfect and inefficient access to information could be mitigated.

5.4 Policy Recommendations

The findings of the research point towards a need to invest in accumulation of social capital stock in Kenya. Individual economic agents, firms, and the government should endeavor to put nudging measures in place to ensure there is growth in the stock of social capital in the country. Individuals can make deliberate decision to gain membership to social, cultural, religious, economic and political groups and organizations that are an embodiment of social capital in order to gain access to information. In cases where economic agents defy the economic principle of rationality by failing to enroll in social, cultural, religious, economic, political and professional groups for purposes of enhancing their access to information, they should be nudged to do so. The National Employment Authority (NEA) whose mandate is to register Kenyans searching for employment and linking them with employment opportunities and the Chancellor's Career Fair at the University of Nairobi, for instance, can play critical role of nudging Kenyans within the working-age population to participate in the labor force. Nudging provides an incentive to searchers to engage in directed job search process which is less costly, shorter and efficient through relaying linking and bridging information.

In a world of internet and digital communication, the government should legislate pro-social capital laws that make access to social media channels such as LinkedIn, WhatsApp, Facebook

and Twitter more accessible to its working-age population at reasonably affordable cost. Professional social network channels such as LinkedIn and Google groups bring employers and job seekers together on the internet, helping with bridging and linking information at a low cost. It serves as an incentive for directed job search that can prove to be less costly and shorter.

Policymakers should endeavor to create a legal and institutional framework that is conducive for establishment and thriving of cultural, religious, professional, economic, social and political organizations. They embody social networks, linking and bridging informational flow and institutional trust and reciprocity.

Firms and institutions of higher learning can invest in exchange partnerships that bring potential job seekers in contact with potential employers. Such arrangements bring the demand and supply sides of the labor market together, share information, exchange contacts, build trust and enhance the likelihood of reciprocity actions when a learner finally meets a potential employer whom they have met previously, looking for work.

5.5 Suggestion for future research

The current study succeeded in providing an empirical evidence that social capital has a positive and significant effect on labor force participation in Kenya. Measuring social capital in terms of the number of days spent on social gatherings was thought to embody both core and random social networks. Despite this success, however, it has a limitation in that its findings do not say whether the two types of social network equally have positive and statistically significant effect on labor force participation in the country. Future research should endeavor to provide an empirical evidence on how core and random social networks as measures of social capital independently affect labor force participation in the country.

REFERENCES

Aguilera, M.B. (2000). The Impact of Social Capital on Labor Force Participation: Evidence from the 2000 Social Capital Benchmark Survey, *Social Science Quarterly,* 83(3), 20-67.

Bhandari, H., Yasunobu, K. (2009). What is Social Capital? A Comprehensive Review of the Concept, *Asian Journal of Social Science,* 37(3), 480-510.

Brook, K. (2005). Labor market participation: the influence of social capital, *Labor Market Trends,* 113-123.

Brook, K., Barham, C. (2006). Labor market gross flows data from the Labor Force Survey, *Labor Market Trends,* 227-231.

Cahuc, P., & Zylberberg, A. (2004). *Labor Economics* (1st ed., pp. 1-878). Cambridge: The MIT Press.

Caspi, A., Bradley R. Entner Wright, Moffitt, T., & Silva, P. (1998). Early Failure in the Labor Market: Childhood and Adolescent Predictors of Unemployment in the Transition to Adulthood. *American Sociological Review, 63*(3), 424-451. Retrieved from http://www.jstor.org/stable/2657557

Coleman, J.S. (1990). *Foundations of Social Capital Theory*. Cambridge, MA: Harvard University Press.

Cote, S., Healy, T. (2001). *The Wellbeing of Nations, the Role of Human and Social Capital,* Organization for Economics Cooperation and Development.

Donato, K.M., Jorge, D., Douglas, S.M. (1992). Changing Conditions in the U.S Labor Market: Effects of the Immigration Reform and Control Act of 1986, *Population Research and Policy Review,* 11: 93-115.

Ehrenberg, R., & Smith, R. (2006). *Modern Labor Economics: Theory and Public Policy* (9th ed., pp. 165-201). New York: Pearson.

Galasi, P. (1994). Individual Time Allocation: A Labor Supply Model, *Acta Oeconomica,* 46(1/2), 133-142.

Granovetter, M.S. (1973). The Strength of Weak Ties, *American Journal of Sociology,* 78, 1360-1380. Retrieved from http://www.jstor.org/stable/2776392

Granovetter, M.S. (1974). *Getting a Job: A study of contacts and careers.* Cambridge, MA: Harvard University Press.

Hales, J. (2000). Evaluation of the New Deal for Lone Parents, *DSS Research Report,* 108.

Heckman, J. (1979). Sample Selection Bias as a Specification Error. *Econometrica, 47*(1), 153-161. doi:10.2307/1912352

Index of Human Capital per Person for Kenya. (2016). *Fred.stlouisfed.org*. Retrieved 2 April 2018, from https://fred.stlouisfed.org/series/HCIYISKEA066NRUG

International Labor Organization. (2014). *Rules of the Game for the global economy: A brief introduction to International Labor Standards,* International Labor Office, Geneva, Switzerland.

Kim, C.(2010). Looking for a "Better" Job: Job Characteristics and On-the-Job Search among the Employed in the Metropolitan Labor Market, *Journal of Applied Social Science,* 4(1), 44-63.

Kram, K.E., Isabella, L.A.(1985). Mentoring alternatives: The role of peer relationships in career development, *Academy of Management Journal,* 289(1), 110-132. Retrieved from http://www.jstor.org/stable/256064.

Liliana, A., Antonija, M. (2005).User Modeling, *10th International Conference,* Edinburg, Scotlant, UK.

Luthans, F., Hodgetts, R.M., Rosenkrantz, S.A. (1988). *Real Managers*. Cambridge, MA: Ballinger.

Maddala, G. (2001). *Introduction to econometrics* (1st ed.). Chichester: John Wiley.

Marshall, A., & Olkin, I. (1985). A Family of Bivariate Distributions Generated by the Bivariate Bernoulli Distribution. *Journal of the American Statistical Association, 80*(390), 332-338. doi:10.2307/2287890.

Marx, K. (1933). *Wage-Labor and Capital*. New York: International Publishers.

McCall, J.J. (1970). Economics of Information and Job Search, *The Quarterly Journal of Economics,* 84(1), 113-126. Retrieved from http://www.jstor.org/stable/1879403

Montgomery, J.D. (1992). Job Search and Network Composition: Implications of the Strength-Of-Weak-Ties Hypothesis, *American Sociological Review*, 57(5),586-596. Retrieved from http://www.jstor.org/stable/2095914

Mwabu, G. (2008). The Production of Child Health in Kenya: A Structural Model of Birth Weight, *Journal of African Economies,*18(2), 212-260.

Seibert, S.E., Kraimer, M.L., Liden, R.C. (2001). A Social Capital Theory of Career Success, *The Academy of Management Journal,* 44(2), 219-237.

Smith, S.S. (2000). Mobilizing Social Resources: Race, Ethnic and Gender Differences in Social Capital and Persisting Wage Inequalities, *The Sociological Quarterly,* 41(4), 65-85.

Spence, M. (1973). Job market signaling, *Quarterly Journal of Economics,* 87(1), 355-374.

Stone, S.I., Rose, R.A. (2011). Social Work Research and Endogeneity Bias, *Journal of the Society for Social Work and Research*, 2(2), 54-75.

Stone, W., Gray, M., Hughes, J. (2003). Social Capital at work: How family, friends and civic ties relate to labor market outcomes, *Australian Institute of family studies,* Research Paper No. 31.

Tassier, T. (2006). Labor Market Implications of Weak Ties, *Southern Economic Journal,* 72(3), 704-719.

Thaler, R. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness* (1st ed., pp. 1-304). London: Yale University Press.

Tobin, J. (1958). Estimation of Relationships for Limited Dependent Variables. *Econometrica, 26*(1), 24-36. doi:10.2307/1907382

Toossi, M. (2015). Labor force projections to 2024: the labor force is growing, but slowly, *Monthly Labor Review*, 1-36.

United Nations Development Programme. (2013). Climate Change and Human Development: Harnessing Emerging Opportunities, *Kenya National Human Development Report.*

Wegener, B. (1991). Job mobility and social ties: social resources, prior job, and status attainment, *American Sociological Review*, 56, 60-71.

Wooldridge, J. (2015). Control Function Methods in Applied Econometrics, *The Journal of Human Resources,* 50(2), 421-445.

Wooldridge, J.M. (2013). *Introductory econometrics: A modern approach* (5[th]ed.). Mason, OH: South-Western, Cengage Learning.

World Bank. (2003). Social Capital. Retrieved from http://www.worldbank.org/poverty/scapital

World Economic Forum. (2017). The Global Human Capital Index: Preparing people for the future of work.

Yakubovich, V. (2005). Weak Ties, Information, and Influence: How Workers Find Jobs in a Local Russian Labor Market, *American Sociological Review*, 70(3), 408-421.

APPENDICES

AppendixI   Reduced form regression

Log Social capital	*β*	*Robust SE β*	*t-statistic*	*P-Value*	*95% CI*	
Constant	-.0391	.0148	-2.65	0.008	[-.0681,	-.0101]
Human Capital						
KCPE	.0473	.0121	3.92	0.000	[.0237,	.0709]
KCSE	.0501	.0152	3.29	0.001	[.0203,	.0799]
Diploma	.1295	.0360	3.59	0.000	[.0588,	.2001]
Degree	.1641	.0458	3.58	0.000	[.0744,	.2538]
Post-graduate	.7156	.1264	5.66	0.000	[.4677,	.9634]
Residence	-.0091	.0096	-0.95	0.344	[-.0280,	.0098]
Gender	-.0567	.0088	-6.42	0.000	[-.0739,	-.0394]
LogAge	.0068	.000495	13.73	0.000	[.0058,	.0078]
LOGMFEES	-.1312	.0203	-6.46	0.000	[-.1709,	-.0914]
R^2	.0056					
Observations	92,846					

AppendixII   **Model with residuals but no interaction term**

Log Labor Force Participation	β	*Robust SE β*	*t-statistic*	*P-Value*	*95% CI*	
Constant	-3.7419	.0258	-145.17	0.000	[-3.7924,	-3.6914]
Log Social Capital	1.2578	.2109	5.96	0.000	[.8443,	1.6714]
Human Capital						
KCPE	.1500	.0135	11.08	0.000	[.1235,	.1766]
KCSE	.2948	.0156	18.90	0.000	[.2643,	.3254]
Diploma	.1864	.0328	5.69	0.000	[.1222,	.2507]
Degree	.0747	.0419	1.78	0.075	[-.0074,	.1569]
Post-graduate	-1.6195	.1497	-10.82	0.000	[-1.9129,	-1.3261]
Residence	.0349	.0091	3.82	0.000	[.0169,	.0528]
Gender	.3484	.0139	25.09	0.000	[.3211,	.3756]
LogAge	1.0587	.0162	65.29	0.000	[1.0269,	1.0905]
Residuals	2.8658	.1951	14.69	0.000	[2.4833,	3.2482]
Pseudo R^2	.2739					
No. of observation	92,846					