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**HIGHER EDUCATION AND LABOR MARKET IN ETHIOPIA: A TRACER STUDY OF
GRADUATE EMPLOYMENT IN ENGINEERING FROM ADDIS ABABA AND BAHIR DAR
UNIVERSITIES**

**BY
JERUSALEM YIBELTAL YIZENGAW**

**A DISSERTATION SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN
INTERNATIONAL AND COMPARATIVE EDUCATION**

**JUNE 2016
ADDIS ABABA**

**ADDIS ABABA UNIVERSITY
COLLEGE OF EDUCATIONAL AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE EDUCATION AND POLICY STUDIES
PhD PROGRAM IN INTERNATIONAL AND COMPARATIVE EDUCATION**

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JERUSALEM YIBELTAL YIZENGAW**

MAIN SUPERVISOR: PROFESSOR VINAYAGUM CHINAPAH (PhD)

CO-SUPERVISOR: PROFESSOR HOLGER DAUN (PhD)

**JUNE 2016
ADDISABABA**

DECLARATION

The researcher hereby declare, that this dissertation, entitled: "Higher Education and Labor Market in Ethiopia: A Tracer Study of Graduate Employment in Engineering from Addis Ababa and Bahir Dar Universities" is my original work and has not been presented for a degree in any other university, and that all sources of material used for the dissertation have been dully acknowledged.

Signature



Date

30th June, 2016

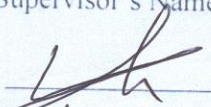
Name of candidate: Jerusalem Yibeltal

Reg. number: 6718/03

This dissertation has been submitted for examination with my approval as a supervisor.

Research Supervisor's Name: Vinayagum Chinapah (Professor)

Signature:



Date:

12th July 2016

Addis Ababa University

School of Graduate Studies

This is to certify that the dissertation prepared by Jerusalem Yibeltal, entitled: *Higher Education and Labor Market in Ethiopia: A Tracer Study of Graduate Employment in Engineering from Addis Ababa and Bahir Dar Universities* and submitted to fulfillment of the requirements for the Degree of Doctor of Philosophy in International and Comparative Education complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the Examining Committee

Examiner Hendrik Housen Signature [Signature] Date 21st - 10 - 2016
Examiner Alemayehu B. Shale Signature [Signature] Date 21st - 10 - 2016
Principal Supervisor Kirgysan Chingiz Signature [Signature] Date 21st - 10 - 2016
Tenassew Kelep [Signature]

DEDICATION

This study is dedicated to the former President of The World Bank, Robert S. McNamara, who refocused Bank lending beyond infrastructure and projects to basic human needs and poverty reduction. He identified population growth as a major issue for the Bank and the Bank began providing support for family planning programs. The Bank also began providing loans for pollution control. McNamara proposed the formation of the Consultative Group for International Agricultural Research, which makes major contributions to increasing global food production and reducing hunger. He mobilized Bank resources to launch an international onchocerciasis (river blindness) control program. Records of all these activities can be found in the records of the McNamara presidency. When he retired, he continued to speak and write about many such topics as: population and development, world hunger, the environment, East-West relations, nuclear arms, and his vision for the United States and the rest of the world in the 21st century. Robert S. McNamara passed away from this world in July 6, 2009 (The New York Times, 2009). God rests his soul in peace!

To honor Robert S. McNamara, The World Bank established The RSM Fellowship Program in 1982. The Program annually awards Fellowships to support innovative and imaginative post-graduate research in areas of socioeconomic development, specifically, focusing on issues critical to improving the lives of the most vulnerable in society. The Program provides support to young researchers preparing a doctoral thesis and working in academic and research institutions from eligible countries.

Accordingly, this study is well funded by The World Bank McNamara Fellowship Program hosted in the University of Pittsburgh, USA, to increase its quality through different accesses to essential resources such as reference books and research publications, databases, software, etc., attending seminars and courses, and more generally by interacting with peers.

BIOGRAPHIC SKETCH

Jerusalem Yibeltal Yizengaw is a PhD Candidate in International and Comparative Education in Addis Ababa University, Ethiopia. Amidst her PhD study, she was a Research Scholar and Alumni of The World Bank McNamara at the University of Pittsburgh, USA. She was also a winner of Canadian Education and Training Awards (CETA) obtained through merit based competition. She received a Master of Arts from Addis Ababa University in Curriculum and Instruction. Her MA Thesis entitled “Practices of Curriculum Planning and Development: The Case of Ethiopian Legal Education and Training Reform” was also sponsored by Ethiopian Research Institute for Federal Supreme-Court. She graduated three times from Bahir Dar University with two Basic Degrees and one Diploma. Her Basic Degrees are Pedagogical Science with composite English; and the other was Amharic major with English minor. She has published three articles. Her area of interest includes political economy of higher education, graduate labor market, employment, socio-economic problems in education, globalization, parental involvement in education, educational aid, gender and educational policies.

Previously, she was a lecturer of pedagogical and psychological courses at different colleges of education in Ethiopia. Besides her academic career, she coordinated gender based projects and served as a head of the colleges’ gender offices. She possesses experience of teaching, managing and coordinating different projects. She also serves as volunteer Fundraiser and Donors’ Relation Officer in Amhara Development Association. Jerusalem is keen to find a challenging position within a successful and dynamic organization where she will be able to continue to develop her co-curricular skills like partnership development, resource mobilization, fundraising activities, advanced software applications, communication and research etc.

ACKNOWLEDGMENTS

I used to ask God to help me. Then I asked if I might help him. I ended up asking God to do his work through me. He did it!! Thus, I must thank the Almighty God!

My special thanks go to my respected Advisors from Stockholm University: main supervisor Professor Vinayagum Chinapah (PhD), and Co-supervisor Professor Holger Daun (PhD). Your cooperative spirit, synergy, constrictive comments, professional support and guidance are highly appreciable. Professor Vinayagum is to be acknowledged, once again, for the materialized recommendations you have extended towards The World Bank McNamara Sponsorship that enabled me to get financial support. I am also very much grateful to Professor Henrik Hansson and Dr. Alemayehu Bishaw, who kindly read and gave constructive comments and suggestions that are valuable inputs for this study. In addition, my acknowledgement goes to Professor Teshome Nekatibeb (PhD), the founding Director of ICE in Ethiopia, AAU, who makes me curious to the current educational and developmental policy issue, graduate employment. Further, I enjoyed your International experience, Philosophy and wisdom of current issues in education and development from your courses. You deserve respect!

More so, my gratitude goes to The World Bank Robert S. McNamara Fellowship program for the research grant to increase the quality of my study in the USA. I must be thankful for the extended support of my host Institution, University of Pittsburgh (Institute for International Studies in Education and African Studies for International Education), who sponsored my lectures and showed me different events, courses, seminars, publications, office and infrastructures, etc., really thank you! Moreover, my heartfelt thanks go to Professor John C. Weidman (PhD) from University of Pittsburgh, USA, who opened up this incredible world and of things international to me alongside viewing my study in different perspectives. You make a difference in my life! You shaped my mind and enabled me to think, rethink and write in a different way, no words can express my thanks to Professor John C. Weidman!

Prof. W. James Jacob (Director of Institute for International Studies in Education), Professor Morienee Porter, Professor Shefik Nejeb, I enjoyed your ICDE, Nvivo and Stata classes respectively. You are friendly and you deserve great acknowledgment! My friends Veysel Gosbel, Weyien Xiong and Huyiwan Ye and all Visiting Scholars in Pittsburgh, USA, I learned

a lot from each one of you and I am very proud of being your friend. I have special place to Dr. Macrina Lelei (Director of African Studies for International Education) and Anna-Maria Karnes. My USA stay was so special because you gave me extended love and support. I love you! I am really grateful to Pankaj Chaudhary, Seyfu H/eyesus, Tebeje Molla, Zeritu Nida, Temesgen Berisso, Eric Swetts, Jo Anna Hillman and Jenna Carlson you supported me in different ways.

I am also thankful to Addis Ababa University, to Amhara Regional Education Bureau and to Dessie College of Teachers' Education for the PhD chance and financial supports you rendered. Likewise, the Engineering Teachers and graduates in different schools of AAU and BDU and who gave me data via email and hand delivery, face book and mail are under my lists of appreciation, Thank you! Special thanks go to Engineer Ashagre Mekuria (Dean of school of Engineering at BDU-BiT) and Engineer Tefera Enyew (Head Registrar of BDU-BiT). Besides, those of you who work for AAU registrar deserve acknowledgement. My acknowledgment also goes to the whole interviewed sectors and employers of 2012 engineers in Ethiopia.

Above all, the contributions of my PhD classmates at home country, Ethiopia, was a significant one to be mentioned i.e., in all my stay in the study program in general and my dissertation in particular. Far more, I am credited for Dr. Alebachew Kemisso and Dr. Asnake Tarekegn. Thus, my friends in my PhD study and my work area in Ethiopia and abroad, May you always remember how much you are needed, respected and valued!

Finally, my gratitude goes to family members. My wonderful parents and role models...in my own little world, Yibeltal Yizengaw and Selenat Admassu: you mean a lot, all of the sacrifices that you have made on my behalf and your prayers for me were what sustained me thus far. I also believe that you have nurtured me with deep culture of hard work and spiritual thoughts. Your abundant love and ordinary tutor shines my life and makes me a strong woman high above all obstacles. More, I feel a deep sense of gratitude for Engineer Haymanot Zewudie and Kidist Yibeltal who formed part of my vision and taught me good things that really matter in life. Your infallible love and support has always been my strength. Last but not least, words cannot express how grateful I am to my brothers: Kehulum Yibeltal, Girma Yibeltal, Zelalem Yibeltal and Anmaw Yizengaw, for encouraging me in all of my pursuits and inspiring me to follow my dreams. I always knew that you believed in me and wanted the best for me. Micheal Haymanot, Mitu Tsegaye and Meseret Abebe, thank you for your love in my study time.

Abstract

This study was designed to examine the linkages between higher education and labor market in Ethiopia with particular focus on the factors influencing employment opportunities of engineering graduates from Addis Ababa and Bahir Dar Universities. For the success, the study was guided by multiple theories like: human capital, labor market segmentation, search and matching, status attainment, signaling, and social capital theories which used to develop the Meta-conceptual framework that relates the entire process of the study. In addition, the research was guided by a Pragmatism Paradigm involving mixed methods research and the collection of quantitative and qualitative data. The research design was tracer study in a comparative perspective whereby attempts were made to collect data from 161 engineering graduates of the 2012 cohorts, 18 employers, 16 higher education teachers and relevant documents through pilot tested questionnaires, semi-structured interviews and document analysis, respectively. In order to respond to the research questions raised, analysis was made from the encoded data using EXCEL, SPSS version 20, STATA IC 14 and NVivo 11 softwares; Mendeley 1.16.1 software was also used to manage references. The information was scrutinized with different calculations such as frequencies, percentages, Chi-square tests, independent samples t-Tests, factor analysis, multinomial logistic regression analysis, and exponentials. From the results, it is traced that the employment status of 2012 engineering graduates of AAU-AAiT and BDU-BiT is found to be too late to the majority in terms of duration after graduation; even for those engineering graduates who are able to secure jobs within six-months time, the main employer in the Ethiopian labor market tends to be the public institutions, followed by private institutions, while the self-employment category remains to be minimal. Moreover, the supportiveness of variables related to HEIs, and the competencies required by the employers are found to be at a reasonable status but which calls for strengthening. The computed statistic to test if the university attended by graduates, fields of study, and other socio-biographical data including other higher education related variables have something to do with the status and length of job search reveal that, for most variables, there are no statistically significant relationships. Further, the contributions observed through descriptive data about the roles of prior education, gender, CGPA appeared with no statistically significant relationships to length of job search. From the findings, it is recommended that since development is believed to be unthinkable with the sole labour market window of public institutions, efforts shall be made by policy makers on expanding the private labour market, and the universities themselves are supposed to produce job-creators than job-seekers. Policy makers and stakeholders shall work collaboratively on how to address the employment and employability of graduates through expanding the private sector employment opportunities. Besides, the importance of propagating on the benefits of job-creation, encouragement of engineering graduates to find a job by setting up their own businesses; and providing the necessary supports was suggested to be the concern of policy makers, universities and all other stakeholders rather than to left for chances. Finally, the implications of this study to future researchers was recommended mainly in a way that encourages them to embark on tracer studies of this kind, either inland by extending scope and increasing variables or if possible, examine the issue on comparative lenses across nations.

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms

- ACCI – Australian Chamber of Commerce and Industry
- AfDB – Africa Development Bank
- AFT – American Federation of Teachers
- AGR – The Association of Graduate Recruiters
- BCA – Business Council of Australia
- BOLSA – Bureaus of Labor and Social Affairs
- BT – British Telecom
- CEE – Central and Eastern European countries
- CEIG – Career Education, Information and Guidance
- CSA – Central Statistical Agency
- CV – Curriculum Vitae
- DEHEMS - Development of Higher Education Management System
- DfEE – Department for Education and Employment
- DfES – Department for Education and Skills
- ECA – Economic Commission for Africa
- ECTS – European Credit Transfer System
- EHEEE – Ethiopian Higher Education Entrance Examination
- EEO – Equal Employment Opportunity
- EPIs – Employability Performance Indicators
- ESDP – Education Sector Development Program

- ETP – Education and Training Policy
- FDRE – Federal Democratic Republic of Ethiopia
- FSW – Future Skills Wales
- GDP – Growth and Domestic Product
- GTP – Ethiopian Growth and Transformation Plan
- HEFCE – Higher Education Funding Council for England
- HESA – Higher Education Statistical Agency
- HESO – Higher Education System Overhaul
- ILO – International Labor Organization
- ICDE – International and Comparative Development Education
- ICE – International and Comparative Education
- MDG – Millennium Development Goal
- MoE – Ministry of Education
- MoLSA – Ministry of Labor and Social Affairs
- NBEET - National Board of Employment, Education and Training
- NCIHE-National Committee of Inquiry into Higher Education
- NEPSE - National Employment Policy and Strategy of Ethiopia
- NGOs – Non-Government Organizations
- NSTF- National Skills Task Force
- OECD – Organisation for Economic Cooperation and Development
- OLM – occupational labour markets
- PASDEP – Plan for Accelerated and Sustainable Development to End Poverty

- PES – Public Employment Service
- QCA – Quality and Curriculum Authority
- SASCE - Southern African Society for Cooperative Education
- SDPRP – Sustainable Development and Poverty Reduction Programme
- STI – Science and Technology Institution
- UEA – University of East Anglia
- UKCES – UK Commission for Employment and Skills
- UNAM – University of Namibia Foundation
- UNDP – United Nation Development Program
- UNITRACE - University Graduates’ Tracer Study Course
- UNESCO – United Nations Educational Scientific and Cultural Organisation
- WIL -Work-integrated Learning

Abbreviations

- AAU-AAiT - Addis Ababa University Institute of Technology
- BDU-BiT - Bahir Dar University Institute of Technology
- CEIG – Career Education, Information and Guidance
- CEQ - Course Experience Questionnaire
- CGPA – Cumulative Grade Point
- ECA – Extra-Curricular Activity
- EEPCo –Ethiopia Electric Power Corporation

- ES – Employability Skills
- GoE – Government of Ethiopia
- GTS – Graduate Tracer Study
- HEIs – Higher Education Institutions
- LMI – Labor Market Information
- PDP – Personal Development Plans
- PEPs – Public Employment Programmes
- PES – Public Employment Service
- S&T – Science & Technology
- SHS – Social & Humanities Sciences

CHAPTER I

INTRODUCTION

1.1. Background of the Study

The current population lives in a rapidly changing world with diverse demands and challenges. Thus, governments are increasingly looking to universities to produce human resources with the right kind of capacities, skills and knowledge to meet the demand of the 21st century. They also call on universities to facilitate the shift to knowledge-based economy and high-technology through effective linkages between research and industry to ensure that their countries have a competitive edge in the global market. This is because universities with their critical responsibility are a 'ticket' that promise an economic success and also a 'ladder' for those less-privileged to move to middle class, and preparing young people to enter the labour market (UNESCO, 2012).

Consequently, in recent times, one major interest that has attracted public debate in many advanced countries as well as International organizations has centered on the relationship between higher education and the world of work. Furthermore, greater attention was paid to an increasingly complex and often protracted process of transition from higher education to employment (Adeyemo, Ogunleye, Oke, & Adenle, 2010). The recent economic downturn, mass higher education and widening access have made the labour market for graduates more competitive (Tomlinson, 2008). What is preferred is to note that a degree is no longer enough to guarantee a graduate a satisfying future career since recruiters, in many sectors, are looking for 'work-ready' graduates with clear evidence of job specific skills in addition to high level graduate attributes. To have the competitive advantage in the job market, students need to have developed their employability throughout their time at University. Even further, commitments and efforts to create more and better jobs and to build a more cohesive society is expected from every country.

However, the relevance of their programmes and the employability of their graduates are posing an increasing challenge for the universities, particularly in view of two sets of statistics: enrolment and youth unemployment rates. According to UNESCO's data, enrolment in tertiary

education is more than doubled over a few decades. At the same time, the financial crisis that began in 2008 has resulted in increasing unemployment. According to the 2012 report, young people continue to be the hardest hit by the job crisis. With many economies being reported as not generating sufficient employment opportunities to absorb growth in the working-age population, a generation of young productive workers will face an uncertain future unless something is done to reverse this trend. To increase the graduates' chances of obtaining decent jobs that match their education and training, universities need to equip their students with the necessary competencies to enter the labour market and to enhance their capacities to meet specific workplace demands (UNESCO, 2012).

According to Handy (1990) "although we may experience a shortage of jobs, there will never be a shortage of work to be done" (Rae, 2007:5). What is important is as it was best explained by (Coopers & Lybrand, 1998), HEIs should consider integrating Career Education, Information and Guidance (CEIG) within the curriculum for all HE programmes of study e.g. through incorporating CEIG into the institution's Teaching and Learning Strategy. The institution should ensure that its CEIG provision is designed to prepare its students for a successful transition to employment or further study and for effective management of their career thereafter because Careers Services are increasingly becoming more fully part of the mainstream academic businesses of universities (ibid).

Contemporary interpretations of employability range from the use of simple measures, such as whether or not a graduate has secured a job (using graduate first destination surveys), to in-depth scholarly books on the subject (Pool & Sewell, 2007). Labour market success is a subjective term, which tends to be ill defined in academic literature. In a macro sense, labour market success for an economy may be judged in a number of ways including, the total number of jobs created, the level of unemployment in the economy, the extent of underemployment or the level of real wages, normally in comparison to some international benchmarks. At the individual level the issue is much more complex and depends upon the subjective preferences of the individual worker. To many individuals, labour market success goes beyond just obtaining employment to include issues relating to the desirability of the job in terms of conditions, status and continuity. Studies on graduate employment and work often give a limited description of graduates'

professional success. Sometimes, only the employment status (employed/ not employed) at a certain time after graduation is considered as an indication of professional success (Adeyemo, et al., 2010).

Basically, unemployment is measured on the basis of three criteria: i) without work ii) available for work and iii) seeking work (ILO, 1990; cited in FDRE CSA, 2011:4). However, this varies in the context of developing and developed countries. In the developed countries where the labor market is largely organized, the labor absorption is adequate; the unemployment is measured on the standard definition of the seeking work criteria or active step taken to search for work during the survey reference period. On the contrary, in the developing countries like Ethiopia, where there is no strong labor market information, labor absorption is inadequate, and where the labor force is dominantly self employed, the above standard definition with its emphasis on seeking work criteria is somewhat restrictive and might not fully capture the prevailing employment situation (FDRE CSA, 2011:4).

In particular, for graduates of higher education institutions, being employable means having the qualities needed to maintain employment and progress in the workplace. Employability from the perspective of Higher Education Institutions is therefore about producing graduates who are capable and able, and these impacts upon all areas of university life, in terms of the delivery of academic programmes and extra curricula activities. Thus, the roles of Higher Education Institutions in order to enhance graduate employability embedded into two main components: curriculum and co-curriculum. The main and fundamental questions to be answered are whether those two components are able to help develop a strong character of the graduate (Nordin, 2009).

In developing countries such as Ethiopia, employment provides a linking mechanism between growth and poverty reduction only when it is systematically guided through policies and strategies that influence the determinants of labor market characteristics in a desirable way. Ethiopia, as a country with high rate of poverty and rapid population and labor force growth, needs a strategic intervention to maneuver the linkage between economic growth, employment, and poverty to ensure that growth is shared and pro-poor (National Employment Policy and Strategy of Ethiopia, 2009).

Scholars today agree that the education system positively impacts the development of individuals' competencies for the labour market. However, the question concerning the scope of this impact remains open, especially when compared with other factors such as social background, gender, ethnic affiliation, external and internal sensitivity to work motivation and other environmental factors. One might even question, for example, if teaching modes have any impact on the successful employment of graduates and their professional expertise. Again, the hidden assumption points a finger at differences between fields of study, and their generic vocational orientation. In the context described above, employability and professional success are to a certain extent related terms. Following Teichler (2008), when looking at outcomes of teaching and learning in higher education one does not primarily look at graduates' job performance but rather at the overall impact of study – or “professional success” which can be described by: a) the smoothness of the transition from higher education to the labour market; b) income and socioeconomic status; c) a position appropriate to the level of educational attainment; d) desirable employment conditions (independent, demanding and responsible work); and e) a high degree of job satisfaction (cited in Pavlin, 2010).

The historical evolution of formal labor market dated back to the second half of the 19th-century with the industrialization of Western Europe and North America (Betcherman et al., 2004). In the period of the industrial revolution, the labor market demands the labor force mainly explained by “factory workers” (Mark & John, 2011). The development of massification of higher education has intersected with the shift towards a so-called post-industrial or knowledge-driven economy (Hopper, Salmi and Bassett, 2008). The knowledge-driven economy is said to require individuals with the types of knowledge, skill and creative potential who can fit the challenges of the modern economy characterized by rapid change and tough competition (Mangez, 2008; Hopper, Salmi & Bassett, 2008). The knowledge-driven economy is one in which, according to the OECD (2001b: 148):

Knowledge becomes an essential factor of production alongside the traditional, more tangible factors. With knowledge as an essential factor of production, the ability of people, and cities and regions, to acquire and develop it becomes critical to their successful integration into the global economy . . . Symbolic resources are replacing physical resources, mental

exertion is replacing physical exertion and knowledge capital is beginning to challenge money and all other forms of capital.

Knowledge is now recognized as the driver of productivity gains and economic growth, leading to a new focus on the role of information, technology and learning in economic performance. The broadest definition of the knowledge economy is one in which the production, distribution, and use of knowledge plays a key role throughout the economy (Hogan, 2011). In this regard, higher education is believed to play a central role in preparing individuals to enter the labor force and in equipping them with the skills and knowledge needed to engage in the current competitive labor market. HEIs today are increasingly viewed as central to national strategies for securing shares in the global market and universities as the repositories of valuable human capital to support the economic development of the nation (NCIHE, 1997). Universities are in that favored position of keeping and creating science. University graduates occupy an interesting position in the economy and there are still competing interpretations about the outcomes of graduates when they enter the labour market (Elias and Purcell, 2004; Brown & Hesketh, 2004; Keep and Mayhew, 2004). In this context, development policies continued to depict that graduates as being an elite social and occupational group who will access and create jobs and fulfil their potential through careers as ‘knowledge workers’.

However, different global studies found out for different factors operating against graduate labour market. For instance, Enric, Carme & Esperanca (2010) discovered factors of employment and labor market outcomes of three cohort graduates in Catalonia who completed their studies in the academic years of 1997-1998, 2000-2001 and 2003-2004 correspondingly. The study found out that generic skills are the most determinant factors of employment and job qualities of graduates in Catalonia. More recently, the study made by (Cheung, Yuen, Yuen, & Cheng, 2011) on factors affecting employment, unemployment and graduate study of university graduates in China, found out that the graduates who are more likely to study in graduate school and come from higher reputable colleges secured jobs faster than others. However, Zhou (2003) previously reported that the reputation of the university has a small effect on the graduate job searches in China. In relation to gender, Zhou (2003) & Min et al. (2006) indicated that male graduates find jobs more easily than female graduates. In terms of fields of study, the online

educational consulting firm MyCos demonstrated that in China it was difficult to find jobs for graduates of law, computer science and English education in 2008 (<http://www.mycos.com.cn>).

The experience in Greece also shows, according to Vassilis, Aristogiannis, Christos & Beatrice (2011), though accurate data on unemployment is hard to come by, there is no doubt that today the country is faced with a high unemployment rate (Hellenic Statistical Authority, 2011). Especially, as to Karamesini (2008), the incorporation of university graduates in the labour market or the length of job search range from five to seven years after graduation (e.g., 5.3% of men and 7.2% of women); and remain with a significant percentage of inactive university graduates (e.g., 9.7% of men and 9.1% of women).

Similarly, studies conducted in Africa demonstrate the severity of graduate unemployment. For instance, in South Africa by Kalie, Oosthuizen & Westhuizen (2006) found out about the causes for unemployment of educated youths and come up with the findings that the skills of job-seekers' being lesser than the skills needed in the labor market is the basic reason. The same is true in Northern Africa that an unmet need for specific skill sets are their special concern for high unemployment among the educated youths. In some North African countries for which there are data on unemployment, rates among young people with university degrees are higher than those of young people with only secondary school education or less (AfDB, OECD, UNDP and ECA, 2012). For example, in Tunisia, as to Stampini and Verdier-Chouchane (2011), the unemployment rate among university graduates in 2008 was 33% among men and 46% among women. However, among university-educated youth in Tunisia, the unemployment rate is lowest for engineers (24.5 %), and highest for graduates in economics, management and law (47.1%) and in social sciences (43.2%). In Egypt, unemployment among university graduates was 34% in 2006 (ILO, 2011). Though Morocco managed to reduce the unemployment rate of those with a university degree from 29% in 2005 to 18% in 2011, the subjects the majority of students choose to enter are mainly social sciences, business and law. This is because with 51%, North Africa is the world region with the highest proportion of students in social sciences, business and law. The proportion of students in technical subjects such as engineering, on the other hand, is only 10%, compared to 20% across Asia (AfDB, OECD, UNDP & ECA, 2012).

Thus, the goal of achieving full employment among other macroeconomic goals is an important one in many developing nations where unemployment and underemployment has been a major

cause and consequence of widespread poverty (Ayoyinka & Oluranti, 2011). For instance in Ethiopia, the study conducted by Denu, Tekeste & Van der Deij (2005/7) found out that the youth population faces a higher level of unemployment than their prime age counter parts and significant differences exist within the youth cohort across location (urban/rural), gender, and education. In addition, Nekatibeb & Amsalu (2012) carried out a study on the issue related to graduate labour market and suggested that university education was rated as a good basis for enhancement of generic skills such as personal development, entrepreneurial skills and carrying out current tasks. Nevertheless, the study didn't consider various measurements or factors of employment. Thus, it seems essential to study the issue of graduate employment by considering various factors in a comparative perspective.

In this regard, the Federal Democratic Republic of Ethiopia, in its part, has shown its major new emphases which are guided by the present overarching development vision of the country to become a middle-income country by the year 2025. One major new emphasis then appeared to be the concern with improving the quality and the employability of university graduates. The sustainable development of research capacity for knowledge creation and technology transfer in priority sectors is another one (Ethiopian Growth and Transformation Plan (GTP), 2015).

It is argued that employment provides an important linkage between economic growth and poverty reduction by allowing the poor to generate income. As asserted in the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP), the Government of Ethiopia gives due emphasis to employment creation, both in the context of poverty reduction through creating employment opportunities and using labor resource for growth as one of the most important resources the country is endowed with. While employment issues currently are governed by the provisions of the Labor Law of the country and by different international conventions ratified by the country, it has initiated a national employment policy and strategy and has introduced National Employment Policy and Strategy of Ethiopia that guides the issue of employment creation and labor administration in a coordinated manner, both in the urban and rural and formal and informal sectors (NEPSE, 2009).

It is also well recognized in Ethiopia that the availability of employment opportunities and their characteristics constitute an essential transmission channel from growth to poverty reduction. The link that bridges economic growth with poverty reduction and its ultimate eradication is job

creation. Employment opportunities and their characteristics provide a mechanism for shared and pro-poor growth (NEPSE, 2009).

Moreover, two principal factors, among others may be responsible for the growing unemployment problem in a country. First, the economy is not growing fast enough to absorb the high number of people, especially graduates coming into the job market. This is the classical case of supply out-stripping demand. Second, the universities and other tertiary institutions are not training people with appropriate skills required for a 21st century competitive global economy dominated by Information Technology (IT). The third explanation may be that urban unemployment might be more serious than rural unemployment for example in creating political instability. Supporting this idea, NEPSE (2009), argued that a mass of unemployed population, especially when such incidence is high among the educated and the youth, becomes a potential source of political and civil unrest. This seems to hold true in some parts of the world. For instance, the uprisings in the Middle East especially in Egypt and Tunisia which toppled the respective regimes is motivated by major socioeconomic problems such as rising unemployment (Behr & Aaltola, 2011; in Abebe 2011:2).

Therefore, both developing and developed nations attempt to measure their labor market in terms of employment among their knowledge workers as well as graduates by using the standard measurements. In this context, the present study considers engineering graduates' employment in order to measure the current status of the Ethiopian labor market. The reason for examining the employment of graduates' of engineering is because the field is the main focus of the Ethiopian higher education institutions with the intention that it is one of the significant fields of study that will serve as a potential instrument of fostering and realizing the long term vision of becoming a middle income country by the coming decade.

As far as the knowledge of this researcher is concerned, the issue of employment does not feature noticeably in HEIs of Ethiopia, however, institutions are expected to have some form of engagement in employability and students are believed to have the opportunity to be well prepared for work and to have a truly employability mind-set. Especially, the observed unemployment and under-employment among graduates of the institutions of higher learning, and the sharp rise in the universities' enrolment, call for this quantitative and empirical research. Again, there have been various studies conducted in the field of education and economics; the

issue of higher education and labour market linkages with its considerable amount of elements has rarely related. Thus, this study has come to cross the borders of the two disciplines in terms of higher education institutions and its roles to prepare graduates to the current labor market and the status of the national macro economic conditions so as to absorb graduates. More specifically, the study is concerned with the employment of the case study universities, AAU-AAiT and BDU-BiT, engineering graduates.

1.2. Statement of the Problem

The creation of job positions depends on a number of assumptions including labour demand and supply side factors. Contrary to the traditional view of the labour market equilibrium, in reality the labour market is in a constant state of flux. On the side of the labour supply, there are various flows of workers between different occupations, between employment and inactivity, employment and unemployment, and between unemployment and inactivity. On the labour demand side, there is a constant process of simultaneous job creation and destruction by firms. Firms generate a new flow of vacancies that can be matched with workers searching for jobs. It is stressed that not only the characters of labour supply (age, education, employment experience, gender, search intensity, etc.) play a role in determining one's labour market position but also labour demand factors (sector-specific or firm-specific) are very important. For instance, in the study of unemployment, it is important to take into account the actual time spent for job searching as longer unemployment may lead to higher human capital depreciation but also to the intensification of search (Melink & Pavlin, 2009). In relation, Melink & Pavlin (2009: 34) have said that:

Successful entry into the labour market after graduation is thought of as a sign of good coordination between the education sector (supply of competencies) and labour market requirements (demand for skills). Matching efficiency as suggested by the *job search and matching theory* approach is crucial factor determining unemployment and unemployment (search) spells.

In this context, it is possible to argue that the relationship between the labour market needs and the actual attributes (competencies) of graduates receives mere attention (Molla, 2013). Along

with this, the growing number of higher education graduates and the growing employment problems of graduates in many countries today are making the transition period of university graduates a more visible phenomenon, which meets increased public attention (Teichler, 1998, 2000).

In the last two decades, there have been various innovations made by developing countries of which Ethiopia is one. In Ethiopia, one of the innovations of the national strategy is access and expansion of higher education. For example, Ethiopia's higher education system has grown from 2 to 34 Universities or you meant higher education institutions (MoE, 2013/14), with an additional 10 universities to be established by 2020. Subsequent to the proliferation of tertiary institutions in Ethiopia, the total student enrolment has expanded rapidly from 420,387 for undergraduate students in HEIs in 2009/10 to 593,574 in degree programs alone in 2013/14 (See Table 1.1). Correspondingly, graduate turnout of these institutions grew rapidly. Despite this upsurge number of tertiary institutions; enrolment rate; and increased graduate turnout, the issues of long term job search and graduate unemployment with their attendant consequences (such as increased crime rate, alcoholism, anxiety, depression, restlessness, unfulfilled dreams, impaired financial position, etc) are posing a great challenge in Ethiopia (Berihanu, Abrham & Hannah, 2005/7). According to CSA (2007) unemployment in Ethiopia is the highest in the age group 15 – 19 years and age group 20-24. From the total unemployment, these two age groups' together account for 45 % of the unemployment. More recently, the 2012 survey result showed that about 48 percent of the Ethiopian urban working-age population is not engaged in productive activities due to unemployment or being inactive (Fitsum, 2014). Underemployment is also another major feature of Ethiopian labor market. This situation is seen as a generalized waste of human resources and retards of the socio-economic transformation of the nation. Due to this, the issue of graduate employment/unemployment today is a phenomenal topic of discourse across professional gatherings in media and commentary reviews, employer surveys, national economic debates, social networks and employee forums.

Another innovation of the national strategy in Ethiopia is the plan for establishing higher education accreditation system whereby, *inter alia*, national targets for education and required competencies, National Core Curriculum for natural and social science fields & 70/30 policy

(70% Science and Technology out of which 30% for engineering and 30% social science), other skills training and a national qualifications (assessment and accreditation) framework for higher education (Molla, 2013). There are however, informally heard complaints that ought to be mentioned as shortcomings in clearly articulating the links between higher education and labor market in the strategy of Growth and Transformation Plan (GTP). Again, all ESDP I, II, III, IV, PASDEP, Higher Education System Overhaul/HESO (2004), Higher Education Proclamation, No. 650/2009, The Education and Training Policy (ETP) of 1994, The Education Sector Strategy of 1994, The Proclamation No. 351/2003 and The higher education policies and strategies describe the issue of graduate employment as well as labor market very rarely.

However, from the international higher education policies and strategies perspective, the issue of higher education and graduate labor market is treated much deeper and broader. It is often related and studied with multiple factors like socio-biographic back ground data, the study conditions of higher education, the curriculum, the individual study behaviours and competencies (hard skills and soft skills), job searching methods and transition period of graduates (See e.g. Schaumburg, 2012, Birch et al., 2009; Garcia Aracil, Van Der Velden, 2008; Selvadurai, Choy & Maros, 2012 to mention just a few). The necessity of analyzing these elements in the context of Ethiopia is evident given to ensure the notable increase of employment as well as economic development of the nation. Likewise, though not proved yet, and this study is concerned about, universities' effort in tackling unemployment and enhancing employability looks invisible.

One of the main arguments of the current public debates is that students do not come to university for the love of learning alone; they also expect skills and experience to enable them to access graduate employment opportunities (Korka, 2010). One of the main reasons students choose to study at university is to enhance their career prospects (Korka, 2010). However, unemployment is one of the challenges facing today's world. As it is frequently confirmed by several authors, unemployment is a problem for both developed and developing countries. For instance, according to Rafic et al. (2010) & Eita et al. (2010) cited in (Abebe, 2011), unemployment has been the most consistent problem in both advanced and poor countries.

Ethiopia's 2014 Urban Employment/Unemployment Survey by the Central Statistical Agency (CSA), issued in October 2014, indicates that the unemployment rate in 16 major towns stands at 20.7 percent, split between males and females, i.e., 13.8 percent and 28.0 percent, respectively.

Of interest in the report is the fact that higher education does not seem to come to the aid of the unemployed and the job seeking, both male and female. For instance, of those presented as unemployed, there is a high number of higher certificates holders (2.5 percent); diploma and degree holders (1.6 percent), as well as those with secondary school completion certificates (20 percent) (CSA, 2014; in Keffyalew, 2014).

Unemployment coupled with population growth and increased poverty, has a significant impact on growth and development at large. It causes a waste of economic resources such as the productive labor force, and affects the long run growth potential of an economy. It gives rise to private and social problems in a society such as increased crimes, suicides, poverty, alcoholism and prostitution. High level of unemployment can also contribute to the spread of HIV/AIDS to developing countries (Henry et al., 1999 & Astatkie, 2003; cited in *ibid*). In general, unemployment affects health, household income, government revenue and hence GDP and development at large.

Though it is hard to come by accurate data, specifically on graduate unemployment, there is no denying the fact that the country is today faced with high unemployment rate, perhaps including secondary school leavers or even below that level. In particular, of the 20.5% of the total unemployed labor force in 2009, most of the educated labor force is believed to be concentrated around cities in search of better opportunities and infrastructure (World Bank, 2011). Accordingly, the everyday sight of the growing army of unemployed youths roaming the streets with despair written all over their faces attests to the loose gravity of the job market situation in Ethiopia.

The tertiary institutions in Ethiopia began to turn out tens of thousands of degree and diploma holders. For instance, leaving aside those in diploma programmes, year in year out, the number of enrolments in the undergraduate degree level in Ethiopia for the past few years were as seen below the Table. Viewed from this vantage point, an understanding of the length of job search among graduates in developing countries like Ethiopia seems crucial for both theoretical and policy reasons.

Table 1.1**Enrolment Trends of Undergraduate Degree in Higher Education Institutions of Ethiopia**

Year	2009/10	2010/11	2011/12	2012/13	2013/14
No. of Under Graduate Degree	420,387	447,693	494,110	553,848	593,574

Adopted from Education Statistics Annual Abstract 2013/14 (MoE, 2015: 72)

Besides, the Intake Ratio of Science and Technology to Social and Humanities Sciences in the year 2006 E.C. (2013/14), the government regular program undergraduate intake ratio of Science & Technology to Social & Humanities Sciences (S&T to SHS), taking the year I enrolment as new admission, is 74:26 where as this intake ratio for all programs (regular, evening, summer, distance) is found to be 67:33. This shows the possibility of getting outnumbered graduates in engineering fields which call for immediate employment (MoE, 2015:72).

It is explained in the CSA report (2014: Keffyalew, 2014: 1) that the overall employment ratio to total population is estimated at 52.6 percent. The CSA claims this is calculated, according to standards by the International Labor Organization (ILO), i.e., a percentage of total employed population – in this case nationwide – to the working age population. Nonetheless, the author argued that it does not seem to speak in terms of the country's job market reality. Further, though the proportion of graduates who found jobs may also be many in number, it is undoubted that some fraction of graduates are yet in search of jobs, any job for that matter. As it was elaborated in the National Employment Policy and Strategy of Ethiopia (2009), employment generation has two important dimensions that are considered to be the two sides of a coin. The first dimension refers to the ability of the economy to create jobs for various skill categories as per the requirement of the economy. This dimension refers to the demand side of job creation. The second dimension deals with whether or not the skill levels of available pool of persons match with the type of skill that the economy requires. This dimension refers to the supply side of job creation. Besides, there is a third dimension that relates to the governance of labor market relations and labor market services. This refers to labor market institutions. The fourth dimension

cuts-across sectors/themes having an important bearing on employment and is referred to as cross-cutting issues (NEPSE, 2009:14).

As successful implementation of such strategies call for coordinated action among pertinent government institutions, and non-government stakeholders, HEIs in Ethiopia need to play their part to address the important dimensions of these issues i.e., their graduates' employability because "there is no debating that a major responsibility for the smooth integration of graduates into professional life, and hence into society, lies with higher education institutions" (Pukelis et al., 2007; in Gunn, et al. (2010:1). Yet, despite the expanding of higher education and widening participation, the senses of priority given towards enhancing employability and the extent to which employability initiatives have been established and embedded in Ethiopian higher education institutions is not well known. Therefore, as the situations in higher education and the labour market are changing rapidly, the economy is becoming increasingly knowledge-based and competitive, and the nature of graduates' work is being transformed and diversifying, investigating the degree of attention given for graduate employability is found to be important and this study is concerned for. It is with some of such important issues in mind, that the researcher set out to investigate how HE institutions in Ethiopia tackle unemployment and enhance the important provision of employability support for graduates since there has been increasing recognition of the need to enhance graduate students' employability.

Traditionally, labour market success (not only for graduates) is understood in terms of performing work for payment. Using this conventional and simplified approach one would simply need to look at the fact of whether the respondent has a job (at the micro-economic level) or at the aggregated employment rate (at the macro-economic level). This traditional approach to measuring labour market success is said to be still useful however insufficient to describe various aspects of 'success' and rather shall be related to different issues including the socio-biographic background of individuals (Melink & Pavlin, 2009: 65). Therefore, this study was planned to consider graduate labour market conditions in line with universities' experiences in enhancing their students' employability skills, the availability or absence of statutory entitlements to employability support; accessibility of careers information, advice and guidance for students; academic staff involvement in employability development; integrating of work-based learning into courses; any other employability support to which institutions commit; and the effects of all

these on labor market outcomes is not documented as there are no such studies, as the knowledge of this researcher is concerned. Based on these rationales, this study is conducted to investigate the links between higher education and labor market in Ethiopia with particular focus of employment as well as job search among engineering graduates from Addis Ababa and Bahir Dar Universities. In this context, the following basic questions were designed and responded throughout the course of this study.

1.3 Research Questions

- i. How is the employment status of AAU-AAiT and BDU-BiT engineering graduates in the Ethiopian labor market?
- ii. How long does it take to search jobs/employment for the engineering graduates of AAU-AAiT and BDU-BiT?
- iii. How do variables like the socio-biographic background, prior education and interest of engineering graduates from AAU-AAiT and BDU-BiT relate to employment opportunities?
- iv. How supportive are HEIs' structure, study condition/facilities, curriculum and individual study behaviour to the job search as well as subsequent employment of graduates from AAU-AAiT BDU-BiT?
- v. To what extent do employability skills acquired by the graduates of AAU-AAiT and BDU-BiT, as required by the graduate labor market?
- vi. To what extent the labour market conditions assist the graduates of AAU-AAiT and BDU-BiT to find jobs/employment?
- vii. What are the most commonly used job searching methods by the graduates of AAU-AAiT and BDU-BiT?

1.4 Objective of the Study

1.4.1 General Objective

The main objective of this study was to examine the linkages between higher education and the labor market in Ethiopia, with particular focus on the factors influencing employment opportunities of engineering graduates from Addis Ababa and Bahir Dar Universities.

1.4.2 Specific Objectives

More specifically, this study was designed to:

- trace the employment status of AAU-AAiT and BDU-BiT engineering graduates in the Ethiopian labor market;
- find out the time range that engineering graduates of AAU-AAiT and BDU-BiT demanded by the labor market to search jobs/ employment;
- investigate the relationships between the socio-biographic background of AAU-AAiT and BDU-BiT graduates and their employment opportunities;
- scrutinize the degree of supportiveness of the structure, curriculum, study conditions of higher education and study behaviour of individuals to the subsequent employment of AAU-AAiT and BDU-BiT graduates;
- test the extent of acquired employability skills (competencies) by the graduates of AAU-AAiT and BDU-BiT, as required by the graduate labor market;
- find out the most commonly used job searching methods by AAU-AAiT and BDU-BiT graduates;
- examine the status of 2012 engineering graduates of AAU-AAiT and BDU-BiT in finding employment after their immediate graduation;

1.5 Significance of the Study

This study may attempt to assess the Ethiopian universities' efforts in enhancing graduate employability and the extent of their success as examined in their graduate labor market

outcomes or in the light of graduates' victory in finding their first employment. The starting point of the study is the conviction that the recent government agenda for the quality and relevance of HE besides the massification and widen participation, are to be supported by such type of independent research.

Hoping that consensus is there about the responsibilities of universities in 'producing graduates who are capable and able to win in the labor market' through practices beyond 'business as usual', the findings secured through this assessment on a micro level are believed to contribute to different parties. Specifically, the results of the study may:

- Help policy makers to have a clue about the status of employment development opportunities in HEIs;
- Inform educationalists on the degree of impacts of employability efforts on labor market outcomes of graduates;
- Notify Quality Assurance agency on the relevance of University-based trainings;
- Alert the academic community towards the timely demanded attention i.e., graduate employment;
- Warn stakeholders of universities about what is expected of them to run the employability agenda in accordance to national and global labor demands and the reality at the playing field;
- Shed light as a tool for knowledge transfer activities. For instance, the employability competencies would be identified as developed in any of the institutions could have enormous benefit to the other HEIs as a whole;
- Initiate more stand alone mechanisms of graduate employability practices across HEIs;
- Provide a greater clarity on the issues, challenges and contexts of graduate employment;
- Create opportunities for the diverse stakeholder groups to share their perspectives;
- Serve as a spring board to extend the study by increasing breadth and depth.

From a theoretical standpoint, this study provides new insights into the factors influencing the labour market outcomes of recent graduates, adding to the somewhat limited body of empirical work in this area (e.g., Birch, Li, & Miller, 2009; Carroll, 2010; Chia & Miller, 2008). Besides, this study may advance the literature on the graduate labor market, employment, employability,

unemployment, transition from university study to the world of work, job searching methods, labor market conditions and higher education as well as the supply and demand factors of the graduate employment.

1.6 Delimitation of the Study

This study is focused on exploring the employment status and the length of job search of graduates. Besides, the determinant factors influencing employment opportunities of engineering graduates mainly those 1st degree graduates at the academic year of 2012 from AAU-AAiT and BDU-BiT, (Public Higher Education Institutions in Ethiopia). The study variables include: (a) Employment Status of Graduates; (b) length of job search as well as duration of finding employment; (c) the socio-biographic background factors determining the employment status and length of job search situations; (d) the supportiveness of HEIs' structure, curriculum, study conditions, and the study behaviour of individuals to the subsequent employment of University graduates; (e) the extent of acquired employability skills (competencies) by the graduates of AAU-AAiT and BDU-BiT, as required by the graduate labor market; (f) the influence of labor market conditions to employment (g) job searching methods used by graduates while searching employment.

1.7 Limitations of the Study

As this study is conducted focusing on the 2012 engineering graduates, most of those graduates are distributed throughout the country and even some abroad. Therefore, the only instrument to obtain data about most of the subjects is through the questionnaire. As a result, other instruments such as face-to-face interviews and observations were inapplicable, which may limit the comprehensiveness of the information.

Besides, it would have been better if the study incorporated engineering graduates of a series of years, like for instance graduates of before 2012 and post of it. However, those cohorts of graduates of the previous years are not included under the belief that they are not the outcomes of the revised and harmonized engineering curriculum. In addition, graduates of the later years are left due to the conviction that those batch members are to be at the verge of their graduation

and may not be employed and even if there are some who secure employment, they may not have adequate information about the labor market.

Further, it is also to be noted that employers were not taken from every corner of the nation; rather, from organizations found in Addis Ababa and Bahir Dar cities. Therefore, the limitations are related to breadth in terms of subjects of the study.

1.8 Definition of Terms

Graduates: in the context of this study, it refers to a person who completed the required course of study in the field of engineering within four or five years time from AAU-AAiT or BDU-BiT and who secured a bachelor degree (BA/BSc.).

Higher Education: refers to education in the arts and sciences offered to undergraduates and graduate students who attend degree through regular programmes, conduct research, and render community services (Higher Education Proclamation, No. 650/2009). In relation to this, *Higher Education Institution* is an accredited educational institution which admits students' certified by Ethiopian Higher Education Entrance Examination (EHEEE) to award a bachelor or higher degrees.

Labor Market: is local or national (even international) in its scope or it may be a specific physical or geographical region in which workers find paying work, employers find willing workers, and wage rates are determined (Baglioni, 2014). Labor market also involves labor demand, labor supply, determination of wages and other conditions of employment.

Tracer Study: is a graduate or alumni survey that attempts to trace the job search as well as the employment of previous students of an educational institution (Latif & Bahroom, 2010). It is an approach that enables to obtain information about possible deficiencies in the educational and learning process; and can form the basis for planning activities for the improvement in the future. Previous authors like Aina & Moahi (1999) explained that tracer study enables the contextualization of graduates of a particular university through a system that is dynamic and reliable in order to determine their life path or movement. It also enables the evaluation of the

results of the education and training provided by a particular institution and examines and evaluates the current and future career and employment opportunities / prospects of graduates.

CHAPTER II

CONTEXT OF GRADUATE LABOUR MARKET IN ETHIOPIA

2.1 Introduction

This chapter deals with providing some information about the Federal Democratic Republic of Ethiopia (FDRE), a country in which this dissertation has taken place. The location, governance, demographic and socio-linguistic situations are described. In addition, some aspects of the socio-economic situations are elaborated so that to give a clue on the graduate labor market affairs of the nation.

2.2 The Geographical Location, Governance, and Demographic Situations of Ethiopia

Figure 1.1

Political Map of Ethiopia



Source: <http://www.mapsofworld.com>

The Federal Democratic Republic of Ethiopia is the ninth largest country in Africa and is located in the northeastern region, popularly referred to as the Horn of Africa. Ethiopia extends from 3⁰-15⁰ north of the equator and 33⁰-48⁰ east of the Greenwich Meridian with the total area of 1.14 Million Sq. Km. Ethiopia is a land locked country bordered by Sudan, Kenya, South Sudan, Somalia Djibouti, and Eritrea. In the year 2015, Ethiopia had an estimated population of 98.9 million, which ranks 13th in the world and the second-most populous in Africa; after Nigeria. It is also one of the world's oldest civilizations (<http://worldpopulationreview.com>). Ethiopia is a home to various ethnicities, predominantly the Oromo at 35% of the country's population and the Amhara, who account for 27%. Other major ethnic groups include the Somali (6%), Tigray (6%), Sidama (4%), Gurage (2.5%), Welayta (2.2%), Afar (1.7%), Hadiya (1.7%), and Gamo (1.5%). Afro-Asiatic people account for most of the population (World Population Review, 2015). In terms of languages, Amharic is the lingua franca and the federal working language, while the rest major languages are regional working languages and spoken by the respective nationalities (<http://worldpopulationreview.com>).

The governance set up in Ethiopia is based on a constitution that established the Federal Democratic Republic of Ethiopia in 1995 (FDRE, 1995). The document allowed the federal government to be responsible for national defense, foreign relations and general policy of common interest and benefits. The constitution further indicates that the federal state comprises nine autonomous states vested with power for self –determination and two city administrations. The FDRE is structured along the lines of bicameral parliament, with council of People's Representatives being the highest authority of the federal government. Members of both parliaments are elected by universal suffrage for a five-year term. The federal state is headed by a constitution president and the federal government by an executive prime minister who is accountable to the Council of Peoples' Representative. Each autonomous state is headed by a state president elected by a state council. The judiciary is constitutionally independent. Regional states have considerable authority and responsibility, ensured by the constitution, which they exercise and discharge through councils at region, zone, woreda and kebele levels. FDRE is composed of states which are delimited on the basis of settlement patterns, language, identity and consent of the peoples concerned (Ethiopian Government Portal, 2015).

2.3 Economic Status

Ethiopia has undergone significant economic and social changes and has recorded some of the highest growth rates in the world-over 10% in some years, however, the Human Development Index (HDI) and its relative ranking have not moved appreciably during the last decade (United Nations Development Programme, 2015). In the same vein, World Education News and Reviews (2014) reported that Ethiopia has shown remarkable economic growth, but a growing number of population, poverty, unemployment and socioeconomic insecurity remained serious problems. While there has been strong economic growth since 2002, it is argued that long term trends remain insufficient to keep up with population growth and until now have not enabled significant reductions in poverty. In response to this, the Government of Ethiopia is determined to scale up its poverty reduction and sustainable development efforts, as demonstrated in policy and programme documents including the Sustainable Development and Poverty Reduction Programme (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and sector development programmes such as education, health, agriculture and water.

Ethiopia's economy is based on agriculture but the government is pushing to diversify into manufacturing, textiles, and energy generation. Coffee is a major export crop. The agricultural sector suffers from poor cultivation practices and frequent drought, but recent joint efforts by the Government of Ethiopia and donors have strengthened Ethiopia's agricultural resilience, contributing to a reduction in the number of Ethiopians threatened with starvation. The banking, insurance, telecommunications, and micro-credit industries are restricted to domestic investors, but Ethiopia has attracted significant foreign investment in textiles, leather, commercial agriculture and manufacturing. Under Ethiopia's constitution, the state owns all land and provides long-term leases to the tenants; land use certificates are being issued so that tenants have more recognizable rights to continued occupancy and hence make more concerted efforts to improve their leaseholds. While GDP growth has remained high, per capita income is among the lowest in the world. The country has been achieving a promising economic growth. Its economy continues on its state-led Growth and Transformation The five-year economic plan has achieved high single-digit growth rates through government-led infrastructure expansion and commercial agriculture development. According to The Economist (January 6, 2011), the country had the 5th fastest growing economy in the world during the periods 2001-2010 at an average annual GDP

growth rate of 8.4% and the 3rd with a forecast of 8.1% during the periods 2011-2015. Ethiopia in 2014 has continued construction of its Grand Renaissance Dam on the Nile to develop electricity for domestic consumption and export.

2.4 Education System

The Ethiopian education system in the 1980s was theory-oriented without due emphasis to vocational and technical trainings and thus it did not help students improve their cognitive skills and motivate them for success (MOE, 2002). In 1994 a new education policy that dramatically changed the education system was introduced and adopted taking into consideration the limitations of the previous educational system. The new education policy focuses on producing a skilled labor force rather than a large cohort of relatively unskilled secondary school graduates. Though the number of technical and vocational schools has increased considerably in Ethiopia in recent years, leading to several fold increase in the number of university and technical school graduates, employment opportunities, especially in the formal private sector, have not kept pace with increasing number of graduates. The problem is compounded by a lower quality of education and skill mismatches.

In the PASDEP (2010-2015), the Government of Ethiopia has clearly articulated its goals, strategies and investment priorities, placing education at the top priority of the agenda, with a firm belief that long-term, sustainable development rests upon the expansion and provision of quality education to all citizens. Education is at the heart of the socio-economic development of the nation. To this reflection, Fagrilind & Saha, (1989) remarked that the investment in human capital has a direct and positive impact on productivity as well as development of the socio-cultural activities.

The achievement of the long-term vision of transforming Ethiopia into a middle-income country demands a transformation of the economy through, among other things, conscious application of science, technology and innovation as the major instruments to create wealth. This, in turn, requires unfolding commitment to increasing the overall level of education of the population and a focus on science and technology education in particular. As a result, the Ethiopian education

system shows systematic increase in almost all measures of activity in all sub-sectors from pre-primary to higher education (MOE, 2013/14).

Even though, the higher education system of Ethiopia has a relatively short history of some 60 years only, it has undergone both major quantitative and qualitative changes during the past few years. In congruent with this fact, Ashcroft (2010:1; in Hailemelekot, 2013:78) noted that:

The Ethiopian Government sees higher education as an important plank in its strategy for social and economic development. Particular ideas related to the purposes of higher education are valued and prioritized. Some of the purposes are seen as relatively less important (for example furthering the arts and culture) than others (especially employability, democracy and entrepreneurialism).

Further, the higher education system of Ethiopia is expected to contribute a lot for the national Goal of Ethiopia, i.e., “... to become a country where democratic rule, good-governance and social justice reign, upon the involvement and free will of its peoples, and once extricating itself from poverty to reach the level of a middle-income economy as of ... [2025]” (GTP, 2015). To realize this goal access and expansion of higher education is at the central focus of the national educational policies (Gebremedhin, 2014). Accordingly, the degree of attention that is observed in the Ethiopian education system in terms of access, equity, quality, effectiveness and efficiency are not to be put under question.

2.5 Labour Market Affairs

Since the second half of the 1990s, the macro environment in the country started to be characterized by existence of relevant policies, strategies and programs promoting and supporting the Education for Employment agenda. For instance, the Education and Training Policy and Strategy (1994); the Education Sector Development Program (1997-2017); the Industrial Development Strategy (2003); the Plan for Accelerated and Sustained Development to End Poverty (2006); and, the 70:30 Higher Education Enrollment Policy (2009) emphasize on the place given to education in reducing poverty and steering economic and social development (Ashcroft, 2010; in Hailemelekot, 2013:78).

Specifically, the Government of Ethiopia (GoE) gives due emphasis to employment creation (as asserted in PASDEP and GTP) and different policies and strategies have been introduced and implemented by the government for employment generations. According to Ethiopia's National Employment Policy and Strategy (NEPS) (2009), employment generation has two important dimensions - the demand and supply side of job creation. The first dimension (*the demand side of job creation*) refers to the ability of the economy to create jobs for various skill categories as per the requirement of the economy. Those policies and strategies on the demand side of the labor markets include the special incentives and supports provided to private sectors and the public employment generation schemes. The second dimension (*the supply side of job creation*) deals with whether or not the skill levels of available pool of persons match with the type of skill that the economy requires. Besides, there is a third dimension (i.e. labor market institutions) that relates to the governance of labor market relations and labor market services. On the supply side of the labor markets, there are significant efforts to improve labor productivity in both farm and off-farm activities. Despite such improvements, unemployment is reported to be high and is one of the socio economic problems in the country (Martha, 2012). This shows that the economy is unable to provide adequate jobs to the growing population in both rural and urban areas.

Of course, Ethiopia has issued proclamations in the effort to improve employment outcomes through improving employment relations. The Labor Proclamation (Proclamation No. 377/2003) (FNG, 2004), the provisions of the Employment Exchange Service Proclamation (Proclamation No. 632/2009) and the Right to Employment of Persons with Disability (Proclamation No. 568/2008) govern the relations between employers and employees. There are also employment related ILO Conventions (about 20) that Ethiopia has ratified as part of its domestic law (National Employment Policy and Strategy of Ethiopia, 2009:11).

A comprehensive strategy of employment creation seeks to promote job creation in the private sector, in the public sector, and also in terms of promoting self-employment and entrepreneurship in urban and peri-urban areas. Accordingly, the NEP of Ethiopia (2009) identified policy action areas pertaining to the demand side of employment generation as: Accelerating private sector development for employment generation; and ensuring effective and efficient public sector employment. It is argued that employment can be generated and enhanced in the public sector through investments in employment-intensive infrastructure development and

through other Public Employment Programmes (PEPs). It is clear that a labor-intensive approach, in a country where there is massive underemployment and unemployment, would create job opportunities for many thousands of people from a given amount of investment without the need to compromise on quality and efficiency. Although there is room for employment creation through the adoption of labor-based approaches in infrastructure, the actual employment gains via such approaches have been limited in Ethiopia. The supply side of job creation deals with whether or not the skill levels of available pool of persons match with the type of skill that the economy requires. Basically, it is concerned with improving and raising labor productivity, which can be achieved mainly through education and training.

Labor market institutions refer to issues that relate to the governance of labor market relations and labor market services. These refer to the existing provisions – UN conventions, national legal provisions, policies and programmes, and employment and social protection interventions. Labor market institutions in Ethiopia include government bodies such as the Ministry of Labor and Social Affairs (MoLSA) at federal level and its regional counterparts - Bureaus of Labor and Social Affairs (BOLSAs) at regional levels, labor courts, trade unions and employers' associations. Such organizations are responsible for protecting the interests of workers based on standards and regulations related to employment, wage payments, benefits, promotion and other issues.

Further, there are different policies and strategies that affect employment in Ethiopia. The country has issued proclamations in the effort to improve employment outcomes through improving employment relations. Ethiopia has one consolidated Labor Law (Labor Proclamation 377/2003), supported by regulations, codes of practice and collective bargaining agreements. Labor rights are enshrined in the constitution. The rights include the security of the person, the prohibition against inhumane treatment and the abolishment of slavery and servitude, and forced and compulsory labor. Ethiopia's Labor Law was proclaimed in 2003 to ensure that worker-employer relations are governed by certain basic principles, to guarantee the rights of workers and employers to form associations, and to strengthen and define labor administration.

As it was explained by Martha (2012), Ministry of Labor and Social Affairs (MoLSA) of the Federal democratic Republic of Ethiopia is responsible to collect, process, analyze and

disseminate the labor market information (LMI) at national level. In many countries, particularly in the developing world, major challenges for the Public Employment Services (PES) to deliver on effectively targeted interventions include their lack or low levels of technical and financial capacity, and insufficient infrastructure and utilities needed to operate the employment offices. Ethiopia is not an exception in this regard. PESs in Ethiopia are weak. They have not been able to keep up with the changing requirements of the labor market, or to offer targeted packages of services that meet young people's needs. Due to the aforementioned limitations and others, informal mechanisms such as personal networks have been common ways of recruitment in Ethiopia.

Therefore, even though labor market institutions are expected to play important roles with regard to employment relations, labor protection and provision of labor market services, it is argued that labor market institutions are generally considered to be weak in the context whereby this study is taking place - Ethiopia. This weakness is characterized by limitations of regulatory framework and lack of social dialogues among institutions themselves (trade unions and employers' organizations). The available regulatory instruments and institutions more often serve the formal and wage employment sector. No attempt has so far been made to embrace the informal and self-employment sector. The situation is believed to result in lack of protection and job security, lack of social dialogue, and poor labor market services against the background of labor market imperfections (National Employment Policy and Strategy of Ethiopia, 2009).

In Ethiopia, available evidence on labor market outcomes points to persistently high rates of poverty in urban areas, relatively low labor market participation and consistent underemployment. The available evidence suggests that unemployment is concentrated among prime age workers (15- 30 years). Employment in the Ethiopian economy appears to be segmented among the public, private, and informal sectors. Available evidence shows that the Ethiopian economy has been marked by low rates of net job creation in the private sector. Firm creation rates are very low, and even weaker for private firms; expansion rates by incumbent firms are also weak (Ethiopia Employment Unemployment Survey, 2003).

CHAPTER III

REVIEW OF RELATED LITERATURE

3.1 Graduate Labour Market: Conceptions and Definitions

Economists began to describe a market as a place where buyers and sellers come together to exchange particular goods and services (Beker & Toutkoushian, 2014). To the same authors, labor markets include both wage employment and self-employment. In the case of wage employment, the worker sells his or her labor services to an employer. In the case of self-employment, an individual's labor services are sold to oneself. In relation, the Business Directory.Com (n.d) put the definition that labour market is:

The nominal market in which workers find paying work, employers find willing workers, and wage rates are determined. Labor markets may be local or national (even international) in their scope and are made up of smaller, interacting labor markets for different qualifications, skills, and geographical locations. They depend on exchange of information between employers and job seekers about wage rates, conditions of employment, level of competition, and job location (<http://www.businessdictionary.com>).

In addition, the market may be a specific physical or geographical region (Beker & Toutkoushian, 2014). In the context of labor economics and labor market policies, the core model of a labor market involves labor demand, labor supply, determination of wages and other conditions of employment (Fields, 2007). In relation, (Baglioni, 2014) rightly argued that the supply of labour includes all those who are either working or looking for work, that is all those who are participating in the labour force. To the same author, demand for labour is determined by the requirement for employers' products (sometimes called consumer demand), export demand, and government policies among other factors, all of which are strongly inter-related. For example, an increase in the demand for construction workers because of a major construction project will result in an increase in demand for workers in other sectors, such as those that could supply building materials, transportation, hospitality and retail. However, the labour market can experience both "shortages" and "surpluses". Typically, this occurs, according to (Baglioni,

2014), because of skill mismatches, immobility of the labour force and incomplete information about both workers and employers.

According to Beker & Toutkoushian (2014) a market exists whenever there is a good or a service for which there are both buyers (demanders) and sellers (suppliers). In the labour market, labour services are exchanged between employees and employers. In this context, labour market is defined as the informal mechanism where the demand and supply of labour interacts. A labour market could be a community, a city, a region, a country or a larger area (Baglioni, 2014). Jorgenson, Ho & Stiroh (2008) added that a labour market is the place where workers and employees interact with each other. A labour market in an economy functions with demand and supply of labor (<http://www.economictimes.indiatimes.com>). In this market, labour demand is the firm's demand for labour; and supply refers to the supply of workers as laborers.

Further, some writers used the terms “industry” and “market” interchangeably (Beker & Toutkoushian, 2014). A market consists of both buyers and sellers, whereas, an industry encompasses those sellers who are producing similar products using similar inputs, technology, and production processes. However, economists believed that an industry refers to the collection of all organizations that supply a specific goods or services. In the higher education perspective, the broadest meaning of the higher education industry would consist of all post secondary institutions around the globe. From this point of view, the term “industry” seems to focus only on the supply side. Nonetheless, as to it was declared by Leslie & Johnson (1974: 5), “...there are two distinct sides to any market: the producer’s side and the consumer’s side of the market. Thus, in discussing a market for a particular commodity both sides of the market must be discussed”.

Taking the universities in to consideration, it is the wider labour markets which can serve as signaling and mediating devices between universities and employers. These labour markets, operating on the basis of supply and demand, could not tie universities as suppliers to particular products(graduates) or modes of production (pedagogy and curriculum), rather, allow them some considerable degree of discretion based on professional judgment (Rebecca & Maria, 2010). This balance of supplier–customer power could be noticeable whenever there is a widespread expectation that employers either receive the graduates as they are produced in the universities accepting their completeness for the world of work, or would train graduates as part of turning

them into employees. However, as students are not individually responsible for choosing to make themselves employable subjects (Rose, 1989), it is the labour market that should serve as mediating and signaling agent. Moreover, university students went to a higher education hoping to have the knowledge and skills they could get from the institutions and the degree they could secure would permit them for the labour market and with positive expectation for being trained to a job (Rebecca & Maria, 2010). Graduates and employers are, respectively, the supply and demand sides of a labour market. Under state-adjusted market conditions employers should no longer have to seek and then train their workers but will rather be able to order ‘oven-ready’ graduates. This may give employers a significant cost saving advantages (Rebecca & Maria, 2010).

Much of the research around the graduate labour market has been confined to a large-scale survey data, focusing principally on the labour market ‘outcomes’ of graduates and inferring from these ideas about the employability and likely trajectories of different groups of graduates (Brennan et al., 1993; Elias & Purcell, 2004). For instance, the work of Brown & Hesketh (2004) has focused in part on the way graduates attempt to manage their employability during their initial stages in the labour market. This typically involved anticipating the need to ‘play the game’ in order to progress within the graduate labour market (Tomlinson, 2008). However, measuring employability in this way was said to be so problematic, not least because the state of the labour market could not always impact on levels of graduate employment (Tomlinson, 2008).

Nevertheless, while discussing about the labour market, it is useful to think of policies that have a bearing on the operation of a single labor market and those that involve the connection between labor markets. Accordingly, in any given labor market, there are those policies that have a bearing on the buying and selling of labor and that are usually called labor market policies (wage-setting mechanisms, industrial relations systems, and the like) as well as those policies that impinge up on the labor market (macro-economic policies and investment policies which affect the position of the labor demand curve, education and training policies which affect the position of the labor supply curve for different skill levels, fiscal policies which affect the size of the tax wedge, etc.). And then there are those policies that affect the movement of workers and firms between labor markets (hiring and firing regulations, labor market information systems, and so on). For instance, the pressure exerted by various labour market representatives has led

universities to adopt policies and strategies aligned with social demands. Some examples of these trends are policies to improve employability (Heijde, Heijden, 2006; in Corominas, Saurina, & Villar, 2010: 23), government and university grants for innovative teaching, plans for teacher training, incentives for the adaptation of curricula to the new European Higher Education Area (pilot plans by the Catalan government since the 2004-2005 academic year), demands for competence-based academic programmes as the way for national quality assurance agencies to accredit new university degrees, the introduction of compulsory professional practice in curricula (Espinar et al., 2007), the introduction of specific departmental policies and the involvement of employers in subject design and teaching (Mason, Williams, Cranmer, 2009; in Corominas, et al., 2010: 23).

As a result, single labour markets and the connections between labour markets are believed to be influenced by various labour policies. For instance, labour markets in Western economies were changing and organizations were ‘slimming down and speeding up’ in response to globalization, technology and competitive pressures (Bridgstock, 2009). The same was true in the case of Australia that given the pathways into the world of work were often individually rather than institutionally constructed and that the graduate labour market was becoming more fluid, with graduate occupational destinations becoming increasingly diverse (Andrews & Wu, 1998).

Empirical evidence regarding the effect of labour market regulation on school-leavers' labour market outcomes is still inconclusive. The level of employment protection legislation appears to affect youth unemployment chances, but the effect is not stable once the structure of training systems is taken into account. In relation to this, Bertola et al. (2001) argue that the rigidities created by various labour market institutions have a negative effect on youth employment, but only in some countries. Using macro data, Breen (2005), on the other hand, finds a clear effect of labour protection on the extent to which youth unemployment exceeds adult unemployment, but only in the interaction with the structure and organisation of the educational system. Systems of vocational training which teach specific skills and incorporate a strong work-based element provide a preventative to youth unemployment by offsetting the negative effects of extensive employment protection. Low employment protection seems to speed up market entry but this comes at the cost of greater career instability (Scherer, 2005: 438).

Moreover, it has been argued that the degree of labour market regulation influences the employers' decision making when hiring workers and this is particularly relevant for the employment and entry chances of first-job seekers. Research suggests that the response of employers in labour markets with higher firing costs is that they set higher productivity reservations for potential employees. Such hiring reservations may pose particular problems with regard to young people as both the job entrants' need for additional training as well as the higher level of uncertainty inherent in recruiting inexperienced school leavers work to their disadvantage (Muller & Gangl, 2004). Furthermore, labour market regulation may have detrimental effects on youth labour market chances as employment protection tends to reduce the dynamics of the labor market and hence affects the job-finding rates among job seekers in general (Gangl, 2003).

Alongside employment protection legislation, provision of unemployment benefits is another way of protecting individuals against labor market risks. European countries use different combinations of the two institutions. As Boeri et al. (2004) have found, those countries, which adopt stronger dismissal restrictions, tend to enjoy smaller unemployment insurance programs, and vice versa. Therefore, low employment protection in some European countries (for example in Denmark) is "compensated" with larger unemployment insurance. The shift in the balance between the two institutions in favour of unemployment benefits should increase labour market mobility, make youth labour market more flexible and therefore increase their unemployment outflow rates. Esping-Andersen (2000) claims, however, that unemployment protection has no impact on the youth's unemployment and labour market entry because most of labour market entrants do not qualify for unemployment benefits.

Settling such fluidity of labour markets could be possible by states through discursive re-framing of employability, defining broadly the content of employability, developing the employability agenda, identifying employability skills and attempting to measure university performance by measuring employability. To illustrate, the justification for government intervention in the graduate labour market has been observed in the UK following that employers were not getting the types of workers they seek. Moreover, the blame for the then market dysfunction was placed firmly at the door of universities and responsibility for its correction was left as a task that the state has appropriated to itself (Rebecca & Maria, 2010).

Given recent labour market movement away from job security and towards continual task and role change, one might expect that career management skills – the abilities required to proactively navigate the working world and successfully manage the career building process, based on attributes such as lifelong learning and adaptability– would be explicitly included in the employability and generic skills policy debates, would play a prominent role in university programs (Bridgstock, 2009). However, there is evidence to suggest that the potential for student career management skill development remains mostly unrealized in universities (Watts, 2005) and that many university graduates are under-prepared for the bewildering array of shifting employment and training options between which they must construct a career.

Labour market success is a subjective term, which tends to be ill defined in academic literature. In a macro sense, labour market success for an economy may be judged in a number of ways terms including, the total number of jobs created, the level of unemployment in the economy, the extent of underemployment or the level of real wages, normally in comparison to some international benchmarks. At the individual level the issue is much more complex and depends upon the subjective preferences of the individual worker (Adeyemo, Ogunleye, Oke, & Adenle, 2010).

To many individuals, labour market success goes beyond just obtaining employment to include issues relating to the desirability of the job in terms of conditions, status and continuity. Studies on graduate employment and work often give a limited description of graduates' professional success. Sometimes, only the employment status (employed/ not employed) at a certain time after graduation is considered as an indication of professional success. Such approaches often ignore that graduates themselves do have complex work orientations and career plans in which other factors such as autonomy at the work place and the content of work play a much more prominent role than income (Adeyemo, et al., 2010).

3.2 Roles Played by Higher Education Institutions to the Graduate Labor Market

The transformation of higher education systems and institutions in recent years has been characterized by an expansion in the number of students and university graduates, the introduction of quality assurance policies and procedures and the adaptation of university

curricula to the requirements of the new economy and present-day labour markets, mainly with regard to the introduction of competences (skills) as a fundamental learning objective in study programmes (Corominas, et al., 2010).

Historically, universities across Europe have graduated students with knowledge and skills that have proved useful and appropriate to their economies, governments and wider society, and are constitutive of them. The three faculties in medieval universities were theology, law and medicine (Torstendahl, 1993); traditionally, universities educated elites, especially professional ones. In contrast to such elite systems, higher education (HE) systems across the world have become increasingly massified in recent years (Bridgstock, 2009). Massification connotes more than a simple, albeit substantial, expansion of student numbers (Moreau & Leathwood, 2006). It also embodies new notions of what university education is and indeed should be, and new forms of relationships between universities and the states that largely fund and regulate them. A key legitimizing discourse that sustains massification is one of social justice through equal access to HE opportunities. A more critical analysis suggests that producing workers so that we can compete in the global knowledge economy is also a legitimizing discourse. In this regard a major role of universities is the production of an appropriately trained workforce that fits employers' needs (Bridgstock, 2009).

There are profound reasons for these changes that have to do with worldwide socioeconomic factors linked to technological development, new models of production and higher demand for skilled labour from organisations, amongst others. As causal factors, the literature on higher education emphasizes the democratisation of education that has given more students access to the higher education system; greater pressure on universities for accountability of public spending invested in education; and the pressure by production organisations and governments to enhance the professional skills of the workforce as a means for social development in a modern and competitive knowledge-based economy (Corominas, et al., 2010).

The contribution of universities to economic development in the knowledge era, has related to three domains (Korka, 2010): (i) producing and accumulating human capital; (ii) generating, disseminating and applying knowledge; and (iii) innovating and inventing new information and technology. Besides, as it was explained by (Mitra, Abubakar, & Sagagi, 2011), expansion of the

stock of knowledge; training of future researchers; creation of new instrumentation and methodologies; formation of networks and stimulation of social interaction; augmentation in the capacity for scientific and technological problem solving; and creation of new firms are listed among the benefits of universities and their research. Furthermore, universities across the globe are increasingly engaged in producing highly skilled graduates who are able to respond to the ever changing and complex needs of the contemporary workplace (Sleezer et al., 2004).

Universities all over the world have been recognized as key force for modernization and development in any nation. The 21st century has been recognized as a knowledge era with higher education holding a significant key to it as universities play central role (Teferra & Altbach, 2003). The University in the 21st century is expected to play a critical role in the development of human resources within the context of the overall social development and transformation of a nation; by contributing to its knowledge production with high level manpower through teaching, research and community development (Abiodun – Oyebanji, 2013). As a result, any contemporary discussion of higher education is likely to include reference to notions of the knowledge economy, globalization, human capital and related matters, particularly in the context of the financial and economic crisis at the end of the first decade of this century (UNESCO, 2012). Regarding the roles of universities in the economic development in general and labour market issues in particular, the then UN Secretary General Kofi Annan, said in his speech that:

The university must become a primary tool for Africa's development in the new century. Universities can help develop African expertise; they can enhance the analysis of African problems; strengthen domestic institutions; serve as a model environment for the practice of good governance, conflict resolution and respect for human rights, and enable African academics to play an active part in the global community of scholar (Kofi Annan, 2003).

Furthermore, higher education can also produce both public and private benefits. Specifically, the private benefits for individuals are well established, and include better employment prospects, higher salaries, and a greater ability to save. In recent years, the benefits of more direct university-industry relationships, including contract research, cooperative research

technology licensing, faculty consulting, and access to specialized equipment and incubation services, have been noted (Korka, 2010).

Moreover, Universities have an important role to play in the present and future economic and societal development, in a context in which the concept of higher education itself is going through a deep reconsideration of the modalities of responding to the expectations of the extra-university world, as well as of the means of dealing effectively with the challenges of the future and with the potential opportunities (NCIHE, 1997). Both on the short and long term humankind will depend to a great extent on the high qualified professional competencies and on the knowledge and aptitudes required through research and innovation. To this reflection, a number of reports issued by employers' associations and HE organizations urged universities to produce employable labor force who can fit the current and competitive labor market (Korka, 2010).

It is argued that higher education is essential to developing countries if they are to prosper in a world economy where knowledge has become a vital area of advantage. In relation, Bloom, Canning, & Chan (2005) have maintained that the quality of knowledge generated within higher education institutions and its availability to the wider economy is becoming increasingly critical to national competitiveness. For instance, the role of universities in national development was affirmed by the Nigerian policy on Education and explained its optimum contribution through intensification and diversification of programmes for the enhancement and development of high level technical manpower within the context of national needs. Equally, Babalola (2015) was of the opinion that universities exist to prepare high level manpower for the survival of society and individuals and to expand frontiers of knowledge thereby show-casing research results for the sustainability of society. University education was therefore highly advocated for a nation to succeed economically, culturally and politically. Adelabu & Adepoju (2007), further laid credence to the potentials of university education that, higher education among which is the university, enhances individual earnings, contributes to economic development, and reduces relative and absolute poverty among the citizenry of a nation. This is to say therefore, among numerous roles played by universities is to produce and re-produce knowledge for national development and create continuous capacity to generate knowledge and production of high level manpower which is needed to build a functional nation (Abiodun-oyebanji, 2004).

Consequently, universities, as the pre-eminent knowledge organizations, have become the focus of much state interest, activity and the exercise of power and can be characterized as performing three functions. First, they can produce the knowledge that underpins economic growth. Second, universities can effectively produce the worker/consumer citizens that referred to as ‘docile bodies’ (Foucault, 1977) on which such growth depends. And third, they represent important areas of profitable business opportunity in a globalised HE environment. In particular, universities must now pursue direct, immediate and demonstrable economic utility. As such, the Third Mission creates demands for universities to respond directly to the needs of employers when designing and delivering their educational programmes. In particular, the Third Mission creates “... an overall imperative for a shift from providing social and cultural capital to professional elites to preparing the workers of the knowledge society by equipping them with fairly practical and technical skills and knowledge” (Nedeva, 2007: 95 cited in Boden & Nedeva, 2010).

Above all, the knowledge-driven economy is said to require individuals with the types of knowledge, skill and creative potential who can meet the challenges of a global economy characterized by rapid change. Increasingly, individuals can no longer expect a ‘job for life’, whereby their careers are anchored around single jobs and organizations (Arthur & Rousseau, 1996; Gee et al., 1996). Higher education credentials have been presented as crucial for economic development, particularly in meeting the changing needs of the knowledge driven economy (Castells, 1994). They are also seen as a way of providing individuals with access to opportunities in the labour market (Department for Education and Skills [DfES], 2003). The social benefits manifest themselves in the form of a highly skilled, flexible workforce as reflected in levels of national economic output (Organisation for Economic Development and Cooperation, 2003). Higher education is therefore seen to be a shared investment between the individual graduates and the state, with both clearly benefiting from continued expansion (DfES, 2004).

Villar & Albertin (2010) summarise the work of many authors when they suggest that the role of higher education institutions should be to encourage students to develop their proactive personality traits (Alex, 2013). Certainly, there is an expectation from government and employers that higher education institutions have a responsibility to prepare graduates for the

world of work (De LaHarpe, Radloff, & Wyber 2000; Heaton, McCracken, & Harrison 2008). In response, higher education institutions continue to build employability into their programmes (Bowers-Brown & Harvey 2004; Fallows & Steven 2000).

However, there are writers who promote the idea of tertiary education has little role to promote economic growth of developing countries like Africa (Pedro, Qaiser & George, 1999). These writers believed that primary and secondary schooling are more important than tertiary education for economic development of the third world countries. This belief stemmed from two initial points (World Bank, 2004): first, repeated studies appeared to show that the returns to investments in primary and secondary education were higher than those to higher education, and second, that equity considerations favored a strong emphasis on widespread access to basic education. In this regard, Psacharopoulo's and Patrino's analysis shows higher education in a less favorable light than it shows primary and secondary schooling (Pedro, et al., 1999).

Doubts on the applicability of rates of return from higher education were echoed from authors like Bloom, et al. (2005:12). Accordingly, they have stated that:

Traditional rate of return analysis focuses solely on the financial rewards accrued by individuals and the tax revenues they generate. It neglects the broader benefits of advanced education manifested through entrepreneurship, job creation, good economic and political governance, and the effect of a highly educated cadre of workers on a nation's health and social fabric. It also ignores the positive impacts of research – a core tertiary education activity – on economies.

While it can be argued that the role of HEIs to graduate labour market has become more complex, governments, employers and other stakeholders have come to expect higher education to contribute to the development of a variety of complex 'skills', which—they argue—enhances the stock of human capital and makes for national economic well-being. More specifically, the focus on work preparation and supplying a skilled workforce for the development of a country is considered the main mission of higher education (Thi Tuyet, 2014). Accordingly, much contemporary research has stated that the major purpose of higher education is to prepare students for work (Tran, 2006; Pham, 2008; George, 2010; in Thi Tuyet, 2014). Initiatives

focusing upon the role that higher education institutions should play in relation to graduate employment may be seen from two aspects (Holmes, 2013). First, to ascertain what is happening in terms of graduates going into employment: large-scale data collection, amenable to analysis in terms of gender, ethnicity, subject discipline studied, degree classification, salaries earned, institution awarding degree, and so on (Holmes, 2013). The second aspect is to be indexed by the notion of employability. Given that higher education institutions do not themselves control the labour market (and neither does any other agency, in a market-based economy and free society), they cannot guarantee employment outcomes. What they can do, it is argued, is take steps to promote the likelihood that their graduates will gain what may be deemed as appropriate employment. Moreover, governments can legitimately expect higher education institutions to do this (Holmes, 2013).

Morley (2001) suggests that HEIs both mediate and manage government policy, and that the boundaries between the academy, government and businesses have loosened and been reformed. This raises the question of what the purpose of HE is, whether it is to provide to the workforce of the future or educational stimulus, or both. Jackson (1999) suggests that the recent government agenda for the massification of HE, widening participation, the key skills/employability agenda, lifelong learning etc., are leading to the unification of HE and by implication, the curtailing of academic freedoms. Increasingly, individuals can no longer expect a 'job for life', whereby their careers are anchored around single jobs and organisations (Arthur & Rousseau, 1996; Gee et al., 1996). Employees instead have to take a more flexible and proactive approach to their working lives, involving the management of their own employability. Governments at all levels are to recognize the importance of tertiary education in preparing students for a constantly changing world of work. For instance, in February 2006, the Council of Australian Governments (2006) instigated a national reform agenda, aimed at raising living standards by lifting the nation's productivity and workforce participation. This suggests that universities must begin to comprehensively and actively engage with the employability agenda, including career building and self-management skills, in order to remain competitive in a diverse training market where providers vie for students and funding (Bridgstock, 2009).

In the 21st century knowledge economy, education plays an increasingly important role in preparing new labor market entrants for the workforce and providing skill upgrading throughout

the working career (Károly, 2010). In the last two decades, there have been an increasing number of initiatives focusing upon the role that higher education institutions should play in relation to graduate employment (Holmes, 2013). Accordingly, Peggy et al in (Alfred, et al., 2008) stated “Higher education institutions have an important contribution to make to the economic vitality of their communities, regions, and states. In many regions of the country they have become the cornerstones of state and local economic development.” Peggy and others explained how higher educational institutions address the human capital needs of their communities in America as follows:

Colleges and universities have traditionally had three major goals. They teach, conduct research, and provide service to the community. Institutions are able to draw upon these historical roles as they become more involved with economic development. Higher education institutions can contribute to economic development in a variety of ways (SRI International, 1986; American Association of State Colleges and Universities, 1988; MacGillivray & Richmond, 1996). They are able to (1) apply their teaching capabilities to human capital development, (2) use their research expertise for technological development, (3) provide service to the larger community via policy development, and (4) serve entrepreneurs by providing business development expertise (in Peggy, et al., 1996:2).

Higher education is considered vital for developing a productive and dynamic labour force to meet the demands of the global economy (Ashok, Daniel & Dwight, 2013). Consequently, the relationship between higher education and the labour market which has been studied extensively by economists (Ashok, et al., 2013), indicated the availability of two main competing interpretations about the relationship between higher education credentials and labour market outcomes (Tomlinson, 2007). Studies show the economic demand for the increasing supply of graduates and the capacity of the labour market to accommodate the upsurge in graduate credentials and suggest that there is further evidence about an increasing amount of graduates which were overqualified for the types of employment they attain (Battu, Belfield & Sloane 2000; Brynin 2002). In relation to this, Tomlinson (2007) strongly argued that growing numbers of graduates are increasingly colonizing areas of the labor market that were once occupied by non-graduates, leading to a potential mismatch between their level of qualification and its market

utility. Thus, the importance of a university degree for the skill requirements of many graduate-level jobs is said to be unquestionable, especially in the development of a knowledge-based economy.

In recent times, however, one major interest that have attracted public debate in many advanced countries as well as International organisations has centred on the relationship between Higher education and the world of work. Various reasons for this development are worth mentioning. Enrolment in higher education had increased in various countries of the world since the 1980s and growing unemployment in the 1990s fuelled fears that the ‘mismatch’ between education and employment might be more pronounced. Furthermore, greater attention was paid to an increasingly complex and often protracted process of transition from higher education to employment (Adeyemo, et al., 2010).

Moreover, according to Adeyemo, et al. (2010), rapid changes in technology also suggested that graduates could no longer expect to remain in a single profession or with a few employers; they have to be more flexible and better prepared for lifelong learning. According to Teichler (2007), the relationship between Higher Education and the world of work now tend to emphasize popular issues such as the contribution of educational expansion to economic growth, the dangers of ‘over-education’, the diversity of higher education and employment opportunities, the rise of precarious employment, the growing role of ‘key qualifications’ and trends towards a globalization of the graduate labour markets.

There are two opposing views debating on whether or not higher education institutions need to ensure the employability of their graduates through curricular, co-curricular and extracurricular activities. Cranmer (2006), the first view bases itself on the Human Capital Theory that displayed the role of investment in education in order to boost economic and social achievements. Accordingly, it promotes the education for employment agenda and the associated notion that all academic courses should include employability enhancing content (Olaniyan & Okemakinde, 2008) whereas the second view (which is labeled as the liberal view) stands against all this. In fact, for centuries, employability had never been raised as an issue in the agenda of higher education across the globe. This, however, no longer the case in the era of globalization, competitive market economy and massification of higher education; where graduate unemployment and underemployment is pervasive (Cranmer, 2006).

3.3 Graduate Employability, Employment, and Unemployment

Employability, employment, and unemployment are different concepts. Being employed means having a job, while being employable means having the qualities needed to maintain employment and progress in the workplace. To Harvey (2003), Lees (2002), Yorke & Knight (2006), graduate employment is a by-product of job searching process. The explanations given by LTSN in Lee (2002), clarifies the variations between employment and employability, i.e.,

...being employed means having a job, being employable means having the qualities needed to maintain employment and progress in the workplace. Employability from the perspective of HEIs is therefore about producing graduates who are capable and able, and this impact upon all areas of university life, in terms of the delivery of academic programmes and extra curricula activities. Fundamentally then, employability is about learning – learning how to learn – and employability is not a product, but a process (LTSN - cited in Lee, 2002).

On the other hand, unemployment refers to inability to be employed with one's knowledge, skills and attitudes in the job market (Samuel, 2012). Abiodun (2010) regards unemployment as the proportion of the labour force, expressed in percentage, which is not employed at any given point in time. Graduate unemployment, therefore, refers to the unemployment among people who have graduated from tertiary institutions and who are qualified to work but do not work at any given point in time. In the words of Babalola & Jaiyeoba (2008), unemployed graduates keep depending on government and the non-vibrant private sector for job offers rather than providing jobs for others. World Bank (2007) & Okojie (2008) however, attributed the cause of this to several factors; including inadequate staffing, poor infrastructural and training facilities, poor conditions of service, abstract curriculum, poor teaching methodologies, acute shortage of quality academic staff due to brain drain and disruption of academic calendar. Others are inadequate and mismanagement of available fund, and rapidly rising enrolments as an index of un employability A student who is aware of a high unemployment rate in an occupation or geographical location can draw on their self-management and career building skills to construct alternative career scenarios involving different locations, training options, occupational choices

or work modes through the process of proactive career management (Bridgstock, 2009). Whilst optimists argue that, in line with neoliberal ideology, individuals will utilize breaks in employment opportunity to retrain within HE, early indications are that, with little prospect of the reward of enhanced job prospects, they will be reluctant to self-invest in their education and may not have the cash or credit to do so. Divorced from immediate employment opportunity, the intrinsic value of HE will be brought in to sharp focus (Rebecca & Maria, 2010).

Yorke & Knight (2003) in Weligamage (2009) further defined employability as a —a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy. Earlier, Harvey (2001) explained in his report titled *Employability and Diversity*;

Employability has many definitions but they break down into two broad groups. The first relate to the ability of the student to get (and retain and develop in) a job after graduation. The other set are concerned with enhancing the students' attributes (skills, knowledge, attitudes and abilities) and ultimately with empowering the student as a critical life-long learner (Harvey, 2001).

In examining professional success, the question of being employed or not is not really relevant if the employment conditions are not considered (Schomburg, 2007). Basically, Schomburg, (2007) continued to argue that most graduates work during their course of study in order to contribute to the course of study or to obtain work experience and the time of graduation is not the start of employment. However, of the dimensions of graduate professional success, the following are listed to be important: (i) The smoothness of the transition process, (ii) Status and income, (iii) Success with regard to the nature of work, e.g. use of knowledge and the extent to which work is characterised by autonomy and challenging tasks, and (iv) Overall appreciation of employment and work (Adeyemo, et al., 2010). The broader view of the concept employability was given by Malaysia's Ministry of Higher Education (2012:6), in Hailemelekot, 2013:65) i.e.

Employability is about the potential of obtaining and building a fulfilling career through continuous development of skills that can be applied from one employer

to another; possessing the set of attributes and skills that match those required by industry; taking the responsibility for self-development through learning and training, either through the employer or self initiatives; adopting the concept of life-long learning; being employed according to their level of qualification, functional competencies and being awarded accordingly in terms of wages & benefits; whereas employment is a contract between two parties - one being the employer and the other being the employee.

Recent shifts in education and labour market policy have resulted in universities being placed under increasing pressure to produce employable graduates. However, contention exists regarding exactly what constitutes employability and which graduate attributes are required to foster employability in tertiary students (Bridgstock, 2009). Narrow definitions of employability emphasize skills and dispositions that might make an individual attractive to potential employers, often (although not necessarily) focusing on short-term employment outcomes (Bridgstock, 2009). These kinds of definitions have, understandably, often been adopted by employer organizations.

Nevertheless, in many contemporary neoliberal states, the long-standing contributions of universities to the development of citizens' knowledge and skills have been re-badged as 'employability' (Brown, Hesketh, & Williams, 2003). Consequently, though discussions about employability traced back to the early twentieth century, the early twenty-first century concepts of employability focused on personal skills and knowledge, and the propensity to get employment (Lees, 2002). Such changes reflect transformations in the nature and characteristics of employment (Harvey, 2000), structural changes in labour markets (Brown 2003) and generally the changing context of graduate employment (Moreau & Leathwood, 2006). It is clear from the international debates that graduate employability is more than a list of skills, and is culturally and contextually dependent because individual knowledge is both tacit and explicit (Thi Tuyet, 2014).

Learning and Teaching Support Network (2003) define employability as 'a set of achievements, understanding and personal attributes that make individuals more likely to search and gain employment and be successful in their chosen occupations'. Harvey (2001) & Lees (2002)

further explained that employability is more than about developing attributes, techniques or experience just to enable a student to get a job, or to progress within a current career. It is about learning and the emphasis is less on 'employ' and more on 'ability'. It is the ability of the graduate to get a satisfying job. In essence, the emphasis is on developing critical, reflective abilities, with a view to empowering and enhancing the learner.

Knight (2001) & Yorke (2001) considered the concept of employability to be a 'synergic combination of personal qualities, skills of various kinds and subject understanding'. Therefore, there are two main concepts of employability (Yorke, 2001, Knight & Yorke, 2001), these are: (1) The educational conception relating to the ability of graduates to tackle 'graduate' jobs. This is related to the notion of 'capability' which means that employability of graduates relates to their being equipped for a job and capable of being employed, rather than job acquisition (Harvey, 2001); (2) The ability of the graduate to get a job – any job. Good student learning and the curriculum, teaching and assessment that goes with it, describes 'education for employability' well (Knight & Yorke, 2000). This implies that curricula designed to enhance students' employability are also desirable on purely educational grounds. It is possible to see both the traditional academic education and key skills as being subsets of 'employability'.

Graduate employability depends on the relation between higher education and the employment market, and the primary responsibility for employability rests with individual students and graduates (Van Buren 2003; McQuaid & Lindsay 2005; Tan & French-Arnold 2012; Leong & Kavanagh 2013). Graduates' employability, as suggested by Tomlinson (2007, 302), is highly 'subjective'. University students are expected to be proactive in preparing themselves for a changing world by actively improving their knowledge and skills to meet the demand of the modern workplace (Bridgstock, 2009).

Educating students is now, to a significant extent, a mass, global corporatized business exhibiting almost all of the characteristics associated with making cars or providing financial services (Rebecca & Maria, 2010). These arguments impact upon employability in two ways. First, if students are now self-investing customers for their own education then universities competing in a global market place will tend to seek to make the appropriate 'job-related' offer in terms of degree programmes. Second, government will be keen, in pursuing its objective of a voluminous

but docile cohort of worker/consumers, to ensure that universities produce the ‘right’ people with the ‘right’ skills and aptitudes (Rebecca & Maria, 2010).

The concepts of graduate employability are regarded differently among different bodies. For instance, from the employers’ point of view, employability is the propensity of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organisation (Harvey, 1997). Employability often seems to refer to ‘work readiness’; that is, possession of the skills, knowledge, attitudes and commercial understanding that will enable new graduates to make productive contributions to organizational objectives soon after commencing employment (Rebecca & Maria, 2010). On the other hand, from the HEIs perspective, employability is about producing graduates who are capable and able, and this impact upon all areas of university life, in terms of the delivery of academic programmes and extra curricula activities.

Therefore, employment and employability are not the same concept. Being employed means having a job, being employable means having the qualities needed to search and maintain employment and progress in the workplace. Harvey (2003) concluded that employability is an ability to search and gain and maintain a job while employment is an outcome of being on the job. University of Exeter defined employability as the establishment of clear mechanisms by which students can develop their abilities to use and deploy a wide range of skills and opportunities to enhance their own academic learning and enable them to become more employable (Lee, 2000).

Graduate employability is centrally located in the changing relationship between higher education and the labour market. The employability of university graduates has dominated much educational and economic policy over the past decade (NCIHE, 1997; DfEE, 2000). Graduate employability is not only a product of the learning at university, but also the outcome of:

the cumulative learning over a series of course modules, together with parallel personal development through a range of formative experiences and wider contextual learning through, for example, work experience and extra-

curricular activities; It is a product of the whole university experience combined with interactions with the wider 'world of work' (Rae, 2007: 608).

In this context, graduate employability depends on the relation between higher education and the employment market, and the primary responsibility for employability rests with individual students and graduates (Van Buren 2003; McQuaid & Lindsay 2005; Tan & French-Arnold 2012; Leong & Kavanagh 2013). Students' employability, as suggested by Tomlinson (2007, 302), is highly 'subjective'. University students are expected to be proactive in preparing themselves for a changing world by actively improving their knowledge and skills to meet the demand of the modern workplace (Bridgstock, 2009).

A more realistic concept of employability would involve the recognition that graduates cannot possibly have all the knowledge, skills and abilities that are required of them. Employability would therefore place a high value on my ability to share knowledge and understanding. This does not undermine the need for leadership but it does imply a need for leadership which is enabling with respect to others and not merely strategic (Hinchliffe, 2006).

Employability has become, and is likely to continue to be, a major issue for a variety of stakeholders in higher education (Holmes, 2013). Holmes examines three competing perspectives on employability, termed here as the 'possessive', 'positioning' and processual' approaches. The first of these, based on notions of skills and attributes, dominates the policy and practice discourse but, it is argued, is deeply flawed in theoretical terms. The second perspective, based on social positioning theory, is shown to be more in accord with the evidence of employment outcomes, but tends, arguably, to lead to a 'counsel of despair'. The procession perspective is then presented, particularly focusing on the concept of graduate identity. Finally, Holmes (2013) strongly argues that this is theoretically robust, is supported by empirical evidence, and provides a sound basis for curriculum and other forms of intervention to enhance graduate employability.

Bridgstock (2009) then challenge the view that graduate employability can be validly measured by graduate employment rates, arguing that employers want graduates who present convincing evidence that they have both personal qualities and complex achievements that promise well for workplace performance. Bridgstock strongly argues that higher education for employability and

good learning needs to have programmes and whole institutions as its concern, and be based on notions such as complexity, affordances, learning architectures, soft systems thinking, fuzziness, learning cultures and connectionist networks. Ideas of graduate employability are, then, fuelled by a concept of selfhood which places increasing demands on graduates to construct a narrative of employability before they have even got a proper job! This concept of selfhood is further reinforced by the pedagogy of lifelong learning (Hinchliffe, 2006).

In many countries, graduates' employability is high on the government agenda, with expectations that higher education should contribute to national economic growth (Harvey, 2000). In the UK, where government policy in relation to graduates' employability is 'part of a wider strategy to extend the skill base' (Harvey, 2000:4), Gordon Brown noted that 'given the substantial public investment in university students, it is particularly important that they are employable upon graduation' (cited in HEFCE-PISG, 1999).

The Confederation of British Industry (1999) defined employability as being 'the possession by the individual of the qualities and competencies required to meet the changing needs of employers and customers' (p.1). The Australian Chamber of Commerce and Industry (ACCI) and the Business Council of Australia (BCA) represent employability skills as 'skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions' (ACCI & BCA, 2002; in Bridgstock, 2009).

The notion of employability challenges traditional concepts of Higher Education and raises the question of what the point of HE is; subject knowledge and understanding, or learning how to learn. Some academics feel that this agenda is too driven by government policy and employers, rather than the academy, and this can lead to unrest amongst academics who are expected to teach employability skills and attributes in the classroom (Lees, 2002). Hillage & Pollard (1998) of the Institute for Employment Studies carried out a report on developing a framework for policy analysis on employability for the DfEE (now DfES). Their main findings were: Employability is about having the capability to gain initial employment, maintain employment and obtain new employment if required. For the individual, employability depends upon: assets in terms of knowledge, skills and attitudes; the way these assets are used and deployed; presentation of assets to potential employers; the context within which the individual works, e.g.

labour market, personal circumstances. Being in possession of employer-relevant knowledge, skills and attitudes is not enough for an individual to move within the labour market, and to realize their potential (Lees, 2002). People need to be capable of exploiting their assets, of marketing them and selling them (Hillage & Pollard, 1998)

Therefore, there are two main concepts of employability (Yorke, 2001, Knight & Yorke, 2001), these are: (1) The educational conception relating to the ability of graduates to tackle ‘graduate’ jobs. This is related to the notion of ‘capability’ whose development was sponsored by the RSA in the late 1980s - 'Higher Education for Capability'. This means that employability of graduates relates to LTSN Generic Centre 3 October 2002 their being equipped for a job and capable of being employed, rather than job acquisition (Harvey, 2001). (2) The ability of the graduate to get a job – any job. The second concept is used in the construction of the Employability Performance Indicators (EPIs), but it is the first concept that most practitioners in HE are primarily concerned with. Good student learning and the curriculum, teaching and assessment that goes with it, describes ‘education for employability’ well (Knight & Yorke, 2000). This implies that curricula designed to enhance students’ employability are also desirable on purely educational grounds (Atkins, 1999). However, as it was stated by Wilton (2011:87) for the graduates, ‘it is possible to be employable, yet unemployed or underemployed’. This difference, between employment rates and employability, makes measurement of the concept challenging. That is why currently, according to Alex (2013), most stakeholder groups use statistics from graduate destinations surveys to measure employability, whereas what these provide is a limited snapshot of employment.

With regard to the issue of enhancing employability, it is argued that employability remains a difficult concept to measure and define (Harvey, 2001). The issue has been largely framed by the perspectives of policy makers and employers. Similarly, the issue has tended to be approached in a way which focuses either on supply-side features of the labour market or the structure of labour market demand (Macquaid & Lyndsay, 2005). However, the discourse into employability continually overlooks the *subjective* dimension of employability; in labour market they are entering, but also the types of dispositions, attitudes and identities they develop around their future work and employability.

Internationally, there has been substantial research focusing on enhancing the capability of university students to meet the demand of the new workplace environment. One obvious and popular approach has been to develop lists of skills deemed desirable by employers. Many universities have built and attempted to assess lists of skills or graduate attributes that university students purportedly need to develop to be employable after graduation (Meisinger, 2004; Hartshorn & Sear 2005; Raybould & Sheedy 2005; Hart 2008; Omar et al., 2012; in Thi Tuyet, 2014). Others are against the idea of asking employers, and then building what they call ‘just another employers’ wish-list’ of skills graduates should develop in order to meet employers’ needs (Yorke 2010:4; in Thi Tuyet, 2014). Smith & Comyn (2003) even consider employability development as an issue of the workforce, not of higher education since employability skills are developed throughout a person’s working life and hence employers need to view the process of skills development as a whole-of-workforce issue.

It is suggested that one potential problem with trying to develop employability is a lack of coherence about what is meant by the term itself and the subsequent measurement of it (Alex, 2013). Most authors agree that employability is complex and multidimensional and warn against being simplistic when trying to define it (Harvey 2005; Holmes 2006; Rae, 2007). Hugh-Jones, Sutherland, and Cross (2006) suggest that part of this complexity is because it can be viewed from three different perspectives: that of the employer, the student, and the higher education institution. Further complexity is noted by Rothwell & Arnold (2007), who highlighted that employability, can be viewed as having both internal and external dimensions. However, similarities exist across many of the definitions used, which resonate with that of Yorke, who defines employability as:

a set of achievements, skills, understandings and personal attributes, that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy (Yorke, 2004:410)

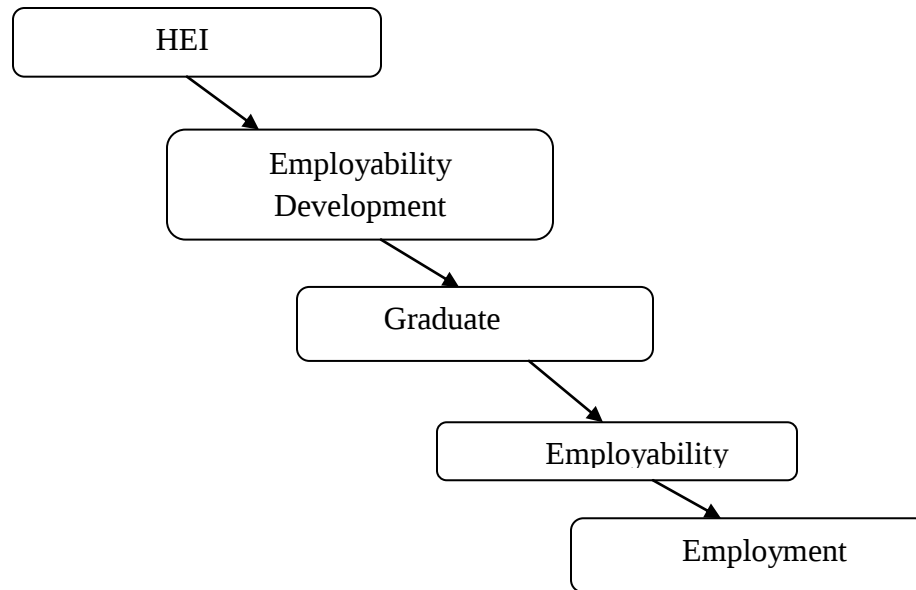
Four ways of enhancing student employability are identified by Knight & Yorke (2003): (i) Work Experience: Employers generally prefer to hire people who have workplace experience, especially those who can show what they have learned from it, so one way of increasing

students' competitiveness in the labour market is to design work attachments into degree programmes; (ii) Entrepreneurship Modules: this refers to the adding up of entrepreneurship to the curriculum to stimulate those complex learning achievements that underlie entrepreneurship; (iii) Careers Advice, if, as in the UK, employability is 'measured' in terms of the percentage of students in work 6 months after graduation, then an institution's contribution to student employability (and its performance in this respect) could be related to the quality of its careers service (Knight & Yorke, 2003). Good careers advice is of course a necessity, but it is no substitute for degree programmes designed with the employability policy in mind. (iv). Portfolios, Profiles and Records of Achievement (Knight & Yorke, 2003). Portfolios (sometimes called profiles, sometimes records of achievement) should get students reflecting on their achievements; collecting and presenting supportive evidence; identifying and then acting on priorities for development.

There are several alternative models created by researchers for understanding the parties and their role in implementing employability skills into higher educational institutes. All stakeholders: the government, the university system administrators, employers and graduates themselves must be involved into this process to find out skills requirement, the way of improving these skills and solutions to skill gap. Harvey (2002) presented the simplistic model of employability called —the magic bullet model. According to his model shown in Figure 3.1, *magic bullet* — is that students are somehow given employability as a result of their having been a student, which leads them to being employed.

Figure 3.1

A ‘Magic Bullet’ Model of Employability Development



Source: Harvey (2002), employability and diversity

The assumption implicit in this is that the higher education institution provides employability-development opportunities that enable the graduate to develop ‘employability’ and hence get employed (Figure, 3.1). There is a presupposed causal link between the *employability-development opportunities* and the *individual employability* of the graduate. This link is, invariably, used as a *post hoc* legitimization for using (convenient) graduate employment rates as a measure of an institution’s employability rating (Harvey, 2002).

Since the focus of employability is on graduates securing a job and progressing in their careers, employability should be more than skills and wish lists, and relates more to ability than being employed (Rust & Froud 2011). It is culture dependent context dependent and not always verbalizable as individual knowledge is both tacit and explicit (Beckett & Mulcahy 2006:251). In addition, Lowden et al. (2011) mention the relative nature of the employability concept and suggest that particular attitudes and values can be highly contextual. Similarly, the argument made by Smith and Comyn’s (2003) also recognizes an important issue that ‘the worth of

employability skills can only be fully appreciated in the workplace where the consequences of such skills can be seen'. Of course, Holland's (2006:297) argument becomes more persuasive when he points out that 'the tacit type of knowledge – "knowing how" – cannot be learnt in advance, no matter the extent or effectiveness of the experiential learning included in undergraduate degree programmes'. Employers cannot expect university graduates to have all the skills and knowledge of a good worker. It takes time and effort for graduates to 'translate' and 'transform' the knowledge and skills they learnt in universities to working context. Moreover, the complexity of generic capacities is actually developed through the real engagement, 'in practice', in workplaces (Thi Tuyet, 2014).

3.4 Competencies that Matter in the Graduate Labor Market

Many terms are used in the literature to describe competencies: 'generic skills', "attributes", "characteristics", "values", "core skills", "underpinning skills", "employability skills", "qualities" and "professional skills" (De La Harpe, Radloff, & Wyber, 2000). To Baker & Henson in Molla (2013:2), graduate attributes/competencies are "capabilities students develop at university that go beyond content" and increase "the chances of acquiring and maintaining different types of employment". From a humanistic philosophical vantage point, Barnett (2006) classifies graduate attributes/competencies not as mere knowledge and skills but as qualities and dispositions that enable the individual effectively function in the world of complexity and constant change. To this reflection, the most important attributes are "qualities of courage, resilience, fortitude and quietness" as well as dispositions "towards self-change, engagement with the world, inquisitiveness, and a will to communicate" (Barnett, 2006: 61).

Coopers and Lybrand (1998) define 'competencies' in terms of four key areas: (i) Traditional intellectual skills – e.g. critical evaluation, logical argument; (ii) Key skills – communication, IT, etc.; (iii) Personal attributes – motivation, self-reliance; and (iv) Knowledge of organizations and how they work. There are several synonyms - core, key, generic, personal transferable skills, common, work or employment related skills – this is another of the reasons why it is difficult to conceptualize what is meant by employability skills. Added to that, 'skills' are often referred to as capabilities, competencies or attributes, levels or learning outcomes, thus compounding the sense of confusion. Whilst, Dearing (1997) explicitly refrained from producing a list of skills,

because of the nature of individual programmes of study and their learning objectives, it is probably useful for students to see the sort of skills that the programme is aiming to develop so that they are more aware of their own personal development. This means that students can be aware of any gaps in their own personal development well in advance of getting to the stage of applying for jobs.

Over the previous decade, a variety of initiatives had been undertaken and these initiatives adopted the terminology of skills, competencies, capabilities and, more recently, attributes and the combination term, graduate ‘skills and attributes’ (Holmes, 2013). Within HE, the generic skills needed to enhance graduate employability (whether defined in terms of immediate work-readiness or longer-term career prospects) are now typically seen as including the skills emphasized by Dearing and also *Literacy*, *Problem-solving skills* and *Team-working skills*. In addition, the employability skills agenda is commonly defined to include ‘*Understanding of the world of work*’, which typically refers to knowledge about the ways in which organizations work, what their objectives are and how people in those organizations do their jobs (Coopers & Lybrand, 1998).

A number of reports issued by employers’ associations and HE organizations have urged universities to make more explicit efforts to develop the ‘key’, ‘core’, ‘transferable’ and/or ‘generic’ skills needed in many types of high-level employment (Association of Graduate Recruiters 1995; Council for Industry and Higher Education 1996; & Universities UK 2002). Specifically, in the context of a rapidly changing information- and knowledge-intensive economy, employability involves far more than possession of the generic skills listed by graduate employers as attractive. Rather, for optimal economic and social outcomes, graduates must be able to proactively navigate the world of work and self-manage the career building process. A model of desirable graduate attributes that acknowledges the importance of self-management and career building skills to lifelong career management and enhanced employability is presented. Some important considerations for the implementation of effective university career management programs are then outlined (Bridgstock, 2009).

Universities across the globe are increasingly required to produce highly skilled graduates who are able to respond to the ever changing and complex needs of the contemporary workplace

(Sleezer et al., 2004). Besides, the rapid expansion of higher education has resulted in questions being raised about the quality of the graduate labour market and the ability of graduates to meet the needs of employers. Indeed, serious concerns have been expressed about an increasingly wide 'gap' between the skills and capabilities of graduates, and the requirements and demands of the work environment in an increasingly mobile and globalised society (Elias & Purcell, 2004).

Universities should be the critical friends to civil society, enlightening, informing and engaging, as part of their service. The growth within universities of pedagogical approaches based around the 'delivery' of 'teaching materials' in a narrow set of 'skills and competencies' bodes ill for the execution of this wider public intellectual role. This, we argue, is perhaps the most alarming of implications. The development of mass higher education has intersected with the shift towards a so-called knowledge-driven or post-industrial economy (Drucker, 1993; Amin, 1994). Meanwhile, higher education graduates are likely to develop new tools and skills themselves. Their knowledge can also improve the skills and understanding of non-graduate co-workers, while the greater confidence and know-how inculcated by advanced schooling may generate entrepreneurship, with positive effects on job creation.

Employability or employment of graduates is taken as key performance indicators in many countries to measure the university or programme performance Weligamage (2009). These indicators are called employment indicators. Performance measures of graduate labor market outcomes are likely to feature as an important element in the prospective student's information set (Smith, McKnight & Naylor, 2000). For example, in United Kingdom first destination survey to measure the employment performance was conducted (HEFCE, 2003). They calculated two type of indicators using the survey information as percentage of graduates who are employed or in further study, among all those who are employed, unemployed, or studying; and the second showing the percentage employed among those who are employed or unemployed. The Graduate Careers Council of Australia in association with Australian higher education institutions administers the Graduate Destination Survey and the Course Experience Questionnaire (CEQ) to gather information from graduates. Performance indicators used as Graduate full-time employment, Graduate full-time study, graduate salary, overall satisfaction, Good Teaching and Generic skills (Report of AEPL, 2003).

Enhancing employability skills of the graduates' is not a new topic and policy makers are still making plans to increase graduates' skills to meet the need of the current workforce. Higher education Institutions are one of key player in enhancing employability and their responsibility to identify how they can enhance skills of their —future employeesl'. Generic skills are the key term used as employability skills in most of the countries, but what is meant by this term varies in different countries. Other than HEIs, student and employers can also be considered as important parties to get involved in this process. Students and Employers can be taken as real customers in higher education. Expectation of both customers should be considered by the HEIs as service providers in this industry. Jerzy (2000) in Thi Tuyet (2014) discussed student and employer expectations from higher education. The author pointed out that young people would like to position themselves in the society and most of them think of their university studies as a good way to offer them good job opportunities. Sometimes they look for —modern fields of studies without analyzing job (employment) market prospect. On the other hand, universities are responsible in finding out answers for some key questions regarding the mission and the future strategy as well as the present status of their alumni.

From the perspective of employers, competencies as well as employability skills defined as “skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions (*Australian Chamber of Commerce and Industry & Business Council of Australia, 2002*). Enhancing graduate employability skills is considered as an important task within the university community in any country. In order to identify employer requirement most of the universities in the world regularly conduct employers' needs surveys. Employers normally give their comments on the skills they are looking for in new employees.

It is possible that employers' criticisms of the shortcomings of graduate recruits are not so much the result of failure in the HE curriculum, rather of failure in the transfer process. Atkins (1999) questions how transferable key skills are into employment contexts. Eraut (1994) in Atkins (1999) sees transfer as a learning process in its own right, although this may be easier for skills in relation to objects such as using particular computer packages, rather than the 'softer' skills of interacting with and managing people effectively. Brown (1999) in Knight & Yorke (2000)

believes that learning, and the transfer of that learning, is most likely to be effective if the learning situation closely resembles the work place. Further, Knight & Yorke (2000) believe that if there is any hope of transferring the learning from one context to another, the learner needs to use that learning in a variety of different situations. From these comments, it would seem that practice in a number of contexts is fundamental for the development of employability skills and attributes. Brennan et al. (1996) in a survey of graduates across Europe and the UK found that UK graduates rated teamwork, working under pressure, oral communication skills and problem solving in the top ten skills competencies they viewed as important. In contrast, none of these appeared in the list of competencies rated highly by European graduates, instead they highlighted learning abilities, working independently and written communication skills.

Dearing (1997) regarded key skills to consist of four components: (i) communication; (ii) numeracy; (iii) information technology; and (iv) learning how to learn and proposed that it was essential that these were developed at undergraduate level. The Department for Education and Skills (DfES) adds teamwork and problem solving to this list. There are many different lists of key skills, although there is general agreement about the importance of communication, numeracy, teamwork, IT and problem solving (Dunne et al., 2000). These are considered to be generic skills as they represent skills that can be used to support study in any discipline. The possession of some key skills – IT, numeracy, for example, will facilitate the acquisition of subject understanding (Yorke, 2004), as using IT for research will enable students to learn more about their discipline.

Internationally, there has been substantial research focusing on enhancing the capability of university students to meet the demand of the new workplace environment. One obvious and popular approach has been to develop lists of skills deemed desirable by employers. Many universities have built and attempted to assess lists of skills or graduate attributes that university students purportedly need to develop to be employable after graduation (Meisinger, 2004; Hartshorn & Sear, 2005; Raybould & Sheedy, 2005; Hart, 2008; Omar, et al. 2012). Others are against the idea of asking employers, and then building what they call ‘just another employers’ wish-list’ of skills graduates should develop in order to meet employers’ needs (Yorke, 2010:4). Some researchers show little enthusiasm for the relationship with ‘employers’. For example, Knight & Yorke (2004) put forward the view that ‘employers take everything and give nothing’

and that ‘some aspects of employment-related capacities can only be developed in the employment context’ (Yorke, 2006:3). Smith & Comyn (2003:10) even consider employability development as an issue of the workforce, not of higher education: ‘Employability skills are developed throughout a person’s working life and hence employers need to view the process of employability skills development as a whole-of-workforce issue’.

The lists of generic skills for employability are also criticized. For Yorkand Harvey, it seems impossible to build a list of generic skills which will satisfy all employers, because there are differences in emphasis according to employment sectors. Winch, on the other hand, sees the list of generic skills as nebulous (Winch, 2006:69). Beckett & Mulcahy (2006) also offer another warning for the formal representations of skills, this being that they cannot easily capture elements of knowledge which remain specific and tacit. Obviously not all knowledge is verbalized so, in developing profiles of skills, important knowledge such as intuitive or tacit knowledge is disregarded (Thi Tuyet, 2014).

Moreover, the building of lists of attributes/competencies leads easily to an interpretation that these attributes are discrete or atomistic entities to be acquired and transferred singularly, and that we can ‘recognize them easily when we see them’ (Hager, 2006:18). In practice, these attributes ‘overlap and interweave like the threads in a carpet’ (34). For example, we cannot go far into the consideration of teamwork before communication becomes an issue. In short, the lists of attributes/competencies may be interpreted, understood and recognized differently in different contexts, and by different stakeholders. It is not surprising that Beckett & Mulcahy (2006:262) in Thi Tuyet (2014) claim that ‘lists of attributes/competencies make no sense unless they show they are grounded in practical judgments and the reasons practitioners can give for their judgments are articulated amongst their peers’.

Since the focus of employability is on graduates securing a job and progressing in their careers, employability should be more than skills and wish lists, and relates more to ability than being employed (Rust & Froud, 2011). It is culture dependent context dependent and not always verbalisable as individual knowledge is both tacit and explicit (Beckett & Mulcahy 2006:251). Lowden, et al. (2011) mention the relative nature of the employability concept and suggest that particular attitudes and values can be highly contextual. Similarly, Smith and Comyn’s (2003:11)

argument also recognizes an important issue that ‘the worth of employability skills can only be fully appreciated in the workplace where the consequences of such skills can be seen’. Holland’s argument becomes more persuasive when he points out that ‘the tacit type of knowledge – “knowing how” – cannot be learnt in advance, no matter the extent or effectiveness of the experiential learning included in undergraduate degree programmes’ (Holland 2006:297). Employers cannot expect university graduates to have all the skills and knowledge of a good worker. According to Thi Tuyet (2014), it takes time and effort for graduates to ‘translate’ and ‘transform’ the knowledge and skills they learnt in universities to working context. Moreover, the complexity of generic capacities is actually developed through the real engagement, ‘in practice’, in workplaces.

Relevant subject-matter knowledge and skills are the traditional attributes. However, it has been realized that additional "soft skills" are vital to being able to function successfully in an organization in the present era. The soft skills enumerated within industries were explained by Russell, Russell, & Tastle (2005:1) as *"the ability to: 1) demonstrate effective interpersonal relations, 2) demonstrate self-management strategies, 3) work within teams, 4) solve problems creatively and 5) make decisions."* In addition, Westerstrom & Westerstrom (2009) claimed that:

To be employable as an engineer in today’s global market, you will need the theoretical hard skills, like fundamental knowledge of science, mathematics and engineering design, and problem solving skills; soft skills like communication skills, managerial skills, negotiation and interpersonal skills; global skills like being able to work multidisciplinary, with societal issues and solutions on global problems. As well, knowing what working life demands, a feeling for economy and markets, empathy and emotional intelligence are also needed (cited in Langley & Ronen, 2011).

The list included ability to seek out new information, problem solving ability, ability to work on one’s own without supervision, numeracy, written communication skills, formal presentation skills, team-working skills, computing/IT skills and the ability to identify solutions to customers’ business problems. Therefore, the generic employability skills developed by The Association of

Graduate Recruiters (AGR), in University of East Anglia (UEA) (n.d.) and presented below can summarize the skills that graduates need to acquire (P, 1).

Table 3.1

Competencies acquired by graduates in the HEIs

Competencies/Attributes Need to be Acquired by Graduates	
Mastery of ones own field of study /discipline	Research Skills
Compitencies on Multidisciplinary knowledge	Time management skills
Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)	Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness)
Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills)	Critical Thinking Skills
IT skills (Computer skills)	Creative Thinking and Visioning Skills

Source: (University of East Anglia (UEA), n.d.)

Table 3.1 above indicates the availability of some conceptual agreements on the skills and attributes linked to employability. These agreements on compitencies/attributes needed to be acquired by graduates are found to be true amongst different stakeholders.

The Universities' responsibility for their students and their academic, personal and career development begin as soon as a student first registers for his or her course of study. In this relation, Langley & Ronen (2011) have stated that catering for student employability is recognized as an area of accountability for institutions of higher education. Responding to this challenge requires a clearer understanding of the meaning of employability, the attributes/competencies that enhance graduate employability and methods which can be adopted by HE institutions to promote it. Hence, the skills, attributes and experiences that make a graduate employable need to be developed and practiced over a period of time. The approach is,

therefore, to ensure that all courses provide opportunities for academic and personal development in any subsequent years of study.

Many authors maintain that employability is better and more easily developed outside of the formal curriculum (Andrews & Higson, 2008; Ng & Feldman, 2009; Rae, 2007; Yorke, 2004), with particular emphasis placed on employment-based training and experience. The rationale forwarded for this argument was that there is little doubt that employers and employers' organizations are probably best placed to provide this work based training and experience, which in the past they did. However, organizations are becoming increasingly reluctant to invest in developing the transferable skills of graduates due to economic pressures and beliefs about the lack of commitment from 'generation Y' employees (Jackson, 2010), and so higher education institutions are expected to fill the gap and produce work-ready employees. Yet Cranmer (2006) has to find out that there was no evidence to show that employability skills development within universities had any effect on employability, compared to employment-based training and experience, which had positive effects. Graduates themselves are aware of the power of work experience in developing employability skills: 'work experience was the best way to gain the skills they needed for work' (Doctorjob.com 2004:2). In addition, students on degree courses that include a work placement (sandwich courses) are found to be more successful in finding graduate employment compared to non-sandwich course students (Harvey, 2005), due to the high value placed on work experience by employers.

In relation to the debate on whether higher education institutions are the right place to effectively develop employability skills, there is also the question of whether they are able to do so. Kreber (2006) points out the multiple pressures on higher education institutions which could make it harder for them to give increased focus to the employability agenda: competing in the research arena; increasing numbers of students and their diversity, implying they are less prepared for university; along with declining resources. Rae (2007) argued that universities are independent enterprises competing for student numbers in order to secure income and this have not encouraged them to consider employers' needs when planning courses. He suggests that this has led to an increase in the number of 'trendy courses' offered at the expense of more traditional courses which employers value. Far more contentious and fundamental than whether higher

education institutions can develop employability skills is the philosophical question of whether they should.

Education in its broadest sense has been shown to positively correlate with both fluid and crystallized intelligence, core task performance and citizenship performance (Ng & Feldman, 2009), all of which can contribute to employability. For some academics this broad education experience is not only sufficient, but is a core principle of higher education. They believe that higher education institutions are not the place to train graduates for jobs; that this is the responsibility of employers. Bowers-Brown and Harvey (2004) refer to the concept of the 'elitists', who believe that there is an over-emphasis on vocational subjects, which is not the role of universities. Moreau & Leathwood (2006) argued about the increased focus on skills development threatening academic freedom. Kreber (2006) also adds to this: 'some critics caution that universities could far too easily lose sight of such traditional values as curiosity-driven research, social criticism and preparation for civic life'.

Some academics object to the philosophical changes being forced on higher education institutions (Jackson, 2009), which appear to have coincided with a documented shift in the motivation to study, away from intellectual discovery towards a more instrumental approach (Massingham & Herrington, 2006). Cornford (2005) argues that government-created expectations that employers' demands should be immediately responded to is the root cause of many higher education issues. So, it is by no means clear whether employability skills can be developed and, if they can, the best way to do so.

The extent higher education institutions can, and should, be part of employability skills development appears to be a debatable issue among the perspectives of employers, graduates and the society at large. For instance, from the employers' perspective, Branine (2008) found that graduate employers are more interested in personal attributes and soft skills than degree classification, subject or university attended. This view is supported by the Confederation of British Industry (2008), with 86% of board executives putting skills and attitudes at the top of their list of demands; degree result was rated as important by 32% and university attended was rated as important by just 10%. Nevertheless, this is contradicted by other evidence. Research by Wilton (2011) confirmed findings from previous studies, by showing that new university

students fared less well in the labour market than those from older universities. This could indicate that employers' actions may not be matching their words.

From the graduate perspective, they recognized the value of employability skills and that a degree on its own may not be enough (Moreau & Leathwood 2006; Tomlinson, 2008). The number of students graduating has increased dramatically even more than doubling, which could potentially lead to an over-supply of graduates who find it hard to start their careers (Branine, 2008; Rae, 2007). This is evidenced by an increase in graduate unemployment, increased competition between graduates, and higher levels of uncertainty about what graduates can expect from higher education (Chartered Institute of Personnel and Development 2006; Moreau & Leathwood, 2006). Not surprisingly, the increase in the number of graduates has also changed employers' expectations. A degree, once a bonus or differentiator, is now almost seen as a prerequisite for a job, even in sectors which in the past would not have needed a degree at entry level (Brown, et al., 2003; Tomlinson 2008). Graduates are increasingly aware that they need additional skills and attributes for career success. From the higher education institution perspective, the argument is simple: league tables can affect student numbers, which in turn affects funding. Despite arguments about the correlation between employability skills development and actual employment, higher education institutions need good employment figures. Therefore, they need to continue investing in, and promoting, employability development (Alex, 2013).

From the wider society perspective, it is argued that there are also those who suggest that employability skills are vital to society in general, as they enable people to contribute to the wider social environment (Brown, et al., 2003; Wilton, 2008). Three other potential sources of current student views have been uncovered.

The term employability skills have become a 'chameleon' concept. Sometimes it is employed to define either a limited set of 'threshold' skills or a wide range of 'knowledge', 'skills' and 'attributes' that graduates are expected to demonstrate that they have acquired while studying in higher education (CVCP 1998, Hillage & Pollard 1998). On other occasions, it represents the demand, in many professional occupations, for a mix of the traditional disciplinary and technical

knowledge, which have always been developed in higher education, as well as employability skills (Mason, 2000).

Moreover, employability skills are the skills that are directly pertinent to obtaining and maintaining work (Harvey, 2001; McQuaid & Lindsay, 2005). They are comprised of the generic and discipline-specific skills required for performance in a work situation; and career management skills, divided into two categories of competence: self-management and career building. Career management skills and knowledge are essential to employability in that they play a large part in determining which, to what extent, in what manner, when and where generic and discipline-specific skills are learned, displayed (e.g. in applying for a job) and used (Bridgstock, 2009). Generic skills are the transferable skills previously discussed in this study. These skills are the most widely acknowledged 'employability skills' in university, policy and employer graduate attribute lists such as the ACCI/BCA *Employability Skills Framework* (ACCI and BCA, 2002). They include such skills as information literacy, working with technology, written and verbal communication, working in teams and numeracy (Bridgstock, 2009).

Career building skills are the skills relating to finding and using information about careers, labour markets and the world of work and then locating, securing and maintaining work, as well as exploiting career opportunities to gain advancement or other desired outcomes (Bridgstock, 2009). It has been suggested that the acquisition of this kind of competency will result in more realistic expectations of the labour market and fewer mismatches between labour market supply and demand resulting in poor employment outcomes (Mayston, 2002). Career building skills include: (i) Being familiar with one's industry – the opportunities and threats that exist and which factors are critical to success. This involves a knowledge of 'the rules of the game', including industry structure, beliefs, norms, values and culture, as well as labour market information, such as unemployment rates and median salaries; (ii) Being able to effectively identify and choose the best opportunities for advancement in terms of geography, projects and role; (iii) Knowing how long to stay in a role, when to exploit a new employment or training opportunity and the ability to move quickly once an opportunity arises; (iv) Knowing how to effectively apply for and obtain work; representing one's skills and abilities in a way that is attractive to employers or clients; (v) Creating social capital by creating strategic personal and professional relationships with those who might provide opportunities and important resources.

These kinds of relating skills have been shown to have a direct effect on perceived (Eby, et al., 2003) and actual employability (Brown & Konrad, 2001; Marmaros & Sacerdote, 2002; in Bridgstock, 2009).

Despite the obvious theoretical appeal of a link between career building skills and employment outcomes, surprisingly little empirical examination has been conducted thus far. Although career management skills have direct economic impact through graduate employability effects, broader benefits of career management skills have also been proposed. Hughes, Bosley, Bowes & Bysshe (2002) in Bridgstock (2009) reviewed more than 40 primarily UK- or US-based studies investigating the economic effects of career guidance. They concluded that, while there were significant challenges involved in evaluating the impact of career education provision in separation from other contributory factors, there was moderate-to-high level evidence for economic benefits in higher education through improved student course choice, course retention and learning outcomes and in the wider population through lower unemployment rates, reduced job-search times, lower worker turnover rates and improved productivity.

3.5 Graduates' Job Search: Transition from Higher Education to the Labor Market

The transition from higher education to the world of work has been described as a dynamic process in which a person moves from the educational system to a relatively stable working position. It reflects the way young people's entry into the labor market is regulated rather than merely being the consequence of individual resources and characteristics. Individual resources are, however, influenced by the institutional contexts, and particularly by the institutional arrangements of educational systems, organisation of the employment system and linkages between those institutions (Hannan, et al., 1997). The transition from universities to the world of work is a process, for recent graduates, during which they learn the new tacit knowledge of the workplace. This knowledge 'is needed to successfully adapt to, select or shape real-world environment' (Sternberg, et al., 2000:104). While a considerable body of research exists on the education -to-work transitions for western industrialized countries, far less is known about the developing ones.

The expansion of higher education participation in many OECD countries in recent decades has led to increasing interest by researchers and policy-makers in the ‘education-to-work’ transition of new graduates and the extent to which they are readily ‘employable’ (Carroll, 2013) because the transition from study to work is an important aspect of attention by countries. The jobs that graduates secure after completing their studies may very well shape the trajectory of their future careers, so an understanding of how job search influences employment outcomes has significant implications for theory and higher education practice. In relation to this, Carroll (2013) identified broad types of job search method are investigated: advertisements, university-based methods, networking, direct employer contact, and other methods not specifically addressed in the survey. Although questions concerning how individuals find jobs are among some of the most under researched topics in labour market research (Try, 2004), a number of studies have shown a significant relationship between job search methods and earnings.

Two institutions are of central importance in influencing school-to-work transitions: the educational system and the labour market (Muller, 2005). Among the main dimensions of educational systems, its vocational specificity might play a central role as it presumably affects the relative dominance of principles of labour market organisation or, in other words, generally contributes to shaping the structure of labour markets. The idea is that the more successful educational systems are in providing standardized and specific vocational qualifications of immediate and clear labour market value to prospective employers, the more these employers will use educational signals (rather than, e.g., experience) in labour market allocation decision-making. In this regard, scholars contrast systems of internal labour markets (ILM) vs. occupational labour markets (OLM) or qualificational vs organisational spaces (Maurice, et al., 1986; Muller & Shavit, 1998). In the so called qualificational spaces or OLM, labour markets are predominantly structured along occupational segments related to corresponding tracks of vocational training in the education and training system (e.g. Germany’s apprenticeship system). In countries that cannot rely on similar encompassing and employment related training systems, training of the workforce is more firm specific and tied to the specific needs of individual firms and their firm internal labour markets.

Stricter labour regulation is said to have also potentially positive effects on school-to-work transitions. Notably such outcomes may be expected if strong union presence, in conjunction

with a centralized system of collective bargaining and co-operative relationships between corporate partners, can be employed in ways that generate economically viable institutional structures of youth labour market integration (Estevez-Abe, et al., 2001). Collective, corporate efforts might include wage moderation policies to enhance youth labour market integration both at the level of particular firms or industries and also across the whole economy. Other forms include efforts to establish common training standards for certain occupations or industries or to involve corporate bodies in the formulation and implementation of training curricula (Hannan, et al., 1999). Clearly, corporatist involvement in training systems is most strongly developed in the context of apprenticeship-based dual systems (e.g. Germany), where employers and unions are actively engaged in both the conceptualization and provision of training.

In their study of ‘employability skills initiatives’ at institutional level, Mason, Williams, and Cranmer (2006:24) conclude that there is no evidence that the emphasis given by university departments to the teaching, learning and assessment of employability skills has a significant independent effect on either of the labour market outcomes considered here [i.e. whether or not graduates had gained employment within six months of graduation, and had secured ‘graduate level jobs’]. In addition, the transition from the university to the workplace is one that individual graduates will need to negotiate, or in other words, the onus is on them to find jobs and to stay employable in the market (McQuaid & Lindsay, 2005).

Elias & Purcell (2004), distinguish four categories of graduate occupation that either require university degrees or offer scope for use of degree-level skills and knowledge along with a large residual category of non-graduate occupations (principally in clerical, personal service, sales, and skilled trade, laboring and related occupations). Elias, et al. (1999) in Elias & Purcell (2004) found that the likelihood of being employed in a non-graduate occupation declines over the first few years after graduation as some individual graduates manage to secure graduate-level employment after first accepting a period of lower-level employment. However, an initial period of under employment was found to have lingering negative effects on those graduates’ salary and career development, suggesting that data on employment status six months after graduation may in fact be useful indicators of future labour market prospects.

HEIs' contribution to employability can appraised by looking at employment rates approximately six months after graduation [Higher Education Funding Council for England (HEFCE), 2001]. In relation, there are conceptual and practical objections: the practical problems include the first destination survey's insensitivity to the type of job graduates get and the difficulties of getting recent graduates to respond to requests for information about what they are doing; the conceptual reservation is that, whereas 'employability' surely signifies a fitness for graduate employment, these first destination data say as much about the graduate labour market and indicates that it is nothing like a perfect market (Coleman & Keep, 2001). The labour market discriminates against some groups that, when taken in conjunction with regional variations and the impact of economic cycles on hiring patterns, means that it is naive to assume that 'employability' should correlate closely with getting a graduate job (and even more so *within 6 months* of graduation).

3.5.1 Methods of Job Searching Frequently Used by the Graduates

Job searching as well as transition period from higher education to the labour market has been a focus of policy concern (Spokane & Hawks, 1990) and the most understudied area of contemporary career development (Keep, 2011). However, most studies in this area ignore the fact that there are several different search methods, that the access to different job search methods may be unevenly distributed between groups of job searchers, and that the relative effectiveness of alternative search methods may differ (Wielgosz & Carpenter, 1987; Blau & Robins, 1990; Montgomery, 1991; Addison & Portugal, 2001; Cahuc & Fontaine, 2002). For instance, Marsden & Gorman (2001) reviewed numerous studies conducted throughout the United States in the 1970s and 1980s that record as much as 51% to 70% of successful job-seekers finding work through personal connections, such as friends and relatives. This seems to be less of the case in Europe, where studies conducted from the 1970s through to the early 1990s show that anywhere from 31% to 50% of those who successfully found work did so through personal connections (Sotnik, et al., 2010). In Israel and Singapore, on the other hand, the percentages are in the 70% range. After surveying the available literature on the subject, Marsden & Gorman (2001) concluded that clusters are able to properly communicate subtle

information in an expensive manner, expose members to a closed community, and even influence the decision to hire.

According to networks expert Barabasi (2003), networks and clusters are known to be present in all industries, with employers believing that employees hired through personal links perform better and quite less frequently than those who are hired through the formal process. Barabasi pointed out that a closed, high density network may exhibit sharing as a main characteristic, while an open and sparse network may provide extended access as a main characteristic. In relation to this, Try (2004) suggested three possible mechanisms promoting the use of different job searching methods. These are social capital; labour-market selection and the use of ads. To the same author, capital refers to sets of resources that inhere in family relations and in community social organizations, which individuals may benefit from when they want to achieve certain goals. Such resources differ for different persons and can constitute an important advantage in the development of their human capital and in their labour-market career. In his reflection, the extent to which an individual has access to social capital depends on the person's connections (who he knows), the strength of these connections (how well he knows them), and the resources available to these connections. In other words, while a person's physical, financial or human capital is defined by the resources available to her- or himself, a person's social capital is partly defined by the resources available to others (Sobel, 2002). The term "social capital" has been used in the literature with a variety of meanings. For example, (Sotnik, et al., 2010) stated that social capital is analyzed as a function of civic engagement and trust in social institutions. Try (2004) treats social capital as an attribute of an individual in a social context, following the definition offered by Bourdieu (1986:6): "The volume of the social capital possessed by a given agent thus depends on the size of the network of connections he can effectively mobilize and on the volume of capital (economic, cultural or symbolic) possessed in his own right by each of those to whom he is connected".

To identify the relevant elements that define social capital in the job search process, Try (2004) drew upon the so-called F-connection in accordance with Ben-Porath (1980) & Coleman (1990). The F-connection is composed of families, friends and firms. These sources may function as exchange systems (of services or information) useful to the graduates searching for jobs. For example, if one or both parents have a major degree, they are on the same educational level as

the graduate, and they may have access to information relevant to the graduate's job search process, through their own labour-market experience, knowledge and network. From this network, job offers may be generated directly, or information about vacancies may be exchanged, or the graduate may be referred to employers looking for workers. Access to such networks may also operate through relatives and friends or earlier employers and earlier colleagues. Individuals' social network and social ties used in the job search process may consist of close relatives or friends (strong ties) as well as persons with whom the graduate has only weak social ties, such as relatives/friends of friends or earlier employers/colleagues (Granovetter, 1973; Wegener, 1991).

Empirical studies on the use of PES (Public Employment Service) recommended that people at first tend to turn to other job search methods. Many job searchers choose PES only when other search methods have been tried unsuccessfully and after a spell of unemployment (Blau & Robins, 1990; Osberg, 1993; Gregg & Wadsworth, 1996; Thomas, 1997). A possible explanation of the postponed contact with PES may be that PES is viewed as a relatively inefficient method matching workers to jobs, or that the jobs that PES offers on average are less attractive than job offers generated by other search methods (Try, 2004). PES is often helping employers in immediate need of workers to fill vacant jobs of limited duration (short term contracts), with limited skill requirements and with below average wages (Wielgosz & Carpenter, 1987; Jones, 1989; Blau & Robins, 1990; Osberg, 1993; Thomas, 1997).

Other job search methods may also be more available or accessible than PES, for instance, ads in newspapers, magazines, university notice boards in various network approaches (Try, 2004). However, university graduates do not constitute a homogenous group of job searchers (Sotnik, et al., 2010). For example, they differ in field of study and by academic performance, and they may operate in different local labour markets with variations in demand conditions (to the extent that they are not fully mobile across regions). In his study, (Try, 2004) reported that graduates who belong to an educational group with excess supply, or who did not perform well during their study (poor marks), or who live in areas with weak labour-market conditions, do more often than others face problems finding a relevant job. Graduates' experiences of the university-work transition have been transformed in relation to changes in Higher Education and the labour market.

Further, Huffman & Torres (2001) found out that the use of newspaper advertisements, school placement officers and private employment agencies (all formal job search methods) was associated with increased earnings; whereas answering help-wanted signs was associated with far reduced earnings, even after controlling for a range of demographic and job characteristics. They also found that the positive wage effect of school placement officers was relatively stronger for males, and that the negative wage effect of help-wanted signs was relatively weaker for females. Additional evidence on the inconsistent relationship between informal job search methods and earnings is presented in the review by Mouw (2003). Using Portuguese labour market data, Addison & Portugal (2002) concluded that jobs obtained through the public employment service (analogous to *Centre link* in Australia) tend to pay less. In contrast to all of these studies, Weber & Mahringer (2008), using Austrian data, did not find any earnings differences attributable to different job search methods after controlling for a wide range of observed covariates. However, authors revealed that although the literature is sparse and difficult to compare due to differences in study populations and job search definitions, there is sufficient evidence of an association between job search methods and earnings to warrant an investigation on this topic in the context of the Australian graduate labour market.

There is evidence that the returns graduates can expect from higher education are less certain than in the past (Brown, 2003; Taylor, 2005) and that different groups of graduates receive different levels of returns, depending for example on gender, ethnicity and social class. To Bridgstock (2009) adequate preparation for transition to the world of work, and maintaining employability once there, involves activities such as clarification of personal aims and abilities, understanding the requirements of the labour market and the ability to actively engage in the career building process.

3.6 Higher Education Structure in Enhancing the Employability Skills and Job Opportunities of Graduates

Globalization and technological forces at work today are inevitably impacting the organizational structure of higher education to influence job opportunities and employment of the graduates (Hays, 2008). Accordingly, Colleges and Universities of different countries have made various changes in their organizational structures. The role of structure in enhancing employability have

been described and analyzed in increasing depth and breadth in universities like the Anglo-phone category through four aspects. Firstly, a far stronger role for central authorities in the determination of university objectives and modes of working can be considered. This is true of universities which used to be under detailed central controls and those that used to enjoy large degrees of autonomy (Kogan, et al., 2006; Musselin, 1999, 2004).

Secondly, the creation of powerful managerial infra-structures which paralleled and to some extent replaced the academic structures of deans, heads of departments and professors by professionals or academics which used to be based on collegial decision making bodies have been become integrated in the administrative line of the organization and thus become part of top-down decision making structures (Kogan & Bleiklie, 2007). This reverses the basis of legitimacy and the movement of decision making premises. Whereas decision making used to be based on collegiate bodies that at each level of the organisation were composed of representatives from the organizational level below, decisions which was often trusted with leaders appointed by and supposed to implement the policies of leaders on the organizational level above their own so that department chairs are appointed by deans and deans by rectors. The creation of directorates concerned with the economic development, marketing, quality assurance, international connections of the university.

Thirdly, in many countries the power of academically dominated senates has been paralleled or replaced by councils, boards or trustees who incorporate representation from the world of business, public services and politics could be observed. These and their chairpersons in particular reinforce the corporate nature of the reformed university (Kogan & Bleiklie, 2007). Finally, a movement of power so that institutional leaders - rectors, presidents or vice-chancellors - who used to act as nearer the position of chief executives running a corporate institution could be mentioned. This means less detailed interference from central authorities through laws and regulations in day to day operations and budgetary decisions and more focus on goals management by objectives and result (Kogan & Bleiklie, 2007). These movements add up to a situation in which working conditions of the institutions are becoming standardized at the political level, institutional leadership strengthened, new managerial structures established, and collegial structures weakened and replaced by stakeholder boards and a stronger bureaucratic line organisation with a firmer top down grip on internal organizational processes.

Employers have also expressed concern about graduates' ability to cope with change and to add value by continuing to learn and develop in the workplace (AGR, 1995; Harvey, et al., 1997). Apart from stipulating a continuing demand for key skills, reports and papers also began to articulate the need for additional 'skills' that employers expected from graduates to display. Two new types of skills which were reported to be mentioned include: meta-cognitive skills such as learning how to learn (AGR, 1995), and 'behavioral attributes', such as an ability to take responsibility for managing performance at work and career development (Harvey, et al., 1997). The wide spectrum of employability skills presents a serious challenge to institutions of higher education wishing to act on their commitment to the employability of students in different departments. The two most common approaches to skill development, representing two ends of a spectrum, were found to be either 'embedding' skills within degree course or offering students 'parallel' or 'stand-alone' courses (HEFCE, 2003). Therefore, structures of higher education are expected to contribute for the development of employability skills and responsible to facilitate opportunities for employment. This includes, as to Hughes (2009): Departments: for the implementation of employability strategies and for encouraging, supporting and monitoring the development of employability skills in course curricula. Students: should be actively encouraged to take up opportunities to develop these further within the wider community; Course teams: for developing their curricula to support the development of employability skills and encouraging students to take up opportunities to develop these further within the wider community; Personal tutors: critical to the successful implementation of the employability strategies and to ensure that students are equipped with the appropriate skills; Department of Employability, in particular the Careers and Recruitment Service: responsible for supporting students individually, in groups and through academic programmes to develop their career management and employability skills. It also has an advisory role with regard to employer engagement and the graduate employment market; Centre for Enterprise: for leading and supporting the sustainable development of innovation, enterprise and entrepreneurship amongst staff, students and partners; Department for Curriculum and Quality Enhancement: for promoting and supporting the development of appropriate curricula, learning, teaching and assessment strategies and activities which develop employability; The Students' Council: for enabling and encouraging students to develop personal and employability skills through volunteering, clubs and activities, community involvement and other extra curricula activities; and The University Learning and Teaching Committee: for

monitoring and reporting on implementation as part of its overall monitoring of Learning and Teaching Strategies.

In the meantime, activities of employability in HEIs are aimed at developing both ‘hard’ and ‘soft’ skills, where by the former is described as: job searching techniques; providing help with job search; CV writing; contacts with employers; help with finding and securing work placements/internships; careers events and fairs; computer skills; research skills; time management; literacy; provision of temporary and vacation work. These hard skills are primarily requiring mastery and practice of a body of knowledge. And the later soft skills are included as: career identification and planning; interview practice; understanding of career and how it works; communication skills; decision-making skills; presentation skills; and team working skills. These soft skills require development of largely inter- and intra- personal skills. Moreover, soft skills, according to Towner (2000), refer to “those attributes that enable effective teamwork, communication, presentation, leadership, customer service, and innovative problem solving.

It is elaborated further that soft skills are not job-specific; they are valued across a variety of jobs, fields and organizations, regardless of position or title they are essential for effective performance in a broad range of jobs and are transferable across workplaces. Additionally, soft skills are important for employability due to the emergence of the knowledge-based economy and proliferation of high-performance workplaces characterized by a focus on quality products and services, participatory management style, reduced supervision, increasing use of cross-functional teams to accomplish tasks, multiple responsibilities, and being customer-oriented. There is a greater demand for knowledge workers with a strong orientation towards interpersonal skills, teamwork, creativity, and lifelong learning. In the words of Clive (2004) in Pool & Sewell (2007) the effective knowledge worker works in teams, multitasks, and is a critical and creative thinker.

In the context of static or reducing resources and increasing demands on careers services, students should have primary responsibility for developing their own employability skills. However, this responsibility must be clearly communicated in order to lessen the pressure on career advisory staff in particular and to enable priority to be placed on the development of initiatives and relationships, rather than on the physical delivery of the skills. Peter (1999) argued

that *‘to be employed is to be at risk, to be employable is to be secure’*. Hence, students who make an effort to fully participate in the total student experience (academic, co-curricular, extracurricular and work experience) could benefit from a well rounded education and could contribute fully to the life of the University and community besides having fun hopefully in the process.

The other aspect of structural arrangement for effective skills development for graduate employability is related to the involvement of previous students/alumni as a means of supporting the career development of recent graduates. The key responsibilities of Alumni may include some or all of the following: staying in touch with their former universities, providing support for the universities’ recruitment activities such as by attending exhibitions, fairs, information sessions, pre-departure briefings and other activity; provide advice about life in job market a timely manner; be point of contact for market intelligence relating to recruitment activities. Furthermore, alumni can promote mentoring and offering work placements for current students to enhance graduate employability; become guest speakers to provide access to exclusive venues for events, and put the universities in contact with influential individuals; they can promote the range of volunteering opportunities to encourage engagement, including formal voluntary roles, case studies, contributing to publicity materials, and other initiatives; support the university’s fund raising activities, priorities and the different opportunities for making a gift, scholarship opportunities, financial support; promote culture, etiquette, best practice and any other issues arising; Moreover, alumni can provide guidance on media outlets in their area through which the university may be able to raise its profile (University of Liverpool, n. d.).

Further, the involvement of employers in HE curriculum development is both a policy imperative and an inevitable consequence of supporting students making the transition between HE and employment (CICHE, 2010). Employer involvement in course design and delivery took forms, according to Thi Tuyet (2014) such as commenting on the relevance of course content to future employment prospects, providing material and ideas for student projects and giving guest lectures. In some cases, this employer involvement occurred through formal membership of course advisory panels; in other cases, it largely depended on personal contacts between employer representatives and university staff (Mason, et al, 2006). Above all, it was suggested that not only universities, but also students, employers and other related stakeholders (i.e.

student's family, government and educational policy makers) should acknowledge the changes in society, should be aware of the cultural features at work, and should see their responsibility in the process. They all should make an effort to create mutual understanding, to collaborate and to enhance the development of graduate employability.

3.7 Study Conditions for the Graduates' Employability and Employment

Study conditions are to mean about the availability of facilities and infrastructure to the engineering students while they are in higher education institutions. Practically, knowledge economy, rapid technological changes and changing skill requirements in the labour market seem to influence changes in the landscape of higher education (Altbach, 2005). In effect, the rapidly changing world thus requires graduates to possess broad international knowledge and strong intercultural skills, in addition to the more traditional disciplinary knowledge gained from university education. In this context, both Hard and Soft Science and Technology Institution (STI) infrastructure becomes critical in filling the financial and knowledge gaps of graduates (Varghese, 2011). Soft infrastructure involves networks and information technology that provide access to management, intellectual and R&D resources as well as key information on sources of knowledge, market opportunities and potential partners across national borders (www.ssn.flinders.edu.au). Hard infrastructure includes well-equipped centers, science and technology parks, technology and business incubators, furnished classrooms, among other common facilities (www.ssn.flinders.edu.au). Yankson (2013) noted that facilities for teaching and learning and research directly or indirectly influence the academic environment like accommodation and recreation. In his findings, To Yankson unreliable power supply, backward water and sanitation systems, poor transportation networks and services and ineffective information and communication systems directly affect effective daily operation of individuals, firms and institutions.

Currently, the introduction of technology into the classroom is changing the nature of delivering education to students. It is gradually giving way to a new form of electronic literacy, more programs and education materials are made available in electronic form, teachers are preparing materials in the same format; and students are generating papers, assignments and projects in electronically (Chinnammai, 2005). Furthermore, Video projection screens, books with storage

device servers and CD ROMs as well as the emergence of on-line digital libraries are nowadays replacing blackboards. Even exams and grades are gradually becoming available through electronic means and notebooks are starting to give way to laptops. Also, students can be examined through computer managed learning systems and do tutorial exercises on a computer rather than in a classroom. Such developments in education portray that there has been a shift from industrialization to information-based societies (Varghese, 2011). Therefore, whether or not the engineering students had chances to study in such types of contexts or remain to be confined with the traditional study conditions is believed to determine their successes employment in the labour market.

In relation, Atlay & Harris (2000) have commented on that it is important to work with the culture and values of the institution and of HE itself. A culture that strives to improve the learning environment for the benefit of students and staff is essential for the successful implementation of change (Lee, 2002). The staff has to note that *‘The things employers generally value in new graduates, are things that most teachers in higher education generally value’* (Harvey & Knight, 2003). Of which, Work Integrated Learning and team-based capstone projects are considered valuable means of preparing students for the workplace and professional practice (Von Konsky et al., 2008; in Langley & Ronen, 2011). Gol, et al. (2001) in (ibid) elaborate on the practice of using industry-inspired final year projects and argued that many tertiary institutions use project-based courses as a capstone for final year engineering, software engineering, computing and informatics students. Such courses give students an opportunity to draw together the apparently disparate learning they have undertaken during the preceding years. Students often work as members of a team, gaining team skills, as well as interacting with industry rather than academics only (Johns-Boast & Flint, 2009; cited in Langley & Ronen, 2011).

Furthermore, “learning by doing” has to be the foundation of work-based learning. Students must be provided the opportunity to participate in a work experience that assesses the state-approved competencies. Under the guidance of the workplace mentor, students could develop the technical skills which are related to a student’s performance in entry-level employment. Students can get an opportunity to demonstrate competencies learned in the classroom. These efforts were emphasized by Wisconsin’s Education for Employment Standard (n.d.) indicating for the need

for: business and education partnerships; application of basic skills; career development; employability skills and attitudes; school-supervised work experience; and knowledge of all aspects of an industry.

SASCE (2015) also argued that through partnerships with industry and academic institutions, it is possible to secure and facilitate work-based learning placement opportunities and thereby; producing work-ready graduates with quality hands on and critical skills, promoting job creation and employment, providing career planning opportunities, sponsoring graduate placement opportunities, ensuring quality facilitation and learner support. Therefore, work-based learning requires the integration of academic content and technical skill development and this role is much attached to academic staff members.

Further, the effects of Extra-Curricular Activity (ECA) on students' experiences, outcomes, and future job prospects are well documented. Researchers have examined a number of ways in which ECAs benefit students. Kaufman & Gabler (2004) found that activities such as music and dance, public service, inter-scholastic team sports, and student government all improved students' likelihood of getting into college. These activities provided hands-on skills and training, alongside opportunities to increase one's self-esteem and investment in school life. Employers may also favour certain ECAs such as those indicating responsibility, reliability and maturity. Tchibozo (2005) cited in Stuart Lido, Morgan, & Solomon (2011) found that certain ECAs undertaken at leadership level gave better access to large firms, job security and protection against unemployment. It is, therefore, clear that there is a need for a better understanding of the long-term impacts of extracurricular activities during study times for the success in later transition to the world of work.

Therefore, areas covered in 'the study conditions' for employability-skills development include: work experience of various types like sandwich courses, 'live projects', semester and shorter placements, visits and work-shadowing; and opportunities for structured reflection on work experiences. Proper and job-related learning comes not just from doing work experience but also (and significantly) from reflecting on the experience; embedded and explicit skills development in programmes of study; free-standing electives (skills development, career management, etc.)

and centrally-provided services such as careers advice; and helping students recognize what they have learned from extracurricular activities (HEFCW, 1999).

Nonetheless, there are concerns in some circumstances about the Higher Education Institution's poor infrastructure, out-dated teaching facilities, curriculum and teaching methods. Adding to these difficulties and challenges are the loose relationships between the HES and the labour market, the underdeveloped research capability of universities, and the tenuous research–industry linkage gap (Fatseas, 2010). Together, these operate as obstacles blocking the ability of universities to enhance the capability of their graduates for employment (Thi Tuyet, 2014). Thus, unless these deficiencies are addressed, the likely success of universities in carrying out their graduate employability-related tasks are to be diminished; and the study conditions of students are to be weaken (The World Bank, 2008; Tran & Swierczek, 2009; Montague, 2013). For example in Vietnam, the inherited infrastructure of most universities was found to be antiquated and teaching methods have remained traditional – focused on transmitting knowledge from the teacher to the student (Stephen, et al. 2006; Vu, Dang, & Tran, 2007; Dapice, et al., 2008). Of course, changes along such many fronts may require time, support, funding and effort to allow universities to address the new labour needs of the economy.

3.8 Curriculum Relevance to the Graduate Labor Market

Curriculum in higher education literature has been defined from several perspectives. Yankson (2013) claimed that curriculum is better conceptualized as a site for social interaction among students, faculty, and content. He further explained that curriculum is the centerpiece of academic decision-making, institutional values, professional lives of students and faculty, and reason for the existence of higher education. Higher education curriculum needs to be responsive to the interests of employers and take a planned action to equip graduates with the required and up-to-date employability skills (Barnett, 2006:51). Knight & Yorke (2000); Yorke (2001) believed that HE curricula can make a difference to personal beliefs and approaches. Along with this, curricula offered in HEIs should be well designed with objectives that address both local and international issues (Yankson, 2013). In relation, Knight & Yorke (2000) warn against making four common mistakes when it comes to curriculum change for employability: rational

curriculum planning, which *begins* with statements of goals and learning outcomes; scorched earth change, when the old is thrown out for the new; fast change; paper changes – change without change; and it is only a minority of students who are able to gain employment which directly utilizes the academic content of their degree programme. Additionally, Amare (2000) has argued that if curriculum is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conception of the objectives that are being aimed at. Objectives are glasses through which we see where we want to go or what the end product would look like. These educational objectives become the criteria by which materials are served, contents are outlined instructional procedures are developed and tests and examinations are prepared (Tyler, in Amare, 2000).

At the core of the employability debates is whether the teaching of employability skills should be embedded or bolt-on. Skills are best developed when they are integrated across the curriculum and students are given the opportunity to develop higher levels of skills as they progress through the programme of study (de la Harpe et al., 2000). By embedding these skills (not just *skills* but also attributes) it gives them the same status as knowledge and obliges lecturers to cover them, however, bolt-on options ensure that skills are covered competently. Knight & Yorke (2001) feel that by having separate key skills modules where the skill development is not fully integrated into the curriculum, key skills – and by association, employability, are being trivialized and ghettoized. For the most part then, the development of employability skills and attributes should be integrated within the curriculum.

Curricula may then need to be adjusted to fill any gaps in provision that become evident after the existing provision is mapped. Whilst one module will not encompass all aspects included in the list, Knight & Yorke (2000) believe that an entire programme of study should. All students taking a course should be entitled to messages and encounters that develop understandings, skills, self theories and reflection – good learning and education improves employability. Employability is therefore also about *how* we teach *what* we teach. Otherwise, the ill-preparation of university graduates is considered the result of the out dated and irrelevant curriculum in the higher education system, of the traditional teaching methods and the absent of career guidance in most universities (Thi Tuyet, 2014). More recently, a research study by the University of

Technology, Sydney (Scott & Yates, 2002) has undertaken ‘backward mapping’ based on the experiences of high-achieving graduates from a number of discipline areas to improve curriculum design, and teaching and learning practices. However, learning, teaching, assessment and curriculum experts regularly say that good subject matter *understanding* comes from the active construction of meanings. That, in turn, involves instruction, tasks and learning environments that call upon incremental self-theories, self-motivation, reflection and a range of social practices, amongst other things. In other words, graduate employability is fostered by teaching approaches that take this set of factors into account.

Whilst, academic staff might reject employability as a curriculum goal, they are much more likely to accept that curriculum *processes* can improve the chances that students will gain in terms of employability. In this way, one can say that good subject matter understanding is compatible with employability policies, and that employability and good learning are highly compatible. Individual teachers and their modules may sparkle in ‘garbage can’ or ‘free-for-all’ curricula, but ultimately contribute little to the complex learning that employability and good learning both are in need of (Biggs, 1999 cited in Knight & Yorke, 2003). As higher education systems around the world are pressed to increase their effectiveness in various ways, it becomes more important to enhance the quality of learning and teaching (Knight & Yorke, 2003). HEIs respond by developing and implementing learning and teaching strategies. There are now some signs that educational development (conceived on a broader scale than hitherto) are beginning to help with the next step, the design of institutional and programme learning environments. In these ways student employability may be fostered.

What is more, higher education students need opportunities for work-related learning, specifically, in the present era of globalization because of the changes that have occurred, and continue to occur, in the labor market as well as in higher education itself (Moreland, 2005). The situation demands a work-related curriculum as there are many changes occurring in relation to the world of work such as: the shift from manual to non-manual employment and the associated belief in the rising importance of cognitive and skill upgrading as opposed to physical forms of skill (National Skills Task Force, 2000); the shift to a service-based economy, with an increasing emphasis upon ‘aesthetic labour’ (bodily appearance and deployment) allied to a changing

gender balance in the workforce (Keep & Payne, 2004: 60); globalisation of companies and intensifying international competition (Carnoy, 2002); the growth of post-modernist complexity (Barnett 2000) through the use of new technologies and communication media (Castells, 2000; Carnoy, 2002: 129; Keep & Payne, 2004); labour market marginalisation, skill polarisation and a marked intensification of work (Gallie, 2002: 96 & Amoore, 2004); the trend to smaller, directly employed workforces and a related increase in alternative employment forms such as consultancies, short-term contracts, subcontracting and the like (Baiman, 2001 & McMaster, 2001).

Likewise, knowledge itself is becoming of greater significance in maintaining ‘competitive edge’, and increasingly seen as the key to performance in the professions and higher order ‘graduate jobs’ (Gow & McDonald 2000); knowledge creation is more dispersed across organisations in societies (Hager, 2000:54), leading to increased networking, and economic links being developed between universities and industries (Sundaramurthy & Lewis, 2003); A decreasing emphasis on disciplinarity in favour of knowledge that is ‘non-hierarchical, pluralistic, trans-disciplinary, fast changing, and socially responsive to a diversity of needs such as students’ dispositions and industrial priorities’ (Smith & Webster, 1997: 104); The changing relationships between citizens and their States (Taylor-Gooby 2004), where increasingly an emphasis is placed upon citizens taking more personal responsibility for their actions and fates, especially in the light of increased personal risks but also opportunities (Beck, 2000); and an increasing emphasis upon innovation and change through high performance work systems that emphasize interactive and creative capabilities such as problem solving, team-working, initiative, judgment, leadership and lifelong learning (for example, Boreham, 2002; Druskat & Wheeler, 2003; Bailey, et al., 2004).

In line with this, the purpose of contemporary HEIs is to ensure students learn and gain comprehensive quality and rounded education that makes graduates employable in a sustainable manner. In relation to this, the 1997 graduates’ work survey remind that HEIs need to be aware of the changing nature of the workplace, the requirements of employing organizations and to be responsive to these changes and demands (Harvey, 2003). Higher education has a responsibility to equip its students:

...with more than a profound knowledge of an academic subject area, Higher education has a responsibility to students that includes encouraging and enabling them to develop, through their academic study, a range of explicit attributes, which allow them to subsequently engage effectively in the world of work (Harvey et al., 1997: iii)

In a study on the relationship between higher education qualification and employment, Harvey (2000: 7) rightly argues that with the organizational changes and increased number of graduates, a university degree is no longer “a passport into employment”. Harvey adds:

...a degree is no guarantee of a job, let alone a career, and should only be seen as a reaching ‘first-base’ in the requirement process. [...] Increasingly, ‘graduate attributes’ are more important in the recruitment process than the graduates’ degree subject. [...] Subject-specific knowledge is not the primary determinant of suitability for employment in most graduate recruitment (2000:7).

By outlining the Personal and key skills provision in module accreditation forms, all aspects of the curriculum are seen to be interwoven, with a coherent approach. For instance, at the University of Luton (Atlay & Harris, 2000) the module templates set the operational context within which the students are expected to be working, in relation to knowledge and understanding, analysis, creativity and evaluation. Improving employability is concerned with complex learning, involving potentially years of practice and the space to make mistakes and improve judgment. Students need feedback that will prompt strategic thinking and reflection upon the situation. Atkins (1999) feels however, that if every student emerges with the same repertoire of employability skills, any market advantage would disappear.

However, this concern to enhance employability expects more of students. Students have to be hinted that they will need to learn how to represent themselves in the discourses of employability. The analysis of employability and its development need to assume ‘knowing’ students, which means having understanding on learning cultures that help them to know what they are learning and why, and that help them to know how to develop the claims to achievement that make them more employable. This is a final task for teachers, to design promising learning

environments and then help students to discover what they afford, what might be learnt, how and why (Knight & Yorke, 2003). University responses to this agenda typically should include modifications to existing course content (sometimes in response to employer suggestions), the introduction of new courses and teaching methods, and expanded provision of opportunities for work experience – all intended to enhance the development of employability skills and/or to ensure that the acquisition of such skills is made more explicit. In some cases, university departments have sought to ‘embed’ the desired skills within courses; in other departments, students are offered ‘stand-alone’ skills courses that are effectively ‘bolted on’ to traditional academic programmes (Coopers & Lybrand 1998). In fact, many university departments use a mix of embedded and stand-alone teaching methods in their efforts to develop employability skills (HEFCE, 2003).

In addition, Yorke (2001) believes that teachers in HE should appreciate how important self theories are for student learning, be able to infer where on the “fixed versus malleable” continuum students are, and should encourage students to move in a “malleable” direction. Dunne, et al., (2000) also suggests that curriculum change is only possible with a prior change in teachers’ attitudes, behaviours and beliefs. There is the added complication of an institution’s need to demonstrate that the programmes of study comply with requirements for benchmarking, professional and statutory bodies, level descriptors and academic review (Knight & Yorke, 2001). Further, employers and learners’ needs can be taken into account in formulating future skills assessments. This model helps existing systems to promote a framework for all learners to gain the important skills they need and to maintain purposeful employment.

Curriculum relevance can be tested from the development of *discipline-specific skills*. These are the skills traditionally included in university curricula to address specific occupational requirements. These skills originate in specific domains, disciplines or subject matter areas. For instance, a biochemistry graduate should have the ability to apply principles to biochemistry practice in order to design and carry out laboratory experiments. A graduate in statistics should possess the ability to apply appropriate statistical techniques to the analysis and interpretation of data (Bridgstock, 2009). Because the skills developed in career management programs are highly personal, applied and depend on reflective processes, traditional instructional methods are

unlikely to be as successful as more personally engaging methods. These may include activities such as role-plays, self-audits (e.g. of career skills), problem-based group work, work-integrated learning and peer review (e.g. of resumes or portfolios), strategies that tend to be time- and human resource-intensive and require extensive planning (Bridgstock, 2009).

Hence, when it comes to the engineering specific curriculum, its relevance to the world of work has a paramount importance because, as it was argued by Nguyen (1998), engineers are involved in the implementation, application, operation, design, development and management of projects and processes, although the type of work that engineers do will vary depending on the chosen field of study like Chemical, Civil, Electrical, Materials, Mechanical, Industrial, etc. Further, Nguyen (1998) explained that engineering is a profession directed towards the application and advancement of skills based upon a body of distinctive knowledge in *mathematics*, *science* and *technology*, integrated with *business* and *management* and acquired through education and professional formation in an engineering discipline. Engineering is directed to developing and providing infrastructure, goods and services for industry and the community (The Institution of Engineers Australia, 1993). From this perspective, engineering can be described as a broad field that embraces knowledge and training in business/management, science, mathematics, social science and (computer) technology.

In order for engineers to function effectively in a multidisciplinary environment, engineering curriculum must have the capacity to instill its graduates with skills and attributes from diverse areas (Nguyen, Pudlowski & Kerr, 1997) of Social Science, communication skills, social skills, presentation skills, interpersonal skills, Business/Management, leadership skills, business management skills, team-working skills, accounting skills, Computer/Technology, computer skills, programming skills, technical skills, design skills, Mathematics/Science, problem solving skills, research and development skills and analysis/synthesis skills. Although the technical demands of each of the engineering disciplines may differ, an engineer, irrespective of specialization, must be equipped with the soft-engineering (non-technical) skills to confront new challenges in the ever-changing and multidisciplinary field that constitutes engineering in today's global environment (Nguyen, Pudlowski & Kerr, 1997).

Nguyen (1998) further noted that engineers in the past were mainly concerned with the technical aspects of engineering, commonly known as hard-engineering. Times, and the roles of engineers, have changed however, and a shift in the paradigm of engineering is becoming more appropriate in today's environment. Although the shift involves a movement towards soft-engineering, the technical aspect of engineering is no less relevant, and technical skills formation remains at the core of engineering curriculum (Pudlowski & Darvall, 1996). Therefore, what has been changed are the dimensions of the core: equally important now is the inclusion of non-technical subjects as most engineers are to be working in a multidisciplinary environment (Duggins, 1998). The review of engineering education indicated that there are a variety of roles for professional engineers that need to be reflected in engineering curricula; these roles include: Engineering managers, who speak all languages; leaders in business, industry, society; The technically brilliant: researchers, technological innovators, specialists in particular fields; Systems engineers: experts in major system specification and design and the integration of a variety of engineering and non-engineering specialties; and Generalist engineers with a broad technical base and the ability to work across specialist boundaries.

To produce a modern engineer, the types of curriculum proposed for engineers are supposed to be focused on the following fundamental points in mind (Nguyen, 1998): the level of acquired knowledge of an engineer; the necessary skills of an engineer; the job requirements of an engineer; personal and professional attributes of an engineer; attitude and generic skills and attributes of an engineer (Pudlowski & Darvall, 1996). Similarly, technical knowledge and skills: practical ability, example, use of modern technology; intellectual skills: ability to learn and understand new information; attitudes: behavior, thoughts and actions; standards of engineering practice: awareness and observance of engineering codes of practice and ethics; understanding of the role of an engineer; and general knowledge of the working legislation and regulations; business practices: understanding of economic and financial issues, and ability to work within a business-orientated environment; international/national history and culture: understanding of other cultures and customs; and proficiency in languages: understanding other languages and familiarity with technical language.

Also, the pedagogy for engineers is supposed to be libertarian, authoritarian or somewhere in between but in all these cases it is a set of methods and procedures which have their source in the teacher. These methods are the means through which the educational aims are achieved, that is the means through which, it is hoped, the learners absorb new knowledge, understanding, skills, character formation or whatever it is that is prescribed in the aims of the pedagogy. The methods and procedures remain the preserve of the teacher: they are the means, the vehicle by which the teaching/learning takes place (Hinchliffe, 2006). As academics are held responsible for achieving the learning outcomes of their courses the pedagogy they apply and the curriculum content they use are to be driven by employability.

Any ways, even though no power is absolute, and there is limited evidence available on the extent to which imposed pedagogic regimes filter down to the classroom (Rebecca & Maria, 2010), if students are seeking an economic return in preference to an educational voyage of discovery then a degree becomes simply a means to an economic end. Thus, students-as-customers may develop a goal rather than process-oriented attitudes to their learning (Rebecca & Maria, 2010). Despite ongoing debate about whether they can and should, most higher education institutions include the development of employability skills within their curricula.

Meanwhile, a curriculum for employability, according to Knight & Yorke (2004) involves higher education students in developing: understandings about work; skilful practices (the deployment of skills in different and/or new situations); efficacy beliefs (legitimate self-confidence in one's capacities to achieve and succeed at work), as well as metacognitive capabilities. Knight & Yorke (2004) defines work-related learning as involving students learning about themselves and the world of work in order to empower them to enter and succeed in the world of work and their wider lives. Work-related learning thus involves higher education students in four interrelated areas of learning: learning about oneself – one's capabilities, confidence, life interests and career orientations (Efficacy and Metacognition); learning and practicing skills and personal attributes of value in the world of work (Skilful Practices); experiencing the world of work (or facsimiles thereof) in order to provide insights and learning into the world of work predominantly associated with the subjects of one's higher education studies (Understandings); and experiencing and learning how to learn and manage oneself in a range of situations, including (of course) those to be found at work and central to self management and development activities.

Work experience gained during work-based learning programmes such as formal placements and internships represented a significant aspect of many of the graduates 'experiences (Jane & Helen 2008). The nature of such work experience varied from country to country. Most of the UK graduates had undertaken a twelve-month-long period of formal paid work placements, whilst a few of the Austrian, Slovenian and Romanian graduates had undertaken a period of formal 'internship' (Jane & Helen, 2008). It was evident from the study that the UK graduates benefited greatly from participating in a twelve-month period of formal work placement. This placement afforded multiple benefits, providing a valuable learning opportunity during which theoretical skills could be applied to 'real-life' employment (Hesketh, 2000).

3.9 Study Behavior and Employment Opportunities of Graduates

The term study behaviour is equated with learning style by Moreland (2005). In his definition, learning style refers to a set of individual characteristics which are relevant for individual differences i.e. preferences in the learning process. It may be conceived as a relative stable trait of people. Researchers have identified various definitions for the term learning style. Saransin (1999:1) defines learning style as:

...a certain specified pattern of behavior and/or performance according to which the individual approaches a learning experience, a way in which the individual takes in new information and develops new skills, and the process by which the individual retains new information or new skills.

In addition, James & Blank (1993) described learning style "as the complex manner in which, and conditions under which, learners most efficiently and most effectively perceive, process, store, and recall what they are attempting to learn". How an individual inputs information, processes that information, stores the information, and then recalls the information is the "learning style" of the individual. One's learning style is individual, is to mean that while there are persons who have similar styles, each person has an individual spin to their particular style. Since growing emphasis is put on the importance of individual skills and differences for labour market functioning (Moreland, 2005), the existing concept and measurement of "learning styles"

from within the educational context may be valuable for analyzing differences in labor market functioning. Not only learning outcomes may be affected by differences in learning behaviour or preferences but also labor market outcomes as well. Since learning continues after entering the labor market, the concept of learning style may be important during the further stages of working life and it is possibly related to employability as well as work-related learning (Moreland, 2005).

The QCA defines work-related learning as:

Planned activities that use the context of work to develop knowledge, skills and understanding useful in work, including learning through the experience of work, learning about work and working practices, and learning the skills for work (Quality and Curriculum Authority, 2003: 4).

This definition is a useful starting point as it highlights the centrality of planned learning activities and experiences related to, and drawing upon, understandings about work through such learning opportunities as work placements and work-related projects. The definition also emphasizes the range of learning outcomes defined within work-related knowledge, skills and understandings as the basis for enhancing student entry and success at work in their adult lives.

At the same time, this definition does not go far enough to be sufficient for an employability curriculum in higher education. Employability in the ESECT project has been defined in a similar manner to QCA, as: a set of achievements understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen occupations (Yorke & Knight, 2003).

The concern of ESECT at the higher education level is, additionally, to facilitate the development of degree-level learning through an associated emphasis upon the reflective learning processes (Brockbank, McGill, & Beech 2002) and metacognitive capabilities often embodied in higher education learning outcomes (e.g. Young, 1999, Cornford, 2002, Glastra, Hake & Schedler, 2004). That is, many of the outcomes associated with work related learning are higher order metacognitive skills (Krathwohl, 2002) variously described as judgment (Hager 2000), reflection (Brockbank, McGill & Beech, 2002, Johns, 2004 & Brown, 2004).

Though it is possible to view the promotion of such judgmental and action capabilities within an employability strategy in HE as a ‘supply side’ strategy (Mills, 2002), the concern is not with traditional concepts of the ‘person-job’ fit (how far a person has the attributes required for a job), but also with the development of graduates who are active and empowered to seek out jobs and organisations that fit their preferences and characteristics. By doing this, work-related learning is concerned with the development of a graduate that better ‘fits’ the changing economic situation and evolving job markets in ways that assist the individual graduate to respond to society-wide developments effectively (Illeris, 2003). Whatever category of a learner in higher education is concerned with, there is the necessity that the study behavior of students is identified and addressed through different guidance services.

3.10 Labor Market Conditions and Employers’ Needs/Requirements

The status of labor market analysis and labor market policy in the development economics community is similar to the status of poverty analysis and anti-poverty policy two or three decades ago. Knowledgeable insiders in development institutions joined with outsiders in universities and think tanks to set the direction for poverty analysis and anti-poverty policy and show those who were not poverty specialists how to do good poverty work. Moreover, employment outcome is a significant factor in the distribution of economic and social benefits, and of social and economic advancement for individuals and their families. As such, governments and higher education institutions that espouse a concern for greater social equity will have further concern for the employment outcomes of higher education (Holmes, 2013).

Basically, macroeconomic conditions in the year of graduation have very persistent effects on one’s subsequent employment and earnings (Kawaguchi & Murao, 2014). In a recent review of unemployment in the ‘Great Recession’ across countries, Pissarides (2013) reports of employers continue to have difficulty finding suitably skilled workers. Although part of these difficulties are related to skill gaps and deficits in specific sectors, occupations and regions, they are mostly explained by factors other than skills, such as uncompetitive wages, unattractive working conditions, poor recruitment policies and/or mismatch between the location of skills and jobs. As

a result, many shortages could be addressed by changes in training and recruitment practices, as well as by facilitating labour mobility.

Moreover, there has evolved a significant body of research and policy literature that focuses on a group of perceived problems that besets education to labour market transitions for graduates (UKCES, 2014). The problems traditionally identified by both policy makers and researchers have included: Employer dissatisfaction with the education system's products (a lack of employability and work readiness among graduates); Extended and risky transitions; Job quantity and quality, including casualisation, entry level employment that has no training attached to it, temporary, part-time and agency working; as well as low pay, boring and/or unpleasant work, and lack of worker 'voice' and task discretion; Unemployment, allied to low levels of employer recruitment; Lack of subsequent progression – the trap of low-paid dead end jobs; Rising skill (qualification) levels of graduate workers not feeding through over time into underlying gross value added or productivity rates. This is coupled with a growing realization that the linkages between skill production and skill demand and utilization to create a competitive edge are much more complex and much less automatic than we used to like to believe; and Under-employment in terms of both working hours and skill mismatches and over-qualification (UKCES, 2013).

In this regard, The Global Agenda Council on Employment (2014) suggested that reducing skills mismatch with lasting effect and helping economies make the most of their workforce skills require collaborative effort from all stakeholders. First, action is needed to reduce the gap between knowledge generated in the educational system and the skills demanded by employers. Second, continuing intervention is necessary during the employment life cycle, targeting continuous skill development and use. Yet, The Global Agenda Council on Employment (2014) remarked that labour market policies should focus on building the human capital of the low-skilled unemployed. Thus, a shift is required from the "work-first" approach, often used inactivation strategies, to a "learn-first" process primarily through workplace learning, emphasizing the retraining or skills upgrading of job seekers with poor skills and low qualifications. In the current context of weak labour demand in a number of countries, this could potentially improve the match of job seekers' skills with those skills likely required by jobs created once the recovery strengthens.

For instance, in an investigation of labour market mismatches in the Netherlands, Allen and van der Velden (2001) find that ‘education–job mismatches’ (individuals holding jobs for which their formal qualifications are higher or lower than required) do not correspond closely with ‘skill–job mismatches’ (individuals holding jobs for which their skills are above or below those required). One possible explanation for this is that, within given educational qualification categories such as degree holders, there may be unmeasured differences in skills between individuals, and individuals deemed by employers to be relatively low-skilled may be less likely than others in their qualification group to be offered jobs that require their level of formal qualification.

In addition, the evidence from UK by Green & McIntosh (2002), revealed that ‘heterogeneous skills within qualification levels’ has been presented, mainly, as over-qualified (in terms of formal certification) for their jobs and being over-skilled (i.e. in their own evaluation, not making much use of their skills and abilities in their present jobs). Another proposition advanced by Allen and van der Velden is that the selection criteria used by employers when screening job applicants used to include factors such as work experience, gender and social background, which are distributed unevenly within educational qualification categories.

Further, Bennell’s evidence, discussed by Pritchett (2001), shows that wage employment grew by nearly the same number of people as the change in school enrollments in just two countries (Botswana and Zimbabwe). Likewise, the number of newly-educated individuals entering the labor force was four times as large as the growth of wage employment in Senegal, Kenya, and Malawi, and between ten and twenty-nine times larger in Lesotho, Burkina Faso, Ghana, Uganda, and Sierra Leone. Consequently, Holmes (2013) feel that the marginal social benefits of education may be greatly overstated by the standard methods, at least in these particular African countries. The policy conclusion that comes out of this line of research is that economic growth should be sought as a way of improving labor market conditions, thereby enabling workers in general and the poor in particular to attain higher material standards of living (Field, 2007.).

Developing country labor markets exhibit low unemployment and substantial working poverty (ILO, 2007). The usual explanation offered for these facts is that workers in poor countries cannot afford to remain unemployed for very long, so unless they have a better option, in order to earn cash quickly, the majority of them take up wage-employment or self-employment in the

informal sector. It is believed that this explanation, proposed long ago in ILO (2007) and Hart (1973), is essentially correct. The informal sector thus plays the role of a free-entry or fallback sector for those who cannot obtain formal sector jobs. As Reynolds (1969:91) put it early on, “The urban trade service sector . . . is a relatively open sector in the sense that, with little skill and little initial capital, a newcomer can crowd his way into employment. It is thus a natural entry point to the urban economy for migrants from the countryside.”

There is a lack of a common language of skills between HEIs and employers (Dunne et al., 2000). Part of the problem with the skills agenda and initiatives in HEIs is the assumption that ‘skills’ has the same meaning in the education context as the employment context (Holmes, 2001). This is not necessarily true. The relationship between the employability-development opportunities provided by the HEIs and the employment of the graduate is complicated by the role played by employers who convert employability into graduate employment (Harvey, 2001). For some employers, the degree subject studied is not as important as the graduates’ ability to handle complex information and communicate it effectively (Knight & Yorke, 2000). Graduate recruiters want a variety of other skills, personal and intellectual attributes, rather than specialist subject knowledge. Oral communication, teamwork, self-management, problem solving, leadership (Warn & Tranter, 2001) – employability skills are all-important. Employers increasingly want graduates who have self-theories that are marked by confidence, optimism, and a belief that they can make a difference. Employers want graduates who can adapt to the workplace culture, who can use their abilities and skills to evolve the organisation and who can participate in innovative teamwork (Harvey et al., 1997; Little, 2001). Employers also value critical thinking (reflection) as this is required for innovation and anticipating and leading change (Harvey et al., 1997).

According to (Weligamage, 2006), graduates from universities should compete with professional qualification holders in a job market where employers prefer to recruit professional qualification holders which can be taken evidence from job advertisement. Therefore, there is a need to match the skills of university graduates with the needs of the industry if they are to be successful in the job market. Brown and Scase (1994: 133) argue that employers make their selection decisions not only on ‘capability’ but also on ‘acceptability’. They present a set of quotations from interviews with graduate recruiters, stating that what these:

...reveal is that the whole question of acceptability is intimately connected to the recent emphasis on personal and transferable skills within higher education . . . [highlighting] the increased significance attached to social as well as academic qualifications.

Such employers operated on the basis of a hierarchy of universities, such that anyone from a university lower down that hierarchy, or not even ‘on the list’, would most likely be screened out of the selection process at a very early stage (Weligamage, 2006)

However, Little (2001) raised the issue of whether employers behave rationally when recruiting graduates and suggested evidence to the contrary, a view supported by Brown, Hesketh, and Williams (2003). According to Moreau & Leathwood (2006) employers may want, for example, someone who is strong and decisive, but they will inevitably read these qualities differently in different applicants’. As a result, employers continue to report that graduates are not ready for the world of work, and lack some of the most basic skills needed for successful employment (Sue, 2006).

According to the perceptions held by employers’, graduates are more academically oriented while lacking awareness on latest developments and applicability skills when compared with the professional qualification holders (Weligamage, 2006). Earlier, Frye (2000) in Moreau & Leathwood (2006:319) introduced a supply and demand model comprising three main components as employers’ demand for skills, providers’ supply of education and training opportunities and learners demand for skills. This model identified following matches and mistakes: Employer demand-provider supply: the mismatch between employers’ demand for particular skills and the flow of skilled people arising from provider supply; Learner aspirations-employer demand: The mismatches between what learners aim to achieve through education and training and the skills need of employer; and Provider supply-Learner aspirations: the mismatch between courses offered by providers and the expectations and needs of learners. There is not necessarily agreement over whether there is a ‘skills gap’ or how big it is if it exists (Dearing, 1997).

CVCP (1998) in Little (2001) noted that it was difficult to find any hard evidence that employers actually preferred graduates who had received employability skills training over those who had not. Holmes (2001) suggests that employers do not want to recruit graduates with skills *per se*, rather that they require competency and effectiveness. Nonetheless, Atkins (1999) suggests that there is no reason why employers should have a common set of skills that they require graduates to develop as this may vary with region, size of business and type of business-market orientations. Consequently, Morley, (2001) suggests that the concept of ‘employer-ability’ needs to be developed to balance out the power-relations embedded in the employability discourse of recruitment and retention. She implies that the education process should also encompass employers so that they are more sensitive towards issues of difference such as race, class, gender, sexual orientation and disability.

Other studies have involved employers in an attempt to identify stakeholder expectations of university graduates. Bennett et al. (2002), in a project for the UK Economic and Social Research Council, explored employers’ perspectives on the role of generic skills in the workplace and the different uses, purposes and contexts for their development in the first few years of graduate employment. They found that there was widespread confusion among university academics in the nature and purpose of generic skills in higher education, and that employers and employees alike had varying understandings of their importance in the workplace. Significantly, the data they gathered from new graduate employees showed, as they explain (Bennett et al., 2002: 20), that:

The most important sources of employee learning derived from the challenges of the work itself and from interactions with others in the workplace. For example, graduate employees identified that the major skill to be learned was to ‘fit in’. This meant adapting to cultural expectations and organizational pressures, and learning the ‘language of the job’, and such differences in context and demand affected the skills used.

With remarkable consistency, the reports emphasize employers’ stated needs for graduates to be able to function in the workplace, be confident communicators, good team players, critical thinkers, and problem solvers and, in addition, to be adaptive, adaptable and transformative

people capable of initiating as well as responding to change (Harvey et al., 1997). Even though the desirable graduate attributes stated by employers in these lists vary little from those of the 1970s (Harvey, 1999), it appears that the lists are getting longer and longer, and more and more complex. Whether or not employers have set unrealistic expectations and whether or not they are even clear in their own minds about what they actually expect from a new graduate is open to debate. Given that jobs in this century will be vastly different from any that have preceded them, perhaps it is time for employers and universities to reconceptualize the kinds of generic skills and abilities that are considered necessary for the new graduate. For example, Harvey and colleagues (1997) found that employers want graduates with knowledge, intellect, willingness to learn, self-management skills, communication skills, team-working and interpersonal skills, but the Association of Graduate Recruiters (1995) suggests it comprises 'career management skills and effective learning skills': self-awareness, self-promotion, exploring and creating opportunities, action planning, networking, matching and decision-making, negotiation, political awareness, coping with uncertainty, development focus, transfer skills and self-confidence.

Massification and the consequent widening of participation means that many employers are now recruiting people as graduates to posts that would have previously been filled by school leavers (Brown, et al., 2003) who required long and expensive basic training. More so, even in those jobs traditionally filled by graduates, employers might now expect to have a lower training bill post-recruitment. This displaces training costs onto the individual (via the costs of their HE) and also potentially relieves the employer of having to offer salary rewards which match supply conditions – because they can manipulate supply at no cost to themselves (Brown et al., 2004). Employees instead have to take a more flexible and proactive approach to their working lives, involving the management of their own employability (Tomlinson, 2007). Additionally, it is employers who ultimately convert graduate employability into employment, and there are a number of factors that mediate the employment process, including the type of higher education institution attended, mode and subject of study, age, ethnicity, gender, and social class (Harvey, 2001).

The more recent work of Brown & Hesketh (2004) has focused in part on the way graduates attempt to manage their employability during their initial stages in the labour market. In their

study, graduates who developed a 'player' approach to their employability management were more likely to shape themselves and their credentials around what they perceived companies would require and value. This involved an attempt to 'package' their profiles in accordance with their understanding of employers' demands.

In most of the countries, government organizations give attention on identifying this skills requirement, for instance, the Australian Chamber of Commerce and Industry and the Business Council of Australia (2002) had taken pioneer attempt to discover what employers really looking from their workers. According to the Employability Skills Framework presented by the organization, employers have mainly given attention on personal attributes which will mainly contribute to overall employability. Personal attributes maintained in this framework are loyalty, commitment, honesty and integrity, enthusiasm, reliability, personal presentation, common sense, positive self esteem, a sense of humour, a balanced attitude to work and home life, an ability to deal with pressure, and, motivation and adaptability.

Moreover, the main skills requirement mentioned in this framework are communication, teamwork, problem solving, planning and organizing, technology, learning, self management, initiative and enterprise skills. Similarly, many of the businesses had suggested that educators should review and redevelop their curriculum and change delivery methodology to support the development of these skills and attributes. In relation to this, Vidanapathirana (2000) studied employability and job expectations of university students using a sample of 68 undergraduates to ascertain the extent employability and expectations affect job opportunities of educated youth. The findings confirmed the view that there is a mismatch. The author claims —the more person has been educated, the greater the likelihood that her or she may be unemployed. This situation arises out of high rate of entry to the labor-force on one hand, and the relatively sluggish expansion of the economy.

Therefore, the expectations of employer groups in relation to university education appear to be strongly influenced by highly context-bound interpretations of desirable graduate attributes, capabilities, competencies and the like (Atkins, 1999; Bennett et al., 2000; Gallagher, 2000; Harvey et al., 1997). Equally, it is clearly unrealistic for universities to guarantee that their students will graduate in possession of all the desirable generic skills and attributes spelt out in their institutional documentation. Such guarantees would, in all likelihood, leave universities

vulnerable to litigation in the most extreme cases (Clanchy & Ballard, 1995). However, what universities *should* guarantee is that their students will all have the opportunity to learn and develop generic skills and abilities during their undergraduate study. How well they do this depends largely on individual attitudes and motivation, not only of teaching staff, but also of students themselves.

In any case, employers of labour force are not only interested in those skills possessed in higher education but also practical skills appropriate for job fulfillment (Abiodun, 2010). However, (Samuel, 2012) found out that it is quite unfortunate that responses of employers of labour on the competencies and performance of graduates reveal that these characteristics are lacking in the graduates which tertiary institutions are turning out into the labour market. Although, many employers reiterate that the graduates possess a broad and respectable understanding of the cognitive base in technical disciplines, but they express dismay in the preparation of graduates in those applied technical skills necessary for solving problems and enhancing business productivity.

3.11 The Relationship between Socio-Bio Graphic Back Ground and Graduate Employment

Studies conducted around the world incessantly reported that students' performance and work opportunities are depending by socio-biographic backgrounds and other related factors (Anwar, Annesha & Aminul, 2012). However, the word 'socio-biographic background' has been used by various researches with diverse meanings in several contexts. As to the findings of Brown and Hesketh (2004), there are inequalities amongst graduates in their labour market outcomes. They show that many graduates are not utilizing their knowledge and skills from their higher education, that not all are able to 'cash in' on their investment in higher education, and that there are still 'positional' differences between graduates on the basis of social class, gender and ethnicity (Tomlinson, 2007).

Consequently, it is argued that the socio-biographic background which includes personal background and income level of the parents and education level of the father and the mother (Acemoglu & Pischke, 2001) can also contribute for graduate employment. To the same authors,

income is important as a poor parent cannot afford to send his/her child to a good school where tuition fees are higher, and cannot afford good books, food and undisturbed study time. Moreover, a child may have to work with parents to supplement their income. In their study, (Sotnik et al., 2010) perceived a family environment that encourages a particular level of educational and occupational achievement playing a more significant role. Out of personal background, gender was explained to be the most important determinant to pursue higher education and job security (Acemoglu & Pischke, 2001). To this reflection, Anwar, Annesha and Aminul (2012) reported that female students are more vulnerable and have less access to formal knowledge and employment. As regards, past records of their educational achievements (especially secondary school and higher secondary school CGPA) show their aptitude level and knowledge base. This implies that a good student at secondary and higher secondary level can perform better at the undergraduate and graduate level as well as on the job markets.

In a study of 1993 leavers from pre-1992 universities, Smith, McKnight & Naylor (2000) find that the probability of student-leavers being employed within six months after graduation is positively related to the class of degree and is also strongly influenced by the subject studied, measures of prior educational attainment (such as A-level point scores), age at graduation and social class background. Most of these factors are also found to strongly affect the probability of student-leavers in employment being in a 'graduate occupation', although age at graduation has only a weakly significant effect for female graduates and has no significant effect for males.

Furthermore, as argued by Harre (1983), to be successful in the labour market, an individual must become a graduate, not just in the formal sense of being awarded a degree but in socially and biographically significant terms, whereby they act in ways that lead others to ascribe to them the identity of being a person worthy of being employed (i.e. in the kind of job generally considered appropriate to someone who has been highly educated). The individual characteristics include gender, age on entry, ethnic group, degree classification, subject of study, whether he/she participated in a sandwich training placement and whether his/her parents reside in a 'low HE participation' neighborhood (Allen & van der Velden, 2001).

In addition to this, Anwar, Annesha & Aminul (2012) reported that children attainment depends on the social investment in children; the parental investment in children; and the choices that

children make, given the investments in and opportunities available to them. In relation to this, Guimarães & Sampaio (2011) identified some common determinants of students' performance, the most common factors are those related with human capital of the parents. The human capital of the mother is usually more closely related with the attainment of the child than is of the father. The income level of the family is positively associated with educational attainment of students. According to Acemoglu & Pischke (2001) family income explains differences in the enrollment rates of children in a four-year college education and subsequent employment. These effects are different between rich and poor family. Woessmann (2004) confirmed that family background has strong and similar effects on both Europe and USA. In contrast, Pedrosa, et al. (2006) reported that students coming from disadvantaged backgrounds, in both educational and socioeconomic aspects, have a higher relative performance than their complementary groups. This can be considered as a phenomenon which the authors named as "educational resilience".

Additionally, employability concept currently considers factors such as achievements, competencies, attitudes and social-economic backgrounds, which most of the private sector use in making selection decisions (Vidanapathirana, 2001). An achievement includes results, graduate rank, winning university colors, and the age of candidate. Competencies include communication, decision making, leadership and team work. Attitudes cover values, orientations and outlook of candidates. Socio economic statues deal with affiliations, family status. Regarding this fact, Guimaraes & Sampaio (2011) conducted a study on the impact of family background and students' achievement on the university entrance exam and career prospects. Their study describes the Brazilian experience and it considers personal characteristics such as age, gender, race, religion, family income, parents' education and family size, school attended, tutoring classes, among others. The study found out that family background and study environment are the key determinant factors of students' achievement and career prospects. The study further revealed that parental background; particularly mothers' schooling positively impacts students' performance. Other important variables are family income and students' personal characteristics. The same impact could happen to the labour market. However, according to (Harvey, 2001), it is only a superficial indication because, even with a 'rational' approach, there is a range of factors that mediate the employment process, irrespective of the opportunities afforded learners in their undergraduate programme of study. These could include:

- i. Type of higher education institution: A definite 'pecking order' of higher education institutions persists amongst graduate recruiters. Some institutions have good graduate employment rates because of their reputation but that may have more to do with employers' perceptions that the 'best' students go to the institution rather than perceptions about how well students are developed at them.
- ii. Mode of study: If, for example, part-time undergraduates, who are concurrently employed full-time, are included in employment rates, then this clearly distorts statistics as the fact that they are in employment is not the result of their higher education experience. On the other hand, not to include such students, ignores the employability enhancement that the higher education experience may have had for the graduate.
- iii. Student location and mobility: Not all graduates, for various reasons, are mobile and employment rates are therefore contingent on the vibrancy of the local economy. Furthermore, some employers are wary, for various reasons, of employing graduates from particular parts of the country. For example, one major employer in the West Midlands avoided targeting universities in London because they were of the opinion that London-based graduates would not settle in the West Midlands.
- iv. Subject of study: There are well documented variations (a) in employment rates of graduates from different disciplines (Purcell et al., 1999), (b) discipline differences in time lags between graduation and employment, and (c) discipline differences in the type of job that is desirable. In art and design, for example, not only is the time to 'graduate' job after graduating longer than in many other subjects, almost a third of graduates undertake some form of self-employment for at least part of their time (this is far more than in any other discipline area) (Blackwell & Harvey, 1999). Some of this self-employment represents the pinnacle of a desirable job; some of it is out of necessity because of the nature of the design industry. However, this is not easily identified in such things as first-destination returns. Thus, subject mix will considerably influence the employment rates of an institution's graduates. Some institutions have good employment rates because they specialize in areas that have good rates anyway, such as pharmacy, computer science, mathematics, and optometry.

- v. Previous work experience: Prior experience is a major factor for many recruiters, especially small and medium enterprises. In the main, this is experience as a result of previous work, whether a previous full-time job or extracurricular work undertaken on a part-time basis by graduates. This is experience independent of the institution of study. However, graduate recruiters are increasingly attracted by new graduates with work experience as part of their programmes of study (Harvey et al., 1997a, 1998).
- vi. Age: Graduates are discriminated against by recruiters on the basis of their age (Harvey et al., 1997; Purcell et al., 1999).
- vii. Gender: Females still face the 'glass ceiling' and are underrepresented at senior levels in organizations. However, they are recruited in larger proportions than males in many organizations (Harvey et al., 1997; Brooks, 1997).
- viii. Social class: Social class continues to affect employment opportunities because it is so entangled in access to educational opportunities, the ways they are experienced and the opportunities for extracurricular activity and social networks that develop (Brennan et al., 1996).
- ix. GPA: Grade Point Average (GPA) has long been the standard measure of academic achievement, and it has been assumed by many to be directly related to overall intelligence and career potential. In relation, Schmidt (2002) has to say that given the overwhelming evidence of the strong link between cognitive ability and job performance, it is not "logically possible to have a serious debate" about whether GPA is important. To Schmidt, the overall "intelligence" and job performance are "strongly related". On the other hand, Barada says that unless it is "horrible," GPA should not be the primary consideration in selecting job applicants. Barada (2006) believes that communicating clearly, logically approaching and solving problems, and "thinking on your feet" are more important than intelligence or GPA. Just as there are many researchers who are strongly tied to their opinions of "direct relationship" and "no relationship," one can find still other researchers who believe that more study is needed in order to determine if there is any relationship between GPA and job performance. A recent study at East Carolina University concluded that although high school GPA is a

relatively reliable predictor of college success, more investigation is needed in order to develop any prediction regarding how GPA might predict future job performance (Abdel-Salam, Kauffmann, & Williamson, 2005).

Therefore, graduates who developed a 'player' approach to their employability management are more likely to shape themselves and their credentials around what they perceived companies would require and value. This may involve, according to Tomlinson (2008) an attempt to 'package' their profiles in accordance with their understanding of employers' demands.

CHAPTER IV

THEORETICAL AND CONCEPTUAL FRAME WORK

4.1 Theoretical Framework

There are a number of labor market theories. However, the theoretical frame work informing this study followed the main issues considered by human capital, labor market segmentation theory, signaling theory, search and matching theory, status attainment theory and social capital theory.

4.1.1 Human Capital Theory

The human capital theory was articulated by Becker (1964) who, following Adam Smith's footsteps, saw job seekers pursuing education to increase their capability to produce and, in turn, receive higher profits. It was argued that employers used duration and quality of formal education of job seekers as a proxy for their capability to produce and paid them accordingly. Frank & Bemanke (2007) added that human capital is an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker's marginal product.

The theory asserts a positive relationship between investments in the development of human beings and economic growth (Weber, 2002). The idea of investment in skills and knowledge is paramount. The human capital theory views skills as commodities and operates around the notion that an individual will choose to invest in his/her own education on the basis that such an investment will result in enhanced marketable skills (Marimuthu, Arokiasamy and Ismail, 2009). These skills will be recognized by a demand in the labour market as technological advances require a better-educated workforce for the productive system to operate effectively.

Within the human capital theory, emphasis was placed on formal education out of quantitative convenience and this was emphasized out of the belief that higher education may be used as a proxy for improvements in other aspects of a person's life, such as, for example, health (Schultz, 1963; in Center for Development Studies, 2010:20). In this context, the primary purpose of HEIs becomes that of preparing graduates for their occupational lives by equipping them with the

necessary skills (Frank & Bemanke, 2007). In this regard, HEIs is expected to be the most successful in terms of productivity, growth and innovation, thereby boosting human capital.

Human capital theorists argued that both industry owners and students are considered self-interested individuals who seek to maximize returns on their respective financial investments by making themselves more marketable through higher education (Davenport, 1999). Davenport further explained that students are future workers who believe that the acquisition of work-related knowledge and skill translates into enhanced economic return. In this regard, a report from Treasury puts it succinctly “Human capital directly increases productivity by raising the productive potential of employees. [. . .] Improving skills and human capital in HEIs is very important in promoting growth” (HM Treasury, 2000:26). Human capital theory also argues that human capital education, with its focus on labour market preparation, potentially undercuts the traditional social, ethical and democratic objectives of education by viewing graduates as passive learners who are prepared for globalization (Robertson, 1998).

As to Buck & Barrick (1992), human capital education emphasizes *generic (employability) skills, rather than specific (technical) abilities* to address current labour market needs. In other words, employability skills such as critical thinking, problem-solving and a positive attitude towards occupational change are not job specific but transferable among a range of occupational contexts. In the context of this study, marketable as well as employability skills may include mastery of ones own discipline, multidisciplinary knowledge, ability to rapidly acquire new knowledge, teamwork skills, computer skills, research skills, time management skills, interpersonal and communication skills and emotional intelligence, critical thinking skills, creative thinking and visioning skills. This implies that a person should possess a range of skills that can be applied to a variety of jobs because society is now faced for social, technological and economical changes. The graduate has to adapt to and capitalize on these changes by demonstrating the value that their work can add to an organisation. This is imperative to the fulfillment of a satisfying and productive life.

Further, human capital theory promotes the idea that education is a very powerful individual and social lever (Vandenberghe, 1999). The theory thought that learning is the vehicle through which knowledge and skills are developed and maintained. This translates into better-educated people

and nations earning more and prospering at a faster rate. Thus public investment in education should be able to reduce income inequality and eradicate poverty. Sugrue (2004) added that in the new economy, work is primarily intellectual and human capital is a competitive advantage for both organizations and nations because it represents the knowledge and skills of the workforce. Human capital theory is used as a guiding theory of this study.

Nevertheless, a number of weaknesses have been identified in human capital theory. For instance, its claim that job-search success depends solely on the quantity and quality of education suggests that job-seekers are otherwise homogeneous beings. Another weakness noticed by Granovetter (1981; in Center for Development Studies, 2010:20) is that the theory ignores the fact that education is usually used only as a base during the candidate selection process, with employers often using recommendations and other credentials to make their final selection. The theory is also condemned for ignoring the fact that investment into education paying off also depends on actual demand for whatever enhanced skill the individual has achieved through furthering her/his education and whether or not the job seeker will have a chance to be matched to this demand. Other critics also noted that education does not always provide knowledge and skills immediately applicable to work and, therefore, that there must be other attributes that employers look for. From the criticisms forwarded against human capital theory, the sole use of it, is believed to make this study incomplete and looking for additional theories is found to be important.

4.1.2 Labor Market Segmentation Theory

Labor market segmentation can be defined as the historical process whereby political economic forces encourage the division of the labor market into separate submarkets, or segments, distinguished by different labor market characteristics and behavioral rules (Reich, Gordon & Edwards, 1973; in Bauder, 2001). The theory of segmentation in the labor market separates the labor market into a primary and secondary, formal and informal, or high value added and low value added segments and considers the differences. As an example, jobs within the primary segment are considered to be much better than secondary jobs, providing significantly higher wages, better working conditions employment stability, opportunities for advancement, equity, and due process in work rules. Jobs within the primary segment demand and develop stable

working habits, include on the job training, pay higher wages, and allow for upward job mobility. On the other hand, jobs in the secondary segment do not require stable working habits and even discourage them, offer lower wages, have high turnover rates, and seldom allow for upward job mobility (Center for Development Studies, 2010:26).

Practically, labor market segmentation theory challenges neoclassical economic theory and human capital theory on the grounds that workers and jobs are not matched smoothly by a universal market mechanism. Instead, it suggests that jobs and labor are divided into labor market segments (Bauder, 2001). Dickens & Lang (1992) identified two crucial elements of segmented labor market theory. First, the labor market can be usefully thought of as being made up several distinct segments with different rules for wage determination and employment policies. Second, access to jobs in at least some sectors at some times is limited in the sense that more people want jobs than there are jobs offered. Thus there may be queuing for these jobs either in the form of unemployment or job queues among employed workers or both. On the other hand, segmentation may arise from particularities of labour market institutions, such as governing contractual arrangements (segmentation along permanent/temporary nature of employment contracts), from lack of enforcement (segmentation along formal/informal line), as well as types of workers concerned (such as migrant and non-migrant workers) (ILO, 2013).

Segmentation theorists have also argued that labor market segments are able to function relatively independently because both jobs and workers are divided by demand-side and supply-side processes. In this context, the supply-side refers to attributes of labor, such as education, job skills, occupational preferences, etc. Labor demand relates to the characteristics of jobs, such as skill and educational demands, employment stability, wages, etc. Segmentation theorists have argued that labor market segments are able to function relatively independently because both jobs and workers are divided by demand-side and supply-side processes. In this context, the supply-side refers to attributes of labor, such as education, job skills, occupational preferences, etc. Labor demand relates to the characteristics of jobs, such as skill and educational demands, employment stability, wages, etc. (Gordon et al., 1982; Lee & Loveridge, 1987; in Bauder, 2001).

On the demand side, Reich et al. (1973: 361) argued decades ago that ‘. . . employers actively and consciously fostered labor market segmentation in order to “divide and conquer” the labor force.’ Demand-side approaches remain popular especially as explanation for spatial divisions in the labor market. For instance, the segmentation of inner-city minorities in the USA is often seen as an effect of industrial restructuring and decentralization of employment (Wilson, 1987; Scott, 1990; Kasarda, 1990; 1993; Skinner, 1995; Holzer, 1996; in Bauder, 2001). This demand-side approach expresses spatial divisions in the labor market as an accessibility issue whereby segmented jobs are unevenly arranged in space and simply not available in some places like inner cities). However, employers’ recruitment criteria (labor market signals) are better concerned by signaling theorists (Ellwood, 1996; Cooke, 1996; Holloway, 1998; & Zhang, 1998). Therefore, with regard to this study, since labor markets as well as employers are segmented in to public private sectors, and self-employment basis; besides their segmentation into a primary and secondary, formal and informal, or high value added and low value added segments, the application of this theory as a lens of examination is found to be unquestionable

4.1.3 Signaling Theory

Spence (1973; in Center for Development Studies, 2010:20) was among those academics unconvinced by the human capital theorist’s claim that education increased productivity. Instead, Spence saw education as a formally-verifiable test of a job seeker’s intrinsic intellectual capability, and believed that job-seekers’ pursuit of education was an effort to signal to employers this intrinsic capability, and not increase their productivity, Spence (1973; in *ibid*) further explained that employers make hiring decisions in an atmosphere of uncertainty. The employer has a collection of personal information about the job seeker based on which the employer is to determine whether s/he should hire the candidate and for what wage. A portion of the personal information is fixed (age, race, sex, etc.), and a portion is flexible (education, work experience, etc.). This referred to the flexible information as signals and pointed out about open situations for manipulation.

Both theories: human capital and signaling have little to say about the matching process and about the fact that knowing how to search for work is a key component of intellectual capability. Human capital is viewed as an input in the production process (Bird & Smith, 2005). The leading

alternative is to view education purely as a signal. What, exactly, is a signal? Different authors have used the term signal in different ways and there has been considerable ambiguity and disagreement about terms (John & Harper, 2003). In the context of the graduate labor market, qualities can be almost anything: average grade point, competency, honesty, suitability, etc. Not everything that are used during recruitment to infer hidden information is a signal. Cues are "any feature of the world, animate or inanimate, that can be used ... as a guide to recruit employees (John & Harper, 2003). An employer wants to determine before making a hiring decision whether a candidate will be successful or not, and relies on signals such as a resume, references, and the candidate's actions and appearance to predict suitability for the job (DEHEMS, 2012).

This study considers signaling theory because the issue of employers and recruitment criteria as signals is the very concern for signaling theorists besides to labor market success. In the context of this study, labor market success is considered in terms of being employed before six months' period of time. The transition of HE graduates from education to the labor market is characterized by several processes. One of the most appealing is the transfer of knowledge as a result of the information process learning towards the adaptation of these skills for particular situations (DEHEMS, 2012). In this way, the early career of higher education graduates is often accompanied by the so called 'matching' issue referring to the compatibility between individual, education and professional destination. In regard, this study concerns to the subsequent search and matching theory so as to address the issue of job search or transition besides to some socio-biographic background factors.

4.1.4 Searching and Matching Theory

The principles of search theory apply to any situation where the objective is to find a person or object contained in some geographic region in the most efficient manner (Cooper, Frost & Robe, 2003). In this context, "efficient" means minimizing the time required to find the search object while maximizing the chances for finding it with the available resources. The theory of search and matching resulted in a new empirical approach to labor market studies (DEHEMS, 2012). It is because, it stressed that not only the characteristics of labor supply (age, gender, education, employment experience, search intensity etc.) play a role in determining one's labor position, but also labor demand factors (sector-specific i.e., public, private and self-employers) are very

important. On the side of methodology, empirical studies more and more often use a time-dependence perspective. It is argued that one's current status in the labor market may be in part explained by the time spent and/or previous history. For instance, in the study of unemployment it is important to take account the actual time spent in the current state (longer unemployment may lead to higher human capital depreciation, but also the intensification of search if unemployment benefits diminish over time). Another important aspect of this theory is the matching of graduates' skills to employers' needs (DEHEMS, 2012).

Although searching and matching theory explains among other things, job searching, labor market conditions and some socio-biographic background factors, some issues still remained for further explanation in this area, e.g., job searching methods and some socio-biographic factors like parental income and educational status. Writers like Marimuthu, Arokiasamy and Ismail (2009) commented that to increase our understanding on the job searching process, research should reconcile methods of networking.

The theory of search and matching postulates that candidates who are better matched to the labor market conditions tend to find jobs much sooner and have higher bargaining power. In the context of this study, labor market condition includes the macroeconomic condition (i.e., the number of new jobs created by economic expansion/large quantity of jobs in the labor market), civil-service employment requirement policies and labor market regulations (e.g., affirmative action), and education-job matches (i.e., the complementarity between labour market and educational policies). Thus, this study also considered search and matching theory.

4.1.5 Status Attainment Theory

Status attainment theory identifies job search success, or rather a job-seekers' educational level, which in turn ends up correlating the individual's social status with the occupational, educational and income levels of her/his parents (Duncan, Featherman, & Duncan 1972). The theory is somewhat of a cross-breed between human and social capital theories. While it sees intellectual capability as being extremely important, the theory perceives a family environment that encourages a particular level of educational and occupational achievement playing a more significant role. In particular, this has been found to be the case with women, whereby women

holding full-time jobs often tend to be from a family of higher status than working men. An outcome of status attainment theory is socialization theory, which lays importance on the socialization process, i.e. the learning of culture. In this way, family, social networks and educational institutions contribute to the socialization process and influence job options (Center for Development Studies (2010:24).

4.1.6 Social Capital Theory

Hanifan (1916:130) invoked the concept of *social capital*, describing it as: those tangible substances [that] count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit. If [an individual comes] into contact with his neighbor, and they with other neighbors, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community. In relation to this, (Sotnik, et al., 2010) argued that family, social networks and educational institutions contribute to the socialization process and influence job options.

Hence, the idea that social networks have value led to the concept of social capital. Bourdieu (1979, 1980; cited in Center for Development Studies, 2010:24) argued that while network exchanges usually lack specified obligations, time horizons, and reciprocity expectations, they are nevertheless exchanges of value. In this sense, social relations can be seen as investments, with the worth of one's social capital depending on the usefulness of one's social network in achieving particular goals. In a way, one's individual social capital is access to others' capital, such as knowledge or influence. Therefore, social capital is access to those with valuable capital. Bourdieu (1985), who is the originator of the term, made it clear that its meaning contains two components – the social relationship that allows access and the usefulness of the relationship. Social capital is thus linked to human capital at another level by linking employee development and organizational performance to include job searching as part of a larger set of human resource practices (Marimuthu, Arokiasamy & Ismail, 2009). The letter and spirit of social capital have a long intellectual history in the social sciences (Platteau, 1994 & Woolcock, 1998), but the sense in which the term is used today dates back to 80 years ago.

In the context of job searching and graduate labour market, *social capital* is used to refer to the *social ties or networks* one uses to obtain job information or introductions to employers (Granovetter, 1994; Lin, Ensel & Vaughn, 1981a; Marsden & Hurlbert, 1988). In relation, Bourdieu in Sotnik, et al. (2010) argued that while network exchanges usually lack specified obligations, time horizons, and reciprocity expectations, they are nevertheless exchanges of value. In this sense, social relations can be seen as investments, with the worth of one's social capital depending on the usefulness of one's social network in achieving particular goals. This is further explained by Woolcock (1998) who proposes four dimensions of social capital: firstly, horizontal associations; secondly, social ties within communities; thirdly, the relationship between civil society, and fourthly, the state and the quality of governing institutions. These are some of the resources for which to strive in order to ensure sustainable futures in a changing socio-economic environment.

Brinton (2000) also mentioned two types of social capital: *private social capital and institutional social capital*. In private social capital, the individual has access for jobs through his or her personal networks, e.g. internet, friends or acquaintances, family relationships and personal relationships with employers whereas in institutional social capital the individual has accessed for jobs by virtue of belonging to a particular organisation, e.g. higher education institutions and agencies or advertisements in news paper and notice boards. However, in order to minimize institutional social capital, charges of systematic bias and unfairness against some groups of individuals gradually led to the development of legal provisions that require broad advertisement and an open application process for academic and most other types of jobs (Brinton, 2000).

Granovetter (1994) also found out that many studies demonstrated that the overriding mechanism through which individuals find jobs is through their own social capital or "connection" a case in point is the U.S. He absolutely argued that this reliance on social networks means that HEIs play an insignificant role in matching workers to jobs. Instead what matters is the individual's own stock of social capital. Both positive and negative points of contention emerge from this argument as a result. If a graduate is outgoing and open, then he/she may be able to establish social "contacts" whereas others who are reserved and unable to easily communicate possibly due to their own inhibitions, may find it difficult to build up their own social capital. Unfortunately, the reserved graduate may be a highly competent individual who has just not been

noticed. This reliance on social networks suggests that HEIs play an insignificant role in matching graduates to jobs.

Accordingly, social capital theory was considered in this study to have an insight towards socio cultural as well as socio biographic factors. In this regard, one of interesting argument was postulated by Holzer (1987) who claims that people's own social networks will often be closely tied to their socio economic as well as socio biographic background factors. Socio-biographic background includes parental income and educational status of the mother as well as and the father (Teichler, 1998). These are factors which may prevent or encourage educated people so as to move into better jobs (Holzer, 1987). Social capital in these times is essential for both professional success as well as organizational advancement. In this regard, Falk & Harrison (1998) outlined four key benefits of social capital in the national context: a) Social benefit, relating to such learning progresses overcoming dissatisfaction with narrow economic views of the achievement of a civil society. b) Economic benefit, adding value to economic outcomes through enhanced efficiency and sustainability as a result of effective learning processes. c) Technological benefit, with regard to the role of electronic networking and communication and their possible contribution to learning as well as finding employment. d) Cultural benefit, especially with regard to issues of social and cultural diversity.

Another factor playing a role in a job-seekers' job search success is her/his social connectedness. Job-related information often travels by word of mouth and knowing the right people may not only gain a job seeker access to privy job-related information, but may get her/him an interview as well. In other words, the labor market is a complex network of employees and employers with unequal access to valuable information. Geography and socio-economic attributes segment this network into overlapping clusters of variable quality/quantity of different resources. Job-search success depends to a great extent on access to relevant clusters, as well as how effectively this access is utilized. Diverse clusters of interpersonal ties contribute differently to matching job seekers to jobs and jobs to job seekers. Both the employers and the employees are seeking to obtain insider information about the other. This information is often imbedded in social processes unrelated to work such as informal social gatherings, which makes it difficult to equate them with a monetary value (Granovetter 1981: 25). It has been shown that workers prefer to receive job-related information from personal contacts, since it is often cheaper and of better

quality (Granovetter 1981:26). It has also been shown that acquaintances are more likely to be helpful in finding work than friends because friends tend to know the same people and are therefore not as efficient in providing new information (Center for Development Studies, 2010:22).

Finally, the arguments made by Falk & Harrison (1998) provide a clue on social capital as the outcome of the quality and the quantity of the learning processes between individuals and groups in the community. For social capital to become integrated into policy debates, the *mechanisms* for creating social capital need to be better understood and be brought into mainstream education research (Marimuthu, Arokiasamy & Ismail, 2009).

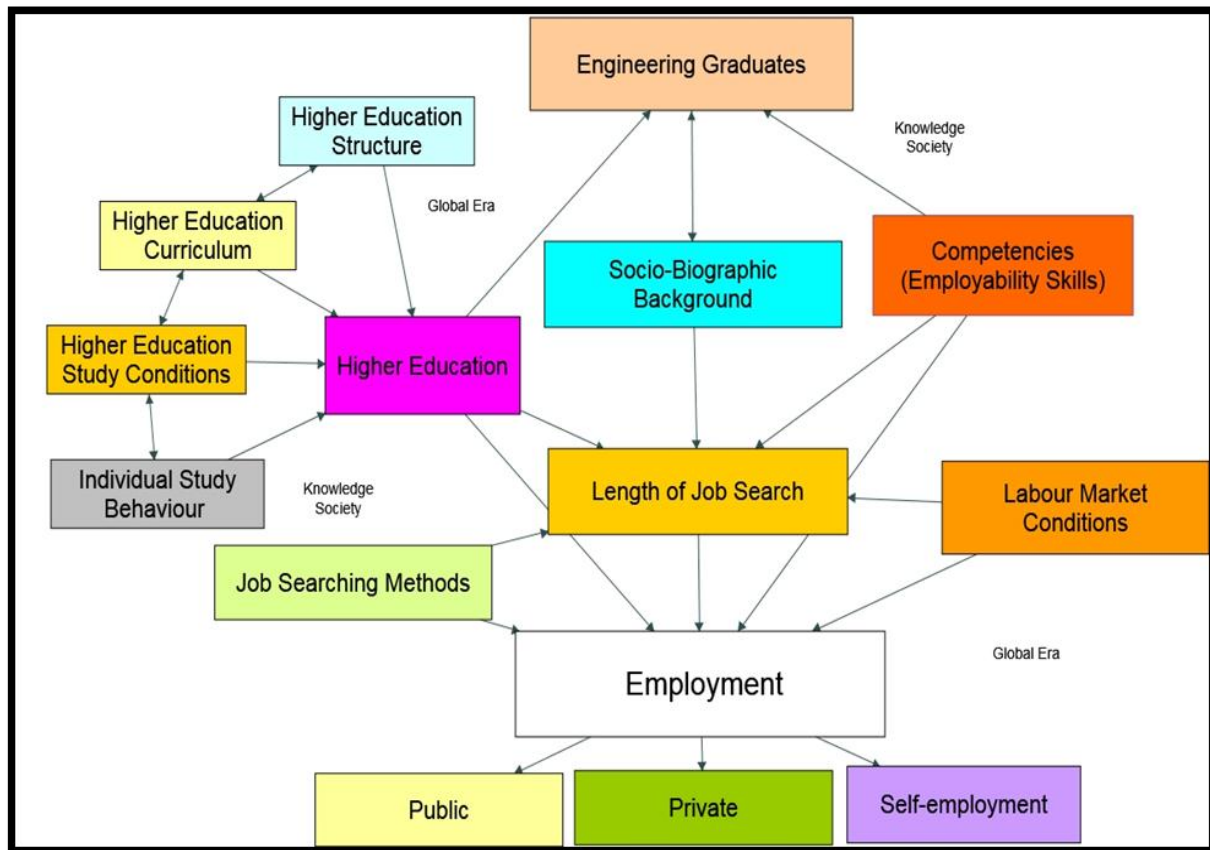
Viewed from these vantage points, social capital theory with the foregoing theories like human capital, labor market segmentation theory, signaling theory, search and matching theory, and status attainment theory were used as Meta-theoretical framework of this study to lead the whole ideas and concepts raised by the research.

4.2. Conceptual Framework

Although many researchers have suggested different kinds of models to study graduate employment, Schomburg's (2012) model was used as frame of reference to develop the model for this study. NVivo, Qualitative software analysis, was used to develop the model.

Figure 4.1

Research Model: Mapping Conceptual Frame Work of the Study



On the bases of Schomburg's (2012) Ideology, this Meta-conceptual frame work was developed, to implement the model testing approach. The model relates the entire process of the study and indicates the relationships among variables of engineering graduates' socio bio-graphic background, higher education, competencies, job searching methods, labor market conditions, length of job search and employment. Besides the main domains (variables), the model contains a number of sub-domains (sub-variables) as it is further operationalized and elaborated through (i) to (vi) below:

- i. Competencies: competencies refer to a set of graduate attributes (hard and soft skills) that determine graduates' employability (Hillage & Pollard, 1998). Hard skills are technical or administrative procedures that are related to an organization's core business (Rao, 2010). In contrast, soft skills or generic skills are behavioral skills characterized by intangible attributes and entail emotional intelligence; and its subjective nature is hard to measure and very much relational in nature (Selvadurai, Choy & Maros, 2012). Consequently, this factor is the combination of mastery of ones own fields, multidisplinary knowledge, ability to rapidly acquire new knowledge, teamwork skills, IT skills, research skills, time management skills, interpersonal and communication skills, critical thinking skills, and creative thinking and visioning skills.
- ii. Employment: this variable traces the employment status of the 2012 cohorts of engineering graduates of case universities (AAU-AAiT and BDU-BiT) either in public or private institutions; or self-employment.
- iii. Higher Education: this sphere is amalgamated from four main substances of higher education, i.e., organizational structure, higher education study condition, higher education curriculum and study behavior. In addition, higher education organizational structure refers to the organizational design as well as the structural hierarchy of the HEIs (Hays, 2008). Accordingly, higher education structure deals with sub-variables like university itself, office of university-industry linkage, alumni office, department/ academic staff, and student council. Besides, higher education curriculum is a set of courses or content domain offered to students as learning plan (Pellegrino, 2006). Curriculum entails objectives of courses, contents of courses, methods of delivery, modes of evaluation and instructional aides (Choudaha, 2008). Further, Study condition refers to facilities that directly or indirectly influence the academic environment or the teaching and learning process (Yankson, 2013). There fore, in this context, study condition involves university facilities, information and communication technology, off-class contacts with instructors, peer-learning, engagement with field-based conferences, seminars, forums and workshops. Finally, study behavior refers to a set of individual characteristics which are relevant for individual differences i.e. preferences in the learning process (James & Blank, 1993). In the context of this study, study behavior involves continuous readings to update knowledge and capabilities,

exposure for experiential learning, studying in a range of situations, studying in an interactive environment with peers and teachers and use of new technologies and communication media for active and interactive learning.

- iv. Job Searching Methods: job searching methods are vehicles that enable graduates to obtain employment as well as work opportunities (Hillage & Pollard, 1998). In the context of this study, job searching methods comprise advertisements in news paper and notice boards, internet, approached by employer, family relationships, friends or acquaintances and the help of higher education institutions.
- v. Labor Market Conditions: labour market conditions stand for the macroeconomic condition, civil-service employment requirement policies and labor market regulations and education-job matches (Pissarides, 2013). Hence, this domain is the cumulative effect of the above three sub-domains.
- vi. Length of Job Search: length of job search was the phrase used when referred to any of the following similar concepts: duration of searching employment, the transition period, length of unemployment, length of searching job opportunities and length of searching employment (Sanayal, 1987). To Harvey (2003) labor market outcome as well as labor market success can be considered to as the probability of new graduates finding employment either before six months period of time after graduation, within a year (by the first two semesters), or after a year. As compared to the first category, the middle graduates are considered to be less successful while the latter among the least successful ones.
- vii. Socio-Biographic Background: this main domain is further splitted in to nine sub-domains like fields of study, cumulative grade point (CGPA), gender, age of graduates, mother's education, father's education, parental income, interest towards the field of study, and prior education.

CHAPTER V

METHODOLOGICAL APPROACH

5.1 Research Paradigm

Researchers use and often make explicit diverse philosophical positions. These positions often are referred to as dialectal stances that bridge post positivist and social constructivist worldviews, pragmatic perspectives, and transformative perspectives (Greene, 2007). For example, researchers who hold different philosophical positions may find mixed methods research to be challenging because of the tensions created by their different beliefs (Greene, 2007). However, mixed methods research also represents an opportunity to transform these tensions into new knowledge through a dialectical discovery (Morgan, 2007). Of the perspectives, a pragmatic perspective draws on employing “what works,” using diverse approaches, giving primacy to the importance of the research problem and question, and valuing both objective and subjective knowledge (Morgan, 2007).

It is argued that pragmatic researchers grant themselves the freedom to use any of the methods, techniques and procedures typically associated with quantitative or qualitative research. They recognize that every method has its limitations and that the different approaches can be complementary (Greene, 2007). They may also use different techniques at the same time or one after the other. For example, they might start with face-to-face interviews with several people or have a focus group and then use the findings to construct a questionnaire to measure attitudes in a large scale sample with the aim of carrying out statistical analysis (Greene, 2007).

As it was rightly argued by Mertens (2009) that the pragmatic approach to science involves using the method which appears best suited to the research problem and not getting caught up in philosophical debates about which is the best approach. Rather, being able to mix different approaches, it has the advantages of enabling triangulation which is a common feature of mixed methods studies (Creswell, 2011). It involves, for instance: the use of variety of data sources (data triangulation), the use of several different researchers (investigator triangulation), the use of multiple perspectives to interpret the results (theory triangulation), and the use of multiple methods to study a research problem or methodological triangulation (Mertens, 2009).

Considering the aforementioned merits of the pragmatic perspective, this study is guided by the pragmatist paradigm.

5.2 Research Method

Quality research requires an eclectic and instinctual ability to draw from multiple research methodologies and theories since effective research often requires multiple dimensions of several theoretical and methodological perspectives (James & Yao, 2005). Consequently, this study employed mixed research method whereby both qualitative and quantitative methods are used simultaneously so as to explain both subjective and objective knowledge (Bryman, 2012).

5.3 Research Design

There are numerous classifications of research design and researchers represent different disciplines and definitions of research design. For instance, according to Bryman (2012) there are five prominent research designs which could provide frameworks for the collection and analysis of data in social science research: experimental and related designs (such as the quasi-experiment); cross-sectional design, the most common form of which is survey research; longitudinal design and its various forms, such as the panel study and the cohort or tracer study; case study design and comparative design. Based on his definition and classification this study followed a tracer study design in a comparative perspective.

The reason given for a question ‘Why Tracer Study?’ is that tracer study enables the researcher to trace the graduates of the higher education institutes. Tracer study is known in a variety of names including “Graduate Survey”, “Alumni Research”, “Graduate career tracking” or “Follow-up Study” (Schomburg, 2011). Regarding the essentiality of tracer study, as it is argued by UANM (2011), it is very important for the following reasons: to find out what happened to graduates after they completed their studies; to find out if they are employed, self-employed or whether they are still looking for a job; to find out if their studies prepare them well for the workplace; to find out if graduates use the knowledge and skills they have learned during their studies; and to use graduates feedback to improve the quality of the study programmes and more specific, to revise the curricular.

In relation, Schomburg (2003) added that tracer study is an approach that enables higher education institutions to obtain information about possible deficiencies in the educational process and the learning process and can form the basis for planning activities for the improvement in the future. A Tracer study is a graduate or alumni survey that attempts to trace the activities of the graduates or previous students of an educational institution (Latif and Bahroom, 2010). These authors further explained that tracer study enables the contextualization of graduates of a particular university through a system that is dynamic and reliable in order to determine their life path or movement. It also enables the evaluation of the results of the education and training provided by a particular institution and examines and evaluates the current and future career and employment opportunities / prospects of graduates (Aina & Moahi, 1999).

The same authors noted that tracer study is tracking studies trace graduates conducted between one up to three years after graduation and study aims to determine the outcome in the form of the transition from higher education to the world of work, output of education is self-assessment against the control and acquisition of competencies, the educational process in the form of an evaluation of the learning process and the contribution of higher education to the acquisition of competencies and educational input in the form of further excavations to information socio-biographies graduates. In this context, this study had traced the engineering graduates of 2012 cohorts after two years' graduation. If this tracer study is conducted more than two years after graduation, it may have several drawbacks, such as the period of retrospection bias due to information that can be too far and the information obtained would have been less relevant. If it is done immediately after graduation, the study had been exit study, where the study cannot be able to see the whole process of transition optimally work for a short time after graduating likely unstable work situation or there may even be graduates who have not experience to found a job.

5.4 Target and Sample Population and Sampling Techniques

5.4.1 Target Population: Engineering graduates of 2012 cohorts, potential employers, higher education teachers and relevant documents were *population* of the study. The cohort encompasses: graduates of Electrical, Mechanical, Civil and Chemical fields from Addis Ababa and Bahir Dar Universities.

5.4.2 Samples and Sampling Techniques

5.4.2.1 Graduates

A total of 195 engineering graduates were drawn through Taro (2010) formula. According to the respective formula, the total number of graduates in 2012 at BDU-BiT and AAU-AAiT is considered first. Therefore, graduates of both case universities are found to be 380 in number. With a 5% margin of error, a design effect of 2, and return rate of 80%, the sample size required for the questionnaire was found to be 195 graduates. It is through such processes that the size of the sample was determined (The target population and sample distribution in each field of study is indicated in Tables 5.1 & 5.2).

Following the determination on the size of the sample population, each sample element (graduate respondents) was drawn using random sampling of a simple variety. The reason for the use of simple random sampling is because, as it was stated by Bryman (2012), it enables each engineering graduates of the year 2012 to get equal chance of being selected to the sample. The rationale for the selection of the graduates of academic year 2012 is related to the reason that the 70/30 policy (i.e., Enrollment Ratios of Science and Social science field composition) is started to be implemented by this Cohort. As it was explained by Corominas (2010), tracer studies shall focus on analyzing of employment statuses that have graduated and just entered the workforce. Likewise, this study has to stick for the graduates of the 2012 academic year, otherwise, if it considers those after 2012, there might be several demographic changes including the issue of employment of graduates besides the possibility of losing relevant information and difficulty of examining the relationship between employee and employers; further, if it takes those graduates before the 2012 academic year, it might not be relevant for current policy issues.

Table 5.1**Distribution of Target Population of Graduates in AAU-AAiT and BDU-BiT in 2012**

	Graduates in 2012	BDU-BiT			AAU- AAiT		
No.	Fields of Study	M	F	Total	M	F	Total
1.	Chemical Engineering	37	8	45	20	14	34
2.	Electrical and Computer Engineering	29	10	39	38	11	49
3.	Civil Engineering	39	11	50	74	16	90
4.	Mechanical Engineering	35	8	43	24	6	30
	Total	140	37	177	156	47	203
	Grand Total	380					

Sample size has been determined by using Taro formula (Taro in Robert-Jan Mora and Bas Kloet, 2010)

$$n_o = \frac{N}{1 + Ne^2} = \frac{380}{1 + 380 \times (0.05)^2} \approx 195$$

Where N = number of graduates, e = margin of error and n_0 = initial sample size.

5.4.2.1.1 Tracing the Whereabouts: Steps Followed to Trace the Engineering Graduates of 2012 Cohorts

Firstly, the identification of graduates was made by the list of graduates' received from the archive and registrar offices of Addis Ababa and Bahir Dar Universities. However, it appeared to be necessary to follow up the contact addresses of all graduates in order to update their address details. Secondly, all graduates were contacted by their telephone addresses. This personal contact was expected to get many positive responses as well as encourage graduates to participate in the study and, moreover, to identify the remaining group of graduates.

Thirdly, consent letters were sent to 380 graduates via email. 189 were willing and 78 were unwilling with time constraints and other related factors and 91 did not give any response. Fourthly, a questionnaire was sent via email and mailed via postal addresses to graduates once their addresses are correctly identified. Some were made by hand delivery.

Fifthly, personal network (word of mouth) and use of key resource persons from each group were used to enquire the current addresses of graduates who could not be traced through the previous methods. Moreover, searching graduates and contacting them via Facebook and using their networks were additional methods used. Finally, graduates (respondents) were reminded via email for three times besides to SMS messages.

Meanwhile, according to the sample size of 195 (100%), data was collected from 161 (83%); of which, 89 was from BDU-BiT (48 via email, 36 through hand delivery, 4 through postal address and 1 through Face Book attachment) and 72 from AAU-AAiT (45 via email and 27 through hand delivery).

5.4.2.2 Employers

Six public employers; six private and six self employers (2 from AAU and 4 from BDU) were taken through purposive sampling. Purposive sampling was also used to take Sixteen Corresponding teachers (two from each field of study and case universities).

Table 5.2**Distribution of Sample Population of Graduates in AAU-AAiT and BDU-BiT in 2012**

Engineering Graduates in 2012		AAU-AAiT			BDU-BiT		
No.	Fields of Study	M	F	Total	M	F	Total
1.	Chemical Engineering	19	4	23	10	7	17
2.	Electrical and Computer Engineering	15	5	20	20	6	26
3.	Civil Engineering	20	6	26	38	8	46
4.	Mechanical Engineering	18	4	22	12	3	15
	Total	72	19	91	80	24	104
	Grand Total	195					

5.4.2.3 Documents

Relevant documents like the Education and Training Policy and Strategy (ETP) (1994); The Education Sector Development Program (1997-2017); The Industrial Development Strategy (2003); Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2006); Growth and Transformation Plan (GTP I); revised and harmonized Curriculum for B.Sc. in Electrical engineering (2014); Chemical engineering (2014); Civil and Water Resource engineering (2014); and Mechanical engineering (2013) were taken as sources of information using purposive sampling.

5.5 Data Collection Tools

The data collection instruments used in this study were questionnaire, semi-structured interview and document analysis. Each instrument was decided on the following different bases.

5.5.1 Questionnaire

Questionnaire was designed to obtain data mainly to the quantitative aspect of the study. The nature of the questionnaire instrument consisted both closed-ended and open-ended items. Most of the closed-ended items were composed of 5 point Likert rating scale partially adapted from New Developments in graduate Tracer Studies and UNITRACE (2010) and from the reviewed literature. The distribution of items across variables were: Employment status (1), Biographic Data (9), Higher Education Structure (5), Higher Education Study Condition (5), Higher Education Curriculum (5), Higher Education Study Behavior (5), Competencies (10), Job Searching/Transition Period from Higher Education to Labor Market (2), Job Searching Methods (6), Labor market Conditions (3). Therefore, a total of 51 close-ended items were prepared, some of the items were followed open-ended ones. Mean while, a questionnaire was administered to 195 engineering graduates and the following data was collected. In the data collection process, graduates alumni data and employers lists were taken from AAU-AAiT and BDU-BiT registrars, Archives and University Industry Linkage (UIL) offices of both case universities. In a Tracer study, technology plays a critical role for collecting data from the scattered population (Schomburg, 2003). Accordingly, questionnaire was administered through email, face book and mail to collect data from graduates of 2012 cohorts besides to the hand delivery.

Table 5.3**No. of Respondents across Fields of Study and Universities**

	Engineering Graduates in 2012	AAU-AAiT			BDU-BiT		
No.	Fields of Study	M	F	Total	M	F	Total
1.	Electrical and Computer Engineering	13	4	17	18	5	23
2	Mechanical Engineering	16	2	18	10	3	13
3.	Civil Engineering	19	4	23	31	6	37
4.	Chemical Engineering	12	2	14	11	5	16
	Total	60	12	72	69	20	89
	Grand Total	161					

Table 5.3 shows the total number of respondents. Thus, only 161 (83%) graduates filled out the questionnaire. It is to be noted that the total number of questionnaire administered by the researcher was 195 (100%).

5.5.2 Semi-Structured Interview

Sixteen Corresponding teachers (two from each field of study and case universities) were taken purposively for interview proposes. Besides, Potential Employers for engineering graduates in Ethiopia were taken purposively. Six private, six public and six self-employers were drawn based on the recommendations of the University-Industry linkage offices of both case universities. In this regard, employers were selected based on their capacity to absorb all types of fields and the nearest employers found in Addis Ababa and Bahir Dar town. Interview was prepared to the sampled employers and engineering teachers. The nature of the interview questions was semi-structured but different in content-wise to both groups of respondents. The sources of the items were from the reviewed literature.

Table 5.4**Distribution of the Corresponding Teachers of 2012 Engineering Graduates**

No.	Number of teachers interviewed in each field of study: Fields of Study where teachers taught	AAU-AAiT			BDU-BiT		
		M	F	Total	M	F	Total
1.	Chemical Engineering	2	-	2	1	1	2
2.	Electrical and Computer Engineering	1	1	2	2	-	2
3.	Civil Engineering	2	-	2	2	-	2
4.	Mechanical Engineering	2	-	2	2	-	2
	Total	7	1	8	7	1	8
	Grand Total	16					

Table 5.5**Lists Identified as Potential Employers for Engineering Graduates in Ethiopia**

No.	Employers
1	Ethiopian Telecommunication Corporation (EthioTelecom)
2	Ethiopian Electric Power Corporation (ELPA)
3	Ethiopian Air lines
4	BGI Ethiopia PLC (Beer Industry)
5	Sugar Corporation
6	MOHA Soft Drinks Industry S.C
7	East Africa Coca Cola Bottling Company
8	VimoVingo Engineering PLC
9	Ethiopian Shipping and Logistic Service
10	Sunshine Construction
11	MOENCo-Ethiopia (Toyota Motor Industry)
12	Bahir Dar Textile Share Company
13	Six self employers (graduates of 2012)

5.5.3 Document Analysis

Documents that are found in both engineering institutes of the case universities, and which are believed to be indicators of the graduate labour market, were considered. In this regard, the rationales of the syllabuses to each fields of study were examined against the reflectivity for the national goals and missions emphasized under the GTP 2015, ESDPI-IV and EPRSDP. In addition, different policy documents from ILO, MOLISA, CSA and the MOE were examined to extract relevant data.

5.6 The Issue of Reliability and Validity

To test the reliability and validity of the questionnaire and interview items, a pilot-test was conducted in a small sub-sample (Creswell, 2009). For the validity, the draft instruments were given to 3 teachers of engineering, and 2 economics teachers. Based on their feedback, some items were improved and some others were discarded to have the final shape. For the reliability, the pool of items was administered for 20 Adama University engineering graduates, encoded using SPSS software Version 20 and the calculated Cronbach Alpha for the five Likert-scale items was found to be 0.88 which indicated the reliability of the instrument.

5.7 Research Ethics

An important component of an ethical study is the respectful treatment of subjects (International Labor Organization, 2011). Respectful treatment includes legal approaches as it is followed by this study. First, cooperation letter was requested from the Center of International and Comparative study in Addis Ababa University. Based on the letter of cooperation, addresses of informants were found from AAU-AAiT and BDU-BiT registrars, Archives and University Industry Linkage (UIL) offices of both case universities.

Secondly, the consent letter was sent via email and postal addresses and some was made through hand delivery. Under the consent letter, the objectives of the research were clearly explained to the informants and respondents who would then decide on whether they want to participate or not (See Appendix-G). The respondents and key informants were assured that all information

collected would be treated confidentially and used only for the research purpose. Finally, the collected data was analyzed confidentially.

5.8 Data Analysis

In order to respond to the research questions raised, Chi-square tests, independent samples t-Test, frequency counts, factor analysis, multinomial logistic regression analysis, percentages and exponentials were computed through STATA, Excel and SPSS version 20 softwares. Qualitative data was also analyzed through NVivo software. More over, Mendeley Software is used in this study to manage the references.

5.8.1 Why and How NVivo Software is Used in this Study?

NVivo is software that supports qualitative and mixed methods research. It is designed to help researchers organize, analyze and find insights in unstructured or qualitative data like: interviews, open-ended survey responses, articles, social media and web content (<http://www.nova.edu>). The software also allows users to classify, sort and arrange thousands of pieces of information; examine complex relationships in the data; and combine subtle analysis with linking, shaping, searching and modeling (<http://www.nova.edu>). Thus, in this study the software was used to develop the Model following Parent and child nodes (NVivo language) as well as main and sub-variables so that the Model was displayed. Additionally, it was applied to code and analyse the collected qualitative data in to patterns and categories.

5.8.2 Why and How STATA Software is Used in this Study?

This study employed the multinomial logistic regression analysis in order to look at the job search periods of engineering graduates in the Ethiopian labor market. In this context, the comparative analysis of the odd ratio was also done based on three categories of being employed before six months, being employed within a year and being employed after a year. For the purpose, STATAIC 14 software was employed because STATA is much stronger than SPSS and

SAS in the multinomial logistic regressions (<http://www.ats.ucla.edu>). Moreover, STATA was both easy to learn and yet very powerful.

Thus, from the conducted multinomial logistic regression analysis, the extent of which the national macro-economic status absorbs engineering graduates within six months time was predicted (See Chapter-6). Moreover, Excel and SPSS Version 20 softwares were used in this study to demonstrate values using graphs and charts and to analyse in different perspectives.

5.8.3 Why and How Mendeley is Used in this Study?

Mendeley, as citation management software, is said to be the world's largest research data base. It has a unique research social networking component which is helpful to associate, interact and liaise thousands of researchers around the world (<http://guides.lib.virginia.edu>). Even though, other reference managers like RefWorks, EndNote, Docear, and Zotero have the same purpose to allow researchers to create a database of references; Mendeley is better free and very user friendly. Therefore, this study employed the respective software (Mendeley 1.16.1) for most of the references.

CHAPTER VI

PRESENTATION, INTERPRETATION AND ANALYSIS

6.1 Introduction

This chapter deals with the presentation, interpretation and research findings of the study. It consists of the analysis and presentation of the empirical findings which are processed from both quantitative and qualitative sources of data. At the center of the analysis is the time it takes for engineering graduate to find jobs. In this context, the comparative analysis of the odd ratio was done based on three categories of being employed before six months, being employed within a year and being employed after a year. To address all the seven basic research questions, frequency counts, Chi-square test, Independent samples t-Test, Means, Factor analysis, Multinomial logistic regression analysis, Exponentials, and Percentages were computed using STATA software, Excel and SPSS Version 20 softwares. The multinomial logistic regression analysis was also calculated in order to examine the factors that determine job-searching among with engineering graduates in the Ethiopian labor market. Further, qualitative data was analyzed through Nvivo software. Finally, tables and graphs are presented and interpreted throughout the chapter.

6.2 Research Findings of the Study

In this sub-section the empirical findings of the survey results, interviews, as well as analyses of documents about the graduate employment and relations with labour market are described.

Table 6.1
Demographic Data of Respondents

	AAU-AAiT engineering graduates			BDU-BiT engineering graduates	
		No.	%	No.	%
Field of Study	Electrical	17	42.5%	23	57.5%
	Mechanical	18	60.0%	12	40.0%
	civil	23	38.3%	37	61.7%
	Chemical	12	42.9%	16	57.1%
Total		70	100%	88	100%
Gender	F	12	38.7%	19	61.3%
	M	58	45.7%	69	54.3%
Total		70	100%	88	100%
CGPA	2.00-2.74	5	45.5%	6	54.5%
	2.75-3.24	2	13.3%	13	86.7%
	3.25-3.74	49	51.6%	46	48.4%
	3.75-4.00	14	37.8%	23	62.2%
Total		70	100%	88	100%

Table 6.1 displays the total number of respondents drawn from AAU-AAiT and BDU-BiT engineering graduates of 2012 Cohorts. Of 158 total numbers of respondents, 70 graduates are taken from AAU-AAiT, and 88 from BDU-BiT. The departmental distribution indicates that among 70 AAU-AAiT engineering graduates, 17 (24.3%) are Electrical; 18 (25.7%) Mechanical; 23 (33%) Civil; and 12 (17%) are from Chemical fields. Similarly, of 88 BDU-BiT engineering graduates, 23 (26.1%) are Electrical engineers, 12 (13.6%) Mechanical, 37 (42%) Civil, and the remaining 16 (18.2%) are Chemical engineers.

The gender related distribution of respondents reveals that of the 70 AAU-AAiT engineering graduates, 12 (17.7%) are females while 58 (82.9%) are males. Similarly, of 88 BDU-BiT engineering graduates, 19 (21.6%) are females and 69 (78.4%) are males. The other grouping of the respondents which was subjected to this investigation was the academic Performance of engineering graduates. For the purpose, their Cumulative Grade Point Average (CGPA) during graduation was considered. Meanwhile, of 70 AAU-AAiT graduates, 5 (7.1%) are found to be

with CGPA of 2.00-2.74; 2 (2.85%) graduates with CGPA of 2.75-3.24; 49 (51.6%) with a range of CGPA 3.25-3.74; and 14 (37.8%) graduates within CGPA 3.75-4.00. Similarly, of 88 BDU-BiT graduates, 6 (54.5%) graduates are with CGPA 2.00-2.74; 13 (86.7%) within a CGPA of 2.75-3.24; 46 (48.4%) graduates within a range of CGPA 3.25-3.74; and 23 (62.2%) graduates are taken with CGPA 3.75-4.00. Therefore, the academic performance of engineering graduates who are participated in this study seem to be dispersed from higher to medium and even lower achievers. The relation of the above socio-biographic data of respondents to the job market is presented and analyzed in the subsequent sub-sections.

6.3 The Employment Status of 2012 Cohort Graduates of Engineering from AAU-AAiT, and BDU-BiT

Figure 6.1

Employment Status of Engineering Graduates of Cohort 2012

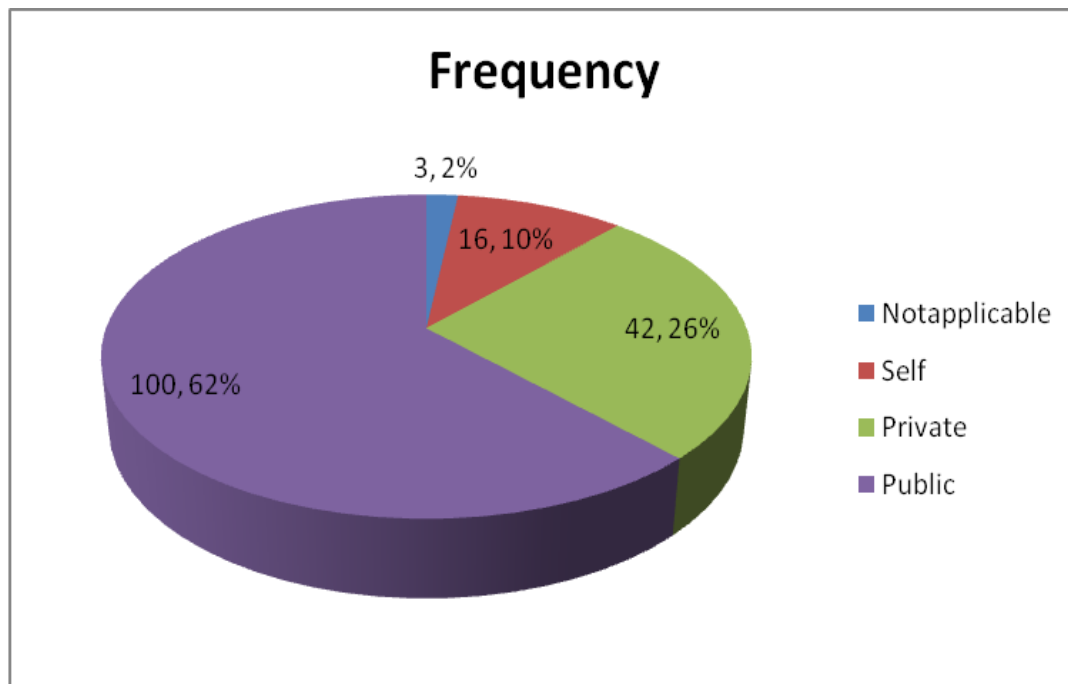


Figure 6.1 above displays the status of graduate employment, Consequently, of the 161 respondents 100 (62%) were employed in public institutions, 42 (26%) were employed in private

ones, while 16 (10%) were self-employed graduates. It was only 3 (2%) who respond to the alternative 'not applicable' this may imply they are either in further education, at apprenticeship, or totally unemployed. Therefore, the proceeding analyses are considering 158 subjects from 161, i.e., by excluding those who are believed to be either in further education, unemployed or at apprenticeship.

Figure 6.2

Comparative view of Employment Status of Engineering Graduates between AAU-AAiT and BDU-BiT

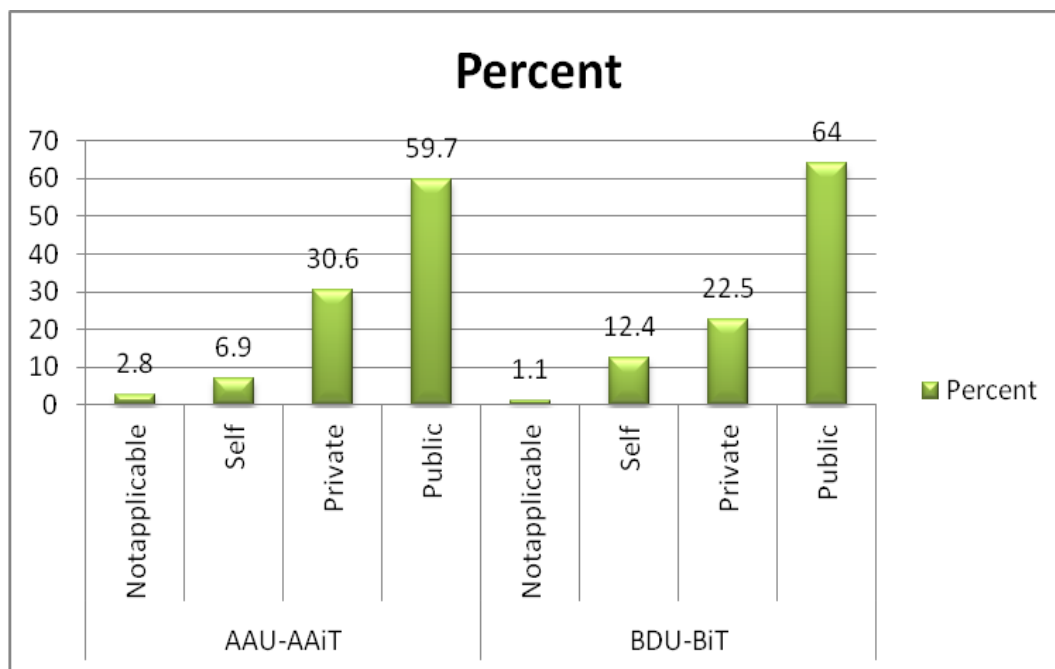


Figure 6.2 shows the comparative view of employment status of engineering graduates between AAU-AAiT and BDU-BiT. Thus, of the 72 (100%) sampled respondents of AAU-AAiT 43 (59.7%) were traced to be employed in Public Organizations while it is found to be of 89 (100%) BDU-BiT graduates 57 (64%) were in Public which indicates that the majority of BDU-BiT graduates most likely to be employed in government Institutions. A close look at the private employees indicate that it is 22 (30.6%) of the 72 (100%) sampled respondents of AAU-AAiT are there while 20 (22.5%) of BDU-BiT graduates from the total of 89 (100%) were employed in

the Private sector which implies that AAU-AAiT graduates tend to find jobs from the private sector than that of the BDU-BiT graduates. Furthermore, the self employed graduates account to be traced from AAU-AAiT with 5 (6.9%) from the total respondent of 72 (100) while BDU-BiT graduates who were found to be self employed account for 11 (12.4%) by which the comparative explanation indicates the BDU-BiT graduates are found to be self employed than their AAU-AAiT counter parts.

Figure 6.3

The Employment Status of Engineering Graduates by Field of Study

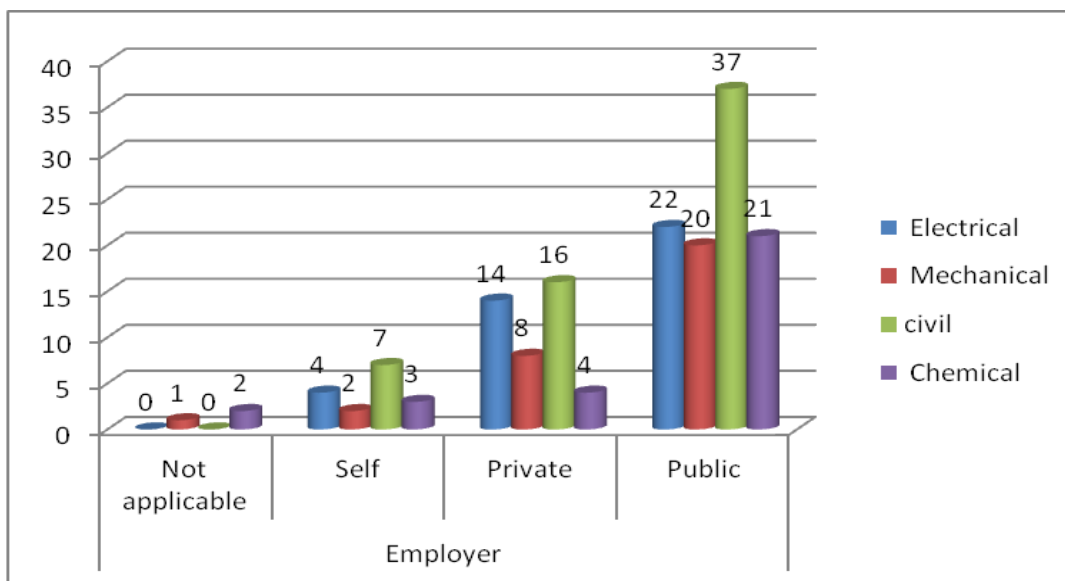


Figure 6.3 displays the employment status of Engineering Graduates by Field of Study. Consequently, the details indicate that status of employment for electrical engineering graduates appears to be: of 40, 22 (55%), are in public, 14 (35%) private and 4 (10%) in self. Close examination of the employment of mechanical engineers shows that of 31, 20 (65%), are in Public, 8 (25.8%) private and 2 (6.5%) in self and the remaining accounts 1 (3.2%). It is also traced that the employment status of civil engineering graduates: of 60, 37 (61%) are in public, 16 (26.7%) private and 7 (11.66%) in self. The chemical engineering graduates' employment again reveals: of the total 30, 21 (70%) are in public, 4 (13.3%) private and 3 (10%) in self while the remaining 2 (6.6%) are either in further education or unemployed. In all cases, the major

employer of the engineering graduates in Ethiopian labor market seems to be the public organizations.

Table 6.2

The Employment Status of AAU-AAiT, and BDU-BiT Engineering Graduates by Field of Study: Comparative Perspective

University			Employer				Total
			Not applicable	Self	Private	Public	
AAU-AAiT	Field	Electrical	0	1(6%)	8(47%)	8(47%)	17 (100%)
		Mechanical	0	1(6%)	4(22%)	13(72%)	18(100%)
		civil	0	2 (9%)	8(35%)	13(57%)	23(100%)
		Chemical	2 (14%)	1 (7%)	2 (14.3%)	9 (64%)	14(100%)
	Total		2 (3%)	5 (7%)	22(30.5%)	43(59.7%)	72(100%)
BDU-BiT	Field	Electrical	0	3(13%)	6(26%)	14 (61%)	23(100%)
		Mechanical	1(8%)	1(8%)	4(31%)	7(53%)	13(100%)
		civil	0	5(13.5%)	8(21%)	24 (62%)	37(100%)
		Chemical	0	2(12.5%)	2(12.5%)	12(75%)	16(100%)
	Total		1 (1.1%)	11(12.4%)	20(22.5%)	57 (64%)	89(100%)

Table 6.2 indicates the comparative tracings of graduate employment status between universities and across fields. Accordingly, of 17 electrical graduates of AAU-AAiT, 8 (47%) 8 (47%), and 1 (6%) are employed in public, private and self-respectively; while of 23 BDU-BiT 14 (61%) in public 6 (26%) in private, and 3 (13%) and self-employed. Of the total 18 mechanical graduates of AAU-AAiT, 13 (72%) 4 (22%), and 1 (6%) are employed in public, private and self-respectively; while of 13 BDU-BiT 7 (53%) in public 4 (31%) in private, and 1 (8%) self-employed, and the remaining 1 (8%) either in further education or unemployed.

In addition, of 23 civil engineering graduates of AAU-AAiT, 13 (57%) 8 (35%), and 2 (9%) are employed in public, private and self-respectively; while of 37 BDU-BiT 24 (62%) in public and 8 (21%) in private organization and 5 (13.5%) self-employed. These show there are no civil engineering graduates who are able to create jobs by themselves. The final look of the chemical

engineering graduates of AAU-AAiT indicates of 14, 9 (64%) 2 (14.3%), 1 (7%) and 2 (14%) are employed in public, private self, and the remaining not applicable for employment respectively while of 16 BDU-BiT 12 (75%) in public and 2 (12.5%) in private organization, and 2 (12.5%). Therefore, the whole picture of the employment status of engineering graduates in both case universities more inclined to the public organizations followed by the private ones, which implies the less responsiveness of the private sector to the labor market as compared to the public sector. The discouraging aspect of the graduate labor market, in this study is related to the low share of self-employment.

Figure 6.4

The Employment Status of the 2012 Engineering Graduates by Gender

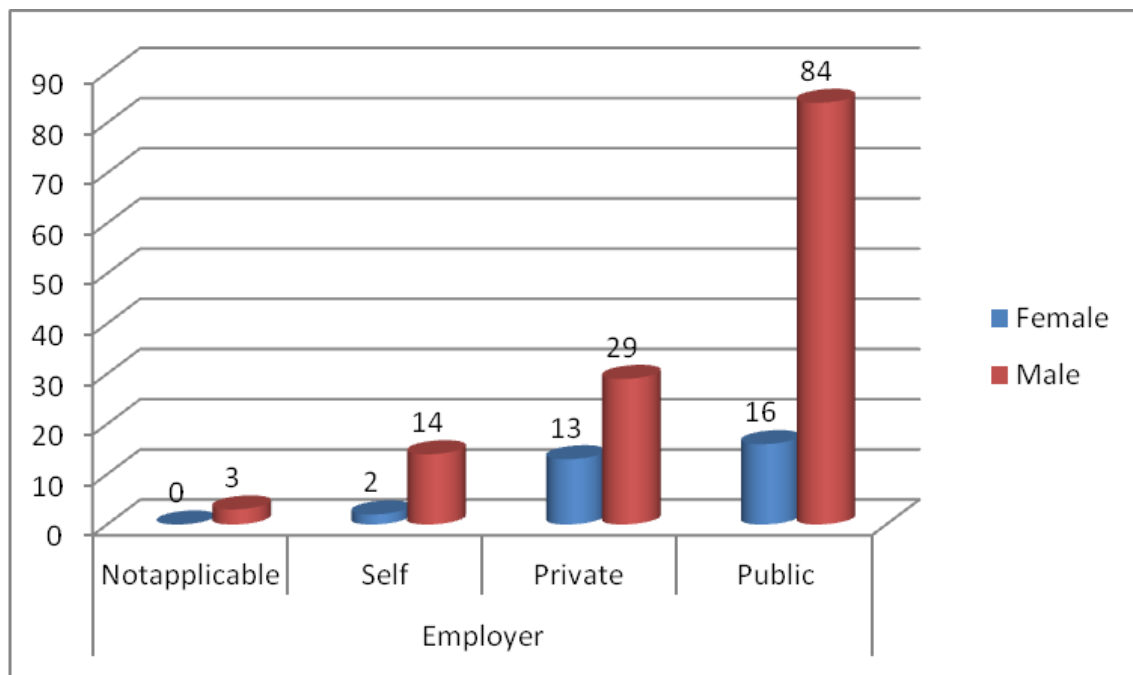


Figure 6.4 shows the employment status of the 2012 Engineering Graduates by Gender. Accordingly, of 130 male engineering graduates, 84 (64.6%) males were traced to employed in the public sector, while, 29 (22%) in the private sector and 14 (11%) in the self-employment basis. Regarding females, of 31 engineering graduates, 16 (51.6%) in public, 13 (41.9%) in private, and 2 (6.4%) females were found to be self employed. This implies that the majority of

male (64.6%) and female (51.6%) engineering graduates are having employment opportunities in the public organizations, while, (22%) males and (41.9%) females employed in the private sector. However, in both male and female cases self-employment is insignificant. From this finding it is possible to deduce that the government sector is the chief labor market that absorbs majority of the engineering graduates.

Table 6.3

The Employment Status of AAU-AAiT, and BDU-BiT Engineering Graduates by Gender: Comparative Perspective

University			Employer				Total
			Not applicable	Self	Private	Public	
AAU-AAiT	Gender	Female	0	1(8%)	4 (33%)	7 (58%)	12(100%)
		Male	2 (3.3%)	4(7%)	18 (30%)	36 (60%)	60 (100%)
	Total		2 (3%)	5 (7%)	22 (30%)	43 (60%)	72(100%)
BDU-BiT	Gender	Female	0	1 (5%)	9(47%)	9(47%)	19(100%)
		Male	1 (1.4%)	10 (14%)	11 (16%)	48 (68%)	70(100%)
	Total		1 (1.1%)	11 (12%)	20 (22%)	57 (64%)	89(100%)

Table 6.3 displays the comparative perspective of the employment status of AAU-AAiT, and BDU-BiT engineering graduates on gender basis. Thus, of 12 female engineering graduates of AAU-AAiT 7 (58%) in public, 4 (33%) in private, and 1 (8%) in self-employment; while of 19, BDU-BiT engineering graduates 9 (47%) in public, 9 (47%) in private, and 1 (5%) in self.

Again, of 60 male engineering graduates of AAU-AAiT 36 (60%) in public, 18 (30%) in private, and 4 (7%) in self-employment; while of 70, BDU-BiT engineering graduates 48 (68%) in public, 11 (16%) in private, and 10 (14%) in self-employment. This implies that female

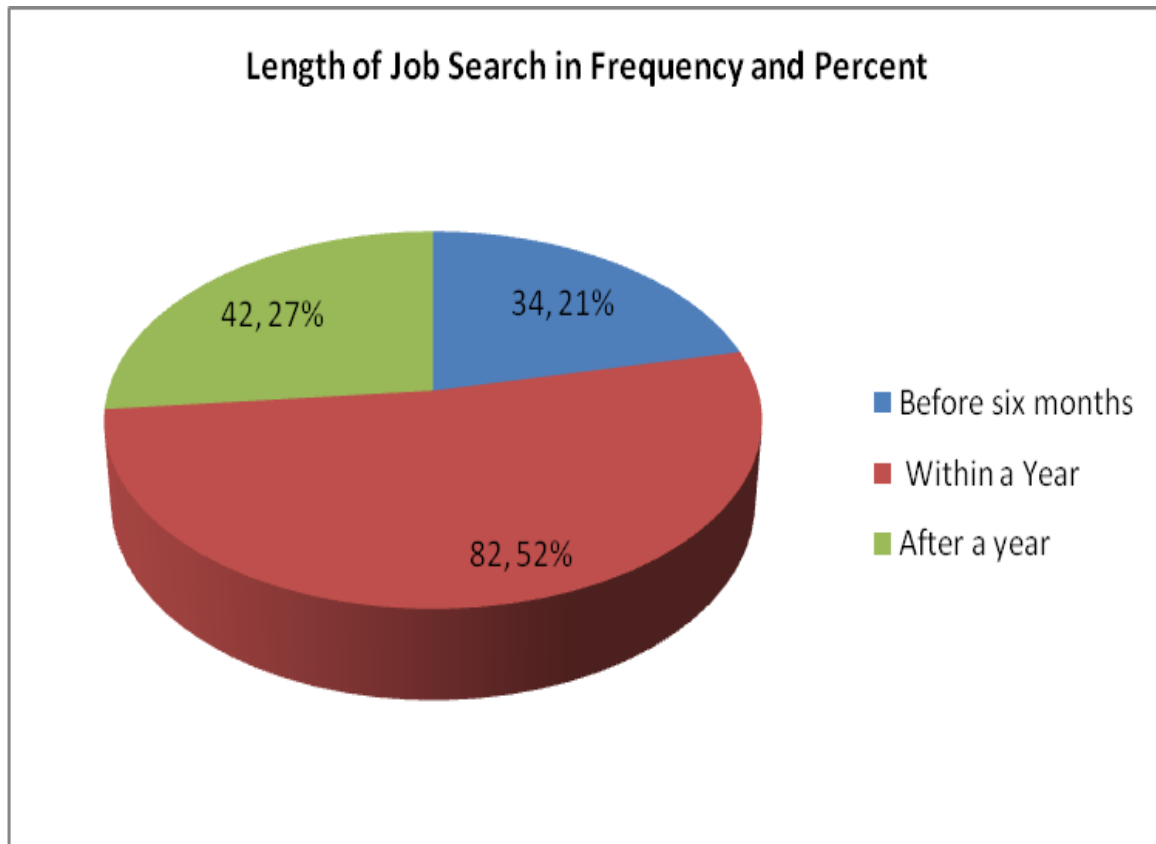
graduates of AAU-AAiT traced to get employment (58%) in Public institutions than BDU-BiT female graduates (47%). The reverse is true in the private sector. i.e., (47%) of BDU-BiT female graduates are employed in the private sector than AAU-AAiT (33%) counterparts. Once more, a critical look at Table xx above shows the employment status of BDU-BiT male graduates traced to be in the public sector (68%) than AAU-AAiT (60%). However, male engineering graduates of AAU-AAiT are found to be employed in the private sector (30%) than the graduates from BDU-BiT (16%). From this fact it is possible to understand that AAU-AAiT male graduates are better accessing the private labor market than those from BDU-BiT. The possible explanation could be the availability of better opportunities to AAU-AAiT graduates since their university is situated at the Metropolitan site (center) than the periphery.

6.4 The Length of Job Search among 2012 Engineering Graduates

The subsequent sub-section deals with the length of job search by considering only those engineering graduates who have reported to get employment opportunities either within six months, within a year or after a year.

Figure 6.5

Frequency and Percentage Distribution of Engineering Graduates' Length of Job Search



The above figure 6.5 displays the length of job search among 2012 engineering graduates from Addis Ababa and Bahir Dar Universities. From a total of 158 employed respondents, 34 (21%) were traced to be employed before six months after their immediate graduation; whereas, 82 (52%) and 42 (27%) of AAU-AAiT and BDU-BiT engineering graduates were found to be employed within a year and after a year respectively. This implies the majority of graduates are unable to secure jobs within six months' period of time and the loose responsiveness of the labor market to accommodate graduates as fast as possible as well. This is also considered as long term unemployment among graduates. Basically, long-term unemployment indicates poverty. Poverty makes it difficult to make investments in education and health that would increase a person's productivity (Berihanu et al., 2005/7). Long term unemployment has a number of socio-

economic, political and moral consequences (UNDP, 2006). It reflects the failure to make use of an important factor of production, labour, for fostering economic growth (UNDP, 2006). Besides, unemployment results with different crises, for instance, in Ethiopia, structural unemployment and widespread poverty were believed to be the basis for the riots and violent demonstrations by youths and unemployed graduates in Addis Ababa in April 2001, upsetting the seemingly peaceful and stable political situation. The incident resulted in many deaths and destruction of property worth millions of dollars (Berihanu et al., 2005/7).

Figure 6.6

The Comparative View of Engineering Graduates Length of Job Search by University

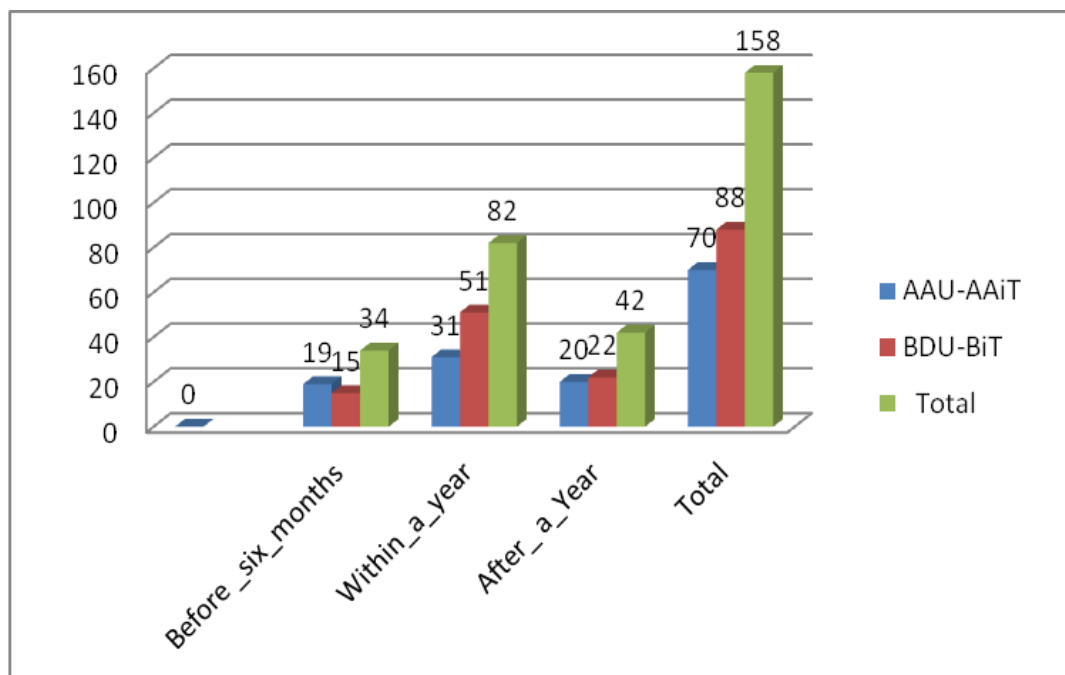


Figure 6.6 shows the percentage distribution of engineering graduates via length of job search by universities. Accordingly, it is traced that, of the total 70 respondents of AAU-AAiT only 19 (27%) graduates were found to be employed within six months period of time; 31 (44%) within a year time; and 20 (29%) after a year. Similarly, of the 88 respondents of BDU-BiT graduates 15 (19%) secured employment within six months' period of time, while the remaining 51(58%); and 22 (28%) reported to get their employment within a year and after a year respectively. The

comparative views of both universities revealed that searching employment before six months is better to be observed among AAU-AAiT graduates (27%), than BDU-BiT (19%).

Besides the fact of having a job, there are other components of labour market success that can be taken into consideration. Those include, according to Melink & Pavlin (2009:66), types of employment contracts, employment stability, wage levels, knowledge gained through work experience, utilization of knowledge and skills gained during study in HEIs, career prospects for promotions, actual job matches with graduate expectation and general satisfaction of the graduates with the type of employment in terms of work-life balance. Consequently, informants were asked to comment on the labour market conditions. What was mentioned by some respondents of both case universities include: the nature of employment to some of them is explained to be short and fixed term which lacks appropriate level of job-security and these types of jobs that are not full-time nature are reported to leave them for unstable job environment and preclude them from demonstrating a good signal of adaptability and productivity to their employers. In addition, the extent of earnings from current work, opportunities to learn more new things, to face challenges working environments and possibilities to play a role in introducing innovations in to the employer organizations are reported to be less encouraging.

Table 6.4

Pearson Chi2 Test on the Length of Job Search among Engineering Graduates by University

Length of Job Search	Name of the University		Total
	AAU-AAiT	BDU-BiT	
Before _six_months	19	15	34
Within_a_year	31	51	82
After_ a_Year	20	22	42
Total	70	88	158

$$\text{Pearson chi2 (2) = 3.4379 Pr = 0.179}$$

Table 6.4 depicts proportion of Engineering Graduates who are able to secure jobs ‘before six months after graduation’, ‘within a year’ and ‘after a year’ and tests if the university attended by

graduates has something to do with the length of job search. However, the computed test statistic reveal that there is no statistically significant relationship between the type of University attended by the graduates and length of job search (chi-square with two degrees of freedom = 3.4379, $p = 0.179$). In relation to this, key informants from employer organizations such as from Ethiopian Telecommunication Corporation, Ethiopian Electric Power Corporation, Sugar Corporation, MOHA Soft Drinks Industry, East Africa Coca Cola Bottling Company, VimoVenco Engineering, Ethiopian Shipping and Logistic Service, Sunshine Construction, MOENCo-Ethiopia, Bahir Dar Textile Share Company were interviewed whether they preferred Bahir Dar or Addis Ababa University graduates. Interviewees agreed up on that from which University didn't matter in the recruitment process rather Cumulative Grade Point (CGPA) and interview results matter the most. This finding is in line with the findings of Zhou (2003) that the reputation of the university has a small effect on the graduate job searches made in China. However, this finding is to the contrary of Kong (2011) who recently studied factors affecting employment, unemployment and graduate study of university graduates in China and who come up with the findings that those graduates who came from higher reputable colleges find jobs faster and are more likely get study opportunities in graduate school.

6.5 The Socio-Biographic Background of AAU-AAiT and BDU-BiT Graduates in Relation to Job Search and Employment Opportunities

This study traces the socio-biographic background variables as one of the main determinant factors of job searching. The socio-biographic background factors include fields of study, Cumulative Grade Point (CGPA), gender, age, mother's education, father's education and parental income. The analysis starts with respondents' interest towards the field engineering. Graduates were asked about their interest towards the field engineering before they joined the Higher Education Institutions. Figure 6.7 below displays the results.

Figure 6.7

Respondents' Interest towards the Field Engineering before Joining the Higher Education

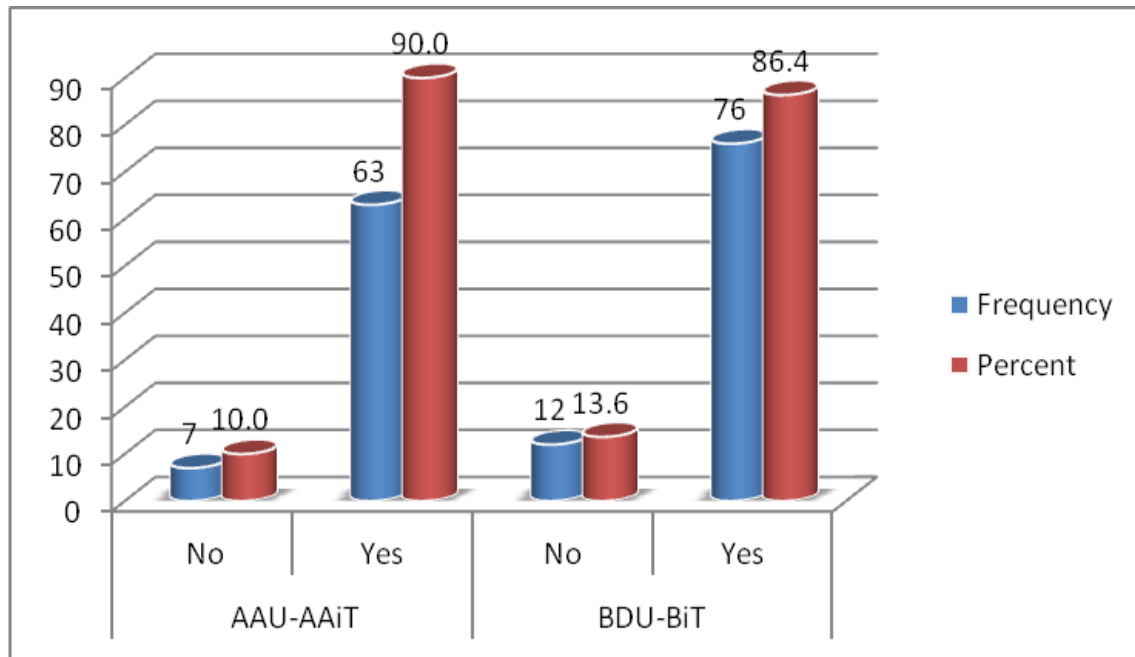


Figure 6.7 displays the interest of graduates of AAU-AAiT and BDU-BiT towards the field engineering before joining the higher education. The sum of the frequencies of respondents with positive view of the case universities accounts 136 (86.07%); while the remaining 22 (nearly 14%) reported to lack positive attitude towards the field. As it can be seen from the bar graph, 63 (90%) of the AAU-AAiT graduates reveal as they have had positive interest for their fields of study; while 76 (86.4%) of BDU-BiT were interested for the field of engineering before they joined the University. This shows that the proportion of graduates who have reported to lack interest towards engineering were insignificant in number i.e., nearly 7 (10%) and 12 (13.6%) graduates in AAU-AAiT and BDU-BiT respectively.

Demonstrating positive regard towards the field is believed to have an influence on the academic performance of the students while in campus and their career prospects after graduation. In relation, Garkaza, Banimahdb and Esmailic (2011) proved the role of students' optimistic interest on academic performance. On the other hand, the same authors proved that students' family role in choosing major have no significant relationship with academic performance and

employment status. Moreover, the relationship between interest of graduates towards their field of study and length of employment was tested using Chi-square test and the result is presented in Table 6.5 below.

Table 6.5
Interest/Motivation Vs Length of Searching Employment

Length of job searching/finding employment	Interest/Motive towards the field Engineering		Total
	No	Yes	
Before_ six_ months	8	26	34
Within_a_year	11	71	82
After_ a_Year	0	42	42
Total	19	139	158

Pearson chi2 (2) = 10.1440 Pr = 0.006

Fisher's exact = 0.002

Table 6.5 indicates the relationship between interest of graduates towards their field of study and length of searching employment. However, the observed frequencies in one of the cells is found to be empty. This obliges to recalculate the Pearson chi2 by Fisher's exact test because when there is an empty cell or cells with small frequencies, one can request Fisher's exact test with the exact option (<http://www.ats.ucla.edu>). Therefore, this analysis is made using the recommended Fisher's exact test. Accordingly, the calculated Pearson Chi2 Test on the issue indicated that there is a statistically significant relationship between interest and length of job search (chi-square with two degrees of freedom = 10.1440, $p = 0.006$; and Fisher's exact = 0.002). This implies that there is statistically significant relationship between graduate employment and interest towards the field of study. This is in line with the fact that was presented in Figure 6.7 above.

Table 6.6**Views of the Respondents on the Contribution of their Prior Education to University Study**

University		Observed N	Expected N	X^2	df	Sig.
AAU-AAiT	Moderate and Below	12	23.3	34.114	2	.000
	High	26	23.3			
	Very High	32	23.3			
	Total	70				
BDU-BiT	Moderate and Below	17	29.3	50.273	2	.000
	High	24	29.3			
	Very High	47	29.3			
	Total	88				

Table 6.6 displays empirical links between schooling history and university study. The views of the sampled graduates about the contribution of their prior education to university study are supposed to contribute for entry in the labour market. Accordingly, the frequency of respondents under the rating scale ‘high’ and ‘very high’ accounts the majority i.e., 129 (81.64%). The comparative view of the frequency of respondents under the rating scale ‘high’ and ‘very high’ also provides that 58 (83%) in AAU-AAiT and 71 (81%) in BDU-BiT. The rated mean scores of the remaining respondents appeared to be either moderate or below in both Institutions (i.e., It is to be noted that the frequency in the ‘low’ cell was below 5 and merged in to the ‘moderate’ cell so that to meet the assumptions of chi-square test). The X^2 value shows that [$(X^2_{(3)}=34.114, p < .05)$] to AAU-AAiT and [$(X^2_{(3)}=50.273, p < .05)$] to BDU-BiT; which verifies that the observed frequency is not a chance factor. This finding is in line with Garkaza, Banimahdb and Esmaeilic (2011) who found out about the existence of strong relationship between prior education and University study. Moreover, in their systematic review and Meta-Analysis of Psychological Correlates of University Students’ Academic Performance, Richardson & Abraham (2012) proved that high school academic performance is a strong predictor for university CGPA. For instance, in Europe, assessment of previous school performance is

normally central to student selection in the standardized university admission procedure (Peers & Johnston, 1994). Similarly, the advanced general certificate of education (A level examinations) and the number of cross-subject A level points attained is the key entry criterion for most U.K. universities. Accordingly, (Strenze, 2007) found out that CGPA is the key criterion for postgraduate selection and graduate employment and is predictive of occupational status in. As such, it is an index of performance directly relevant to training and employment opportunities (Plant, Ericsson, Hill, & Asberg, 2005) and is meaningful to students, universities, and employers alike.

Moreover, the relationship between Prior Education and Length of job search was tested by using the Pearson Chi-square and the result is presented in Table 6.7.

Table 6.7
Prior Education Vs Length of Employment

Length of job searching/finding employment	Prior Education					
	Very Low	Low	Moderate	High	Very High	Total
Before_ six_ months	0	0	6	12	16	34
Within_a_year	0	0	14	23	45	82
After_a_Year	1	1	7	15	18	42
Total	1	1	27	50	79	158

Pearson chi2 (4) = 7.1100 Pr = 0.525

Fisher's exact = 0.597

Table 6.7 shows the Pearson chi2 calculated by considering its assumptions. As can be observed from the respective table, some cells remain with out values. This demands the consideration of Fisher's exact test with the exact option because when there are empty cells or cells with small frequencies, one can request for this test (<http://www.ats.ucla.edu>). Consequently, the calculated Pearson Chi2 Test on the relationship between prior education of graduates and length of their job search showed that there is no statistically significant relationship i.e., (chi-square with four

degrees of freedom = 7.1100, $p = 0.525$; and Fisher's exact = 0.597). This implies that graduates' being with prior education has nothing to do either to be employed before six months after graduation or to be remain unemployed even after a year.

Figure 6.8

Percentage Distribution of Engineering Graduates' Length of searching Employment by Fields of Study

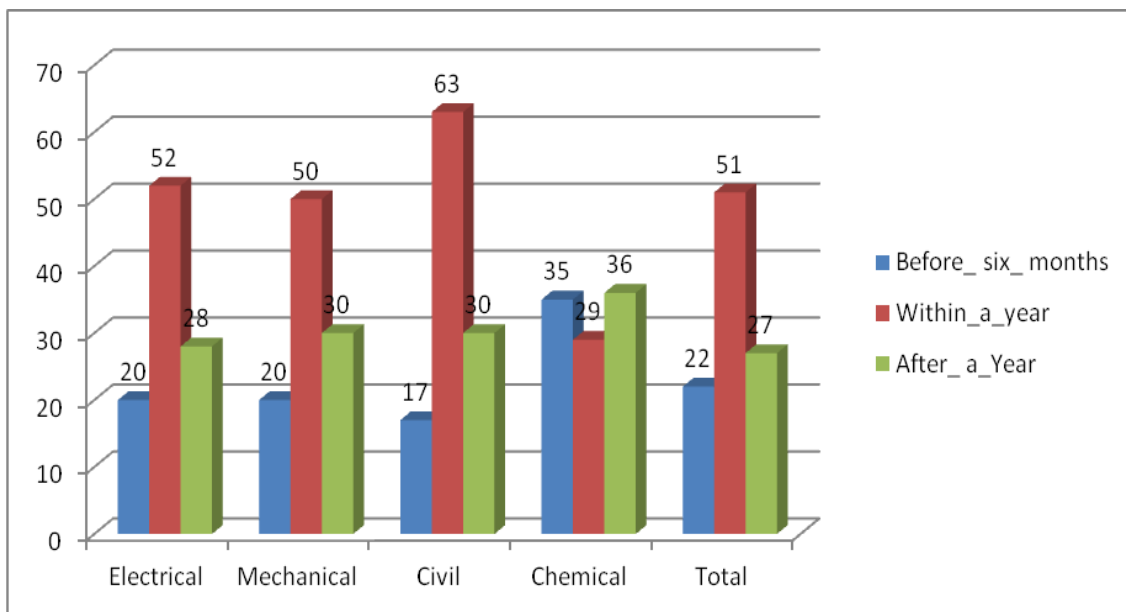


Figure 6.8 shows the percentage distribution of engineering graduates via length of job search by fields of study. It is traced that from the total 40 electrical engineering graduates only 8 (20%) were secured their first employment within six months' period of time; 21 (52%) within a year time; and 11 (28%) after a year. From the total 30 respondents of Mechanical engineers only 6 (20%) graduates were found jobs within six months' period time; 15 (50%) within a year time; and 9 (30%) after a year. Moreover, from the total 60 respondents of Civil engineers only 10 (17%) graduates were found jobs within the first six months' period of time after their immediate graduation; 38 (63%) within a year time; and 12 (17%) after a year. From the total 28 respondents of Chemical engineers only 10 (22%) graduates were found jobs before six months' period of time; 8(51%) within a year time; and 10 (27%) after a year. The comparative view of all fields of study revealed that Chemical engineers are luckiest to secure jobs within six months'

after their immediate graduation whilst Civil engineers are the least lucky ones to found jobs in the shortest period of time. This is related to the theory of search and matching that postulates as candidates who are better matched to the labour market conditions tend to find jobs much sooner and have high bargaining power (in Melink & Pavlin, 2009:27).

Table 6.8

Pearson Chi2 Test on the Length of Job Search by Field of Study

Length of job searching/finding employment	Field of Study				
	Electrical	Mechanical	civil	Chemical	Total
Before_ six_ months	8	6	10	10	34
Within_a_year	21	15	38	8	82
After_ a_Year	11	9	12	10	42
Total	40	30	60	28	158

$$\text{Pearson chi2 (6) = 9.8254 Pr = 0.132}$$

Table 6.8 shows the result of a test to check whether or not what was observed in the frequency in Figure 6.8 has a significant value. Thus, the Pearson Chi2 Test indicated that there is no statistically significant relationship between field of study and length of job search (Chi-square with six degrees of freedom = 9.8254, $p = 0.132$). This implies that what was observed in the respective figure is a chance matter other than a statistical issue. As it was argued by Melink & Pavlin (2009) faculties and departments, as the main responsibility centers of a university have a two-fold order of responsibility; academic and economic. In particular, through their academic responsibilities they are to act as operational units which have full control of the main technical phases of research and teaching processes (admissions, curriculum and research agenda design, discovery, settlement, and diffusion of scientific knowledge, etc). However, absence of significant role played by the units to match their graduates with the labour market within the shortest possible time implies the underplay of their academic responsibilities related with the realization of the specific missions such as meeting the interests of the external and internal strategies by which graduate labour market is supposed to be at the center. Furthermore, Table 6.8 shows that a large number of graduates found jobs after six months (within and after a year)

in all fields of study; however, there are variations among fields of study and this research has revealed that a growing proportion of graduates are undertaking forms of employment that are not commensurate to their level of education and skills.

Figure 6.9

The Percentage Distribution of Engineering Graduates Via Length of Searching Employment by CGPA

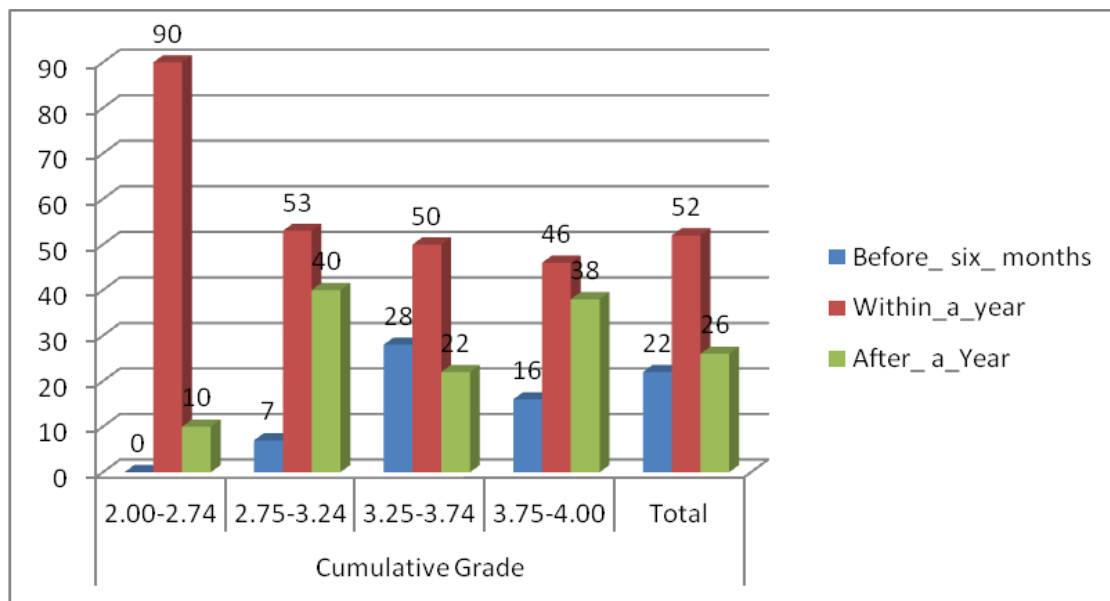


Figure 6.9 shows the percentage distribution of engineering graduates via length of job search by CGPA. It is traced that from the total 11 respondents; no one (0%) can secure jobs within six months period of time; 10 (90%) electrical engineers secure their first employment within a year time; and 1 (10%) after a year. From the total of 15 respondents with CGPA 2:75-3:24 only 1 (7%) graduates were found to be employed within six months' time; 8 (53%) within a year time; and 6 (40%) after a year. Of the total 95 respondents with CGPA 3:25-3:74 only 27 (28%) graduates were found to be employed within six months' time; 47 (50%) within a year time; and 21 (22%) after a year. From the total of 37 respondents with CGPA 3:75-4:00 only 6 (22%) graduates were found to be employed within six months' time; 17 (52%) within a year time; and 14 (26%) after a year. The comparative view among all four groups revealed that graduates with CGPA 3:25-3:74 are in a better position to secure jobs before six months whilst graduates with

CGPA 2.00-2.74 are the least favored graduates to find jobs within the first six months. Therefore, as it was argued by Melink & Pavlin (2009) it is important to note that student who exert much effort in their studies have high expectations of their future career because it is believed that labour market awards intensive work during education, when average grade distinguishes a given candidate from other in the recruitment process.

Table 6.9
Pearson Chi2 Test on Length of Searching Employment by CGPA

Length of job searching/finding employment	Cumulative Grade				
	2.00-2.74	2.75-3.24	3.25-3.74	3.75-4.00	Total
Before_ six_ months	0	1	27	6	34
Within_a_year	10	8	47	17	82
After_ a_Year	1	6	21	14	42
Total	11	15	95	37	158

Pearson chi2 (4) = 14.8447 Pr = 0.021

Fisher's exact = 0.026

Table 6.9 shows length of searching employment by CGPA. However, the value of some cells is found to be below 5 which failed to meet the chi-square assumptions. In such situations, i.e., when there are empty cells or cells with small frequencies, one can request Fisher's exact test with the exact option (<http://www.ats.ucla.edu>). Therefore, this analysis is made using the recommended Fisher's exact test. Accordingly, the calculated Pearson Chi2 Test on issue indicated that there is a statistically significant relationship between Cumulative Grade Point (CGPA) and length of job search (chi-square with four degrees of freedom = 14.8447, $p = 0.021$; and Fisher's exact = 0.026). The result indicates CGPA is one of the main determinant factors of graduate employment in Ethiopian labor market. This is well supported by the qualitative data. Employers were asked to explain the criteria used to recruit engineering graduates. Almost all of them reported that Cumulative Grade Point (CGPA) is one of the major criteria regularly used to recruit graduates to the job market. This finding is in line with (Allen & van der, 2006) proposition. The proposition advanced by Allen & van der Velden (2006) is that the selection criteria used by employers when screening job applicants may include factors such as work

experience, gender and social background which are distributed unevenly within educational qualification categories. This is another potential line of explanation why individuals with similar levels of formal certification may encounter varying degrees of success in securing employment in jobs which make use of their graduate-level skills and knowledge.

The interview schedules with some potential employers reveal that they don't have a list of institutions from which they prefer to select graduates. However, few mentioned that they are with definite criteria such as the match of a curriculum to the employer's business and the reputation of the institution can affect the graduate's chances. These expressions are in line with Yorke's (n.d) argument that when a high proportion of the population has come with the demanded degree, selection procedures can call into play criteria that reproduce a (maybe implicitly) preferred composition of the organization's workforce. Moreover, Carfello & Cathy (n.d) suggested that interviewers may look for personality, ability, dependability, and reliability; and high grades may not necessarily ensure the above list of traits.

Figure 6.10

The Percentage Distribution of Engineering Graduates Via Length of Searching Employment by Gender

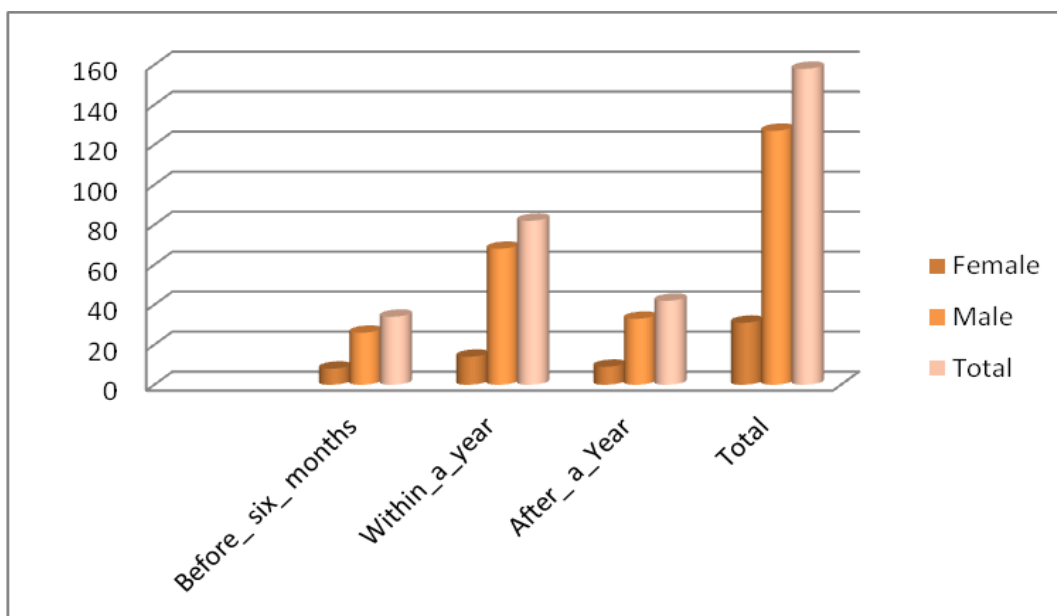


Figure 6.10 shows the percentage distribution of engineering graduates via length of job search by gender. It is traced that, of the total 31 female respondents only 8 (26%) graduates were found jobs within six months period of time; 14 (45%) within a year time; and 9 (29%) after a year. Similarly, of the 127 male respondents only 26 (20%) secured employment within six months' period of time after their immediate graduation, while the remaining 68 (54%); and 33 (26%) reported to get employment within and after a year period of time respectively. The comparative view of both sexes reveals that searching and finding jobs before six months is better observed among female graduates (26%), than their male counter parts (20%). This implies that female graduates received special attention by the Ethiopian labor market as well as employers. It is because, as it was reported by interviewee, Affirmative action is considered by the employers in order to hire female applicants than males even if their CGPA and achievements are similar within their male counter parts. Besides, the interview data confirmed that different job vacancies and announcements mainly encouraged woman to apply and compete for open positions. This study is in accord with (Kong, 2011) who found out that female graduates find jobs more easily than male graduates which is different from previous results, and they are more likely to go to graduate school. Furthermore, this finding supports the notion stated by MDG3 which decree and declared to promote gender equality and women empowerment. In relation to this, under the MDG3, the Ethiopian government policies also emphasized to implement and monitor the Equal Employment Opportunity (EEO) policy in all workplaces, and discourage occupational discrimination and gender segregation in labor markets. This finding is in accord with (Card, 2013) who found out that the wide disparities in the labor market status of men and women that characterized earlier generations have narrowed, many differences remain, and in some cases new gaps have opened up. Perhaps this finding is on the contrary of The Global Gender Gap Report (2010) which ranks Ethiopia as 121 among 134 countries in terms of the magnitude and scope of gender-based disparities and limited opportunities for women participation in the formal sector of employment.

Table 6.10**Pearson Chi2 Test on Length of Searching Employment by Graduates' Gender**

Length of searching employment	Gender		Total
	Female	Male	
Before_ six_ months	8	26	34
Within_ a_ year	14	68	82
After_ a_ Year	9	33	42
Total	31	127	158

$$\text{Pearson chi2 (2) = 0.7539 Pr = 0.686}$$

Table 6.10 exhibits length of searching employment as examined by gender of graduates. Consequently, the calculated Pearson Chi2 Test indicates that there is no statistically significant relationship between gender and length of job search (chi-square with two degrees of freedom = 0.7539, $p = 0.686$). It is to be noted that the above Table 6.10 shows the specific distribution of male and female graduates in the Ethiopian labor market. Currently, there is a lot of emphasis on gender equality in both the labour market of Ethiopia, which allows an affirmative action in the processes of recruitment and selection (CSC, 2003) and even awareness is raised in the community at large. However, what is observed in the above data is beyond the realization of this fact. As to Tomlinson (2012) has explained on, graduates' employment may be embodied through their so-called personal capital, entailing the integration of academic abilities with personal, interpersonal and behavioral attributes.

Figure 6.11

Frequency Distribution of Length of Job Search Via Age of Graduates

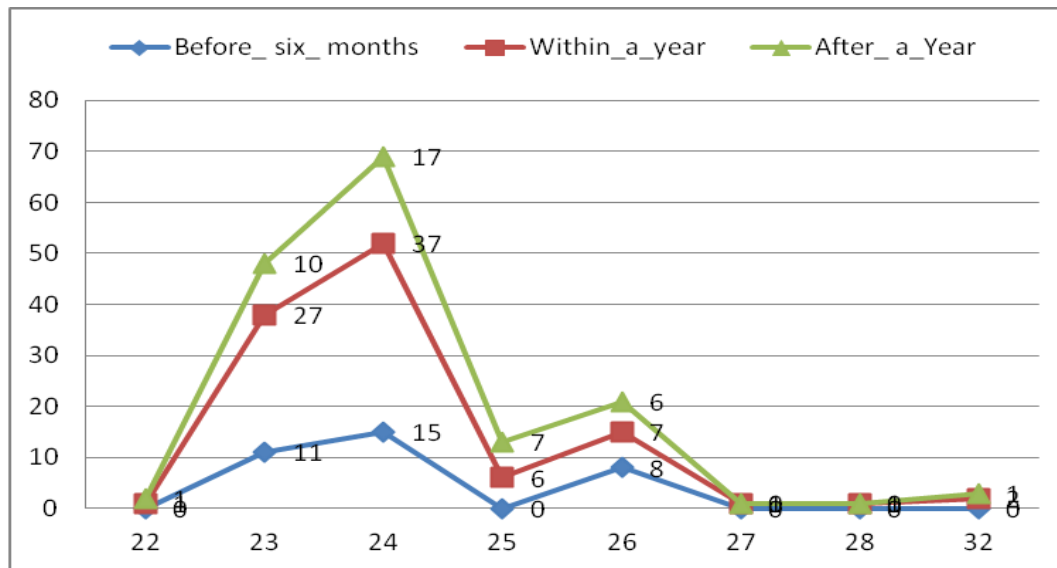


Figure 6.11 shows the relationship between age of graduates and length of job search. As can be seen from the line graph, the majority of graduates with in the age range of 22-24 were employed after a year 27 (17%) while 64 (40%) within a year and 25 (16%). Though, the age distribution of engineering graduates under this study is not dispersed, the youngsters with expected strength for work seem to remain idle beyond six months after graduation. This finding is similar with the UK Labour Force Survey (2013) who found out that the recent graduates and non-graduates aged 21 to 30 have both had consistently higher unemployment rates than older graduates and older non-graduates. This can be explained by the fact that young people will have been looking for work for a relatively short period of time, will probably lack labour market experience and are not likely to be on a clearly defined career path. According to UK Labour Force Survey (2013), since the 2008/09 recession, unemployment rates have risen for all groups but the sharpest rise was experienced by youngsters.

In the modern world where by graduates are to be recruited before leaving their University the long term unemployment considered to be wastage for the country and demoralization for the graduates. Unemployment and underemployment reflect the failure to make use of an important factor of production, labour, for fostering economic growth (Berihanu, Abraham & Hannah,

2005/7). In this regard ILO (2012) commented that creating decent and productive jobs for both graduate and non-graduate youths could result in a potential increase of the national GDP.

Table 6.11

Pearson Chi2 Test on Length of Job Search across Age of Graduates

Searching/finding employment	Age of Engineering Graduates at the Time of Graduation								
	22	23	24	25	26	27	28	32	Total
Before_ six_ months	0	11	15	0	8	0	0	0	34
Within_a_year	1	27	37	6	7	1	1	2	82
After_ a_Year	1	10	17	7	6	0	0	1	42
Total	2	48	69	13	21	1	1	3	158

Pearson chi2 (14) = 15.0985 Pr = 0.371

Fisher's exact = 0.259

Table 6.11 demonstrates age of engineering graduates at the time of graduation and tests if it has a role in finding employment. However, the values of some cells are found to be below 5 and even empty which lacks to meet the chi-square assumptions. In this case, extending the calculation to Fisher's exact test is compulsory, the reason is that when there are empty cells or cells with small frequencies, one shall request Fisher's exact test with the exact option (<http://www.ats.ucla.edu>). Thus, this analysis is made using the recommended Fisher's exact test and the calculated Pearson Chi2 Test on the relationship between age of engineering graduates and length of job search displays the absence of statistically significant relationship (chi-square with fourteen degrees of freedom = 15.0985, $p = 0.371$; and Fisher's exact = 0.259). The possible explanation for the absence of relationship between age and length of job search here implicitly shows that the full-time student enters in to the higher education at around the age of 18 and graduated at the age of 22 or 23. Nevertheless, it is found that there are older students as old as 32 years. These may be advanced standing students who joined the university after prior work experiences or students who might have opted to study part-time. For the latter subjects even employability has taken longer than six months' time after graduation which proves the loose link between age and employment. This finding is on contrary of Guney (2009) who found out

that there is a positive significant relationship between age and length of employment which states that older students are more likely to get employment than younger students.

More over, the conducted interview schedule with employers reveal that age matters most if graduates wish to be employed by the Maritime Industry otherwise it doesn't have any significant value for employers in another Industry.

Figure 6.12

Frequency Distribution of Length of Job Search Via Graduates' Mother Education

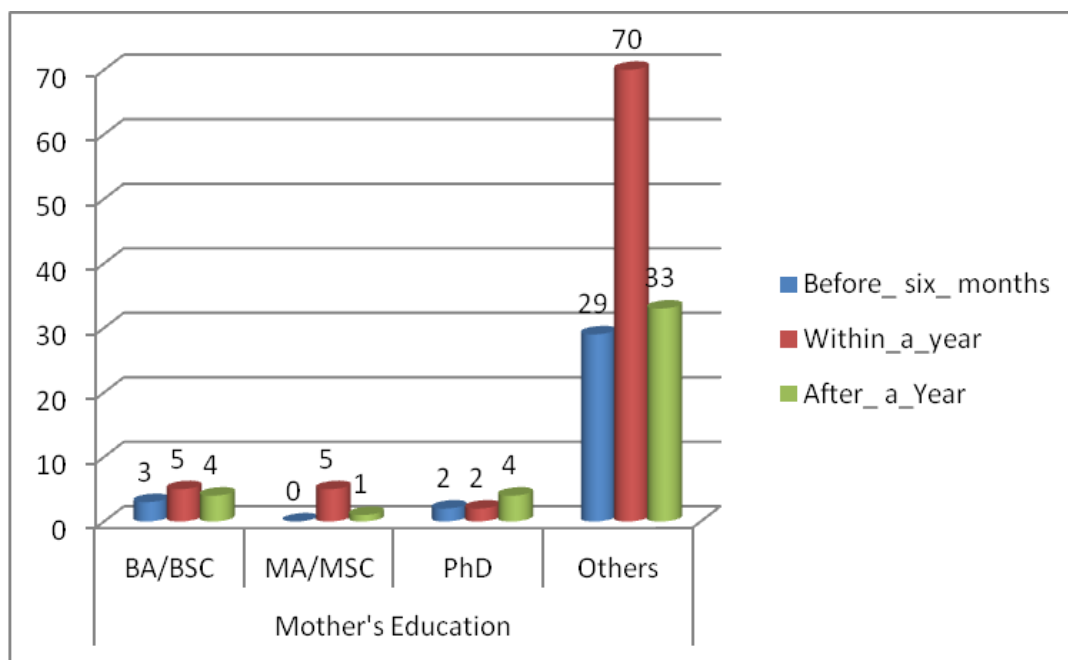


Figure 6.12 above demonstrates the relationships between mother's education and length of job search and it is possible to extract meaning that of the 132 (84%) graduates with a mother of below BA/BSC qualification, 29 (18%) secured job before six months, 70 (44%) within a year and the rest 33 (21%) after a year. Of the 12 (8%) graduates with a mother of BA/BSC qualification, only 3 (2%) secured job before six months' time, 5 (3%) within a year and the rest 4(3%) after a year. Of 6 (4%) graduates with a mother of MA/MSC qualification, 5 (3%) secured job within a year and 1 (1%) after a year while of 8 (5%) graduates with a mother of PhD qualification, only 2 (1%) secured job before six months' time, again 2(1%) within a year and the rest 4(3%) after a year. Though the number of graduates with educated mothers is scant, the data

gives a clue that being a graduate with educated mothers doesn't bring an immediate employment opportunity. This study is on the contrary of Guimarães & Sampaio's (2011) who identified some common determinants of students' performance and career prospects, the most common factors are those related with human capital of the parents and they concluded that the human capital of the mother is usually more closely related with the attainment of the student than is of the father.

Table 6.12

Pearson Chi2 Test on Length of Job Search via Graduates' Mother Education

Length of job searching/finding employment	Mother's Education				
	BA/BSC	MA/MSC	PhD	Others	Total
Before_ six_ months	3	0	2	29	34
Within_a_year	5	5	2	70	82
After_ a_Year	4	1	4	33	42
Total	12	6	8	132	158

Pearson chi2 (6) = 6.1509 Pr = 0.406

Fisher's exact = 0.420

Table 6.12 indicates the relationship between graduates' mother's education and length of job search. Nevertheless, the values of some cells failed to meet the chi-square assumptions by being empty or below 5 which calls for the corrected calculation using Fisher's exact test with the exact option. It is because, when there are empty cells or cells with small frequencies, one shall request the respective test (<http://www.ats.ucla.edu>). Meanwhile, this analysis is made using the suggested Fisher's exact test and the calculated Pearson Chi2 Test on the relationship between graduates' mother's education and length of job search indicated that there is a no statistically significant relationship (chi-square with six degrees of freedom = 6.1509, $p = 0.406$; and Fisher's exact = 0.420).

This finding may be different from Melink & Pavlin (2009) who have found that a higher level of parents' education positively impacts the extent of the matching of one's education and skills

in the current job in the domains of Science and Engineering. Moreover, to the same author, the higher education of one's parents is also associated with a better engineering work-life balance. Of course, the presented data in this study shows that Mothers' educational profile of the majority of engineering graduates lie at 'Others' category and it looks that those graduates who have educated mothers are low in number which makes difficult to see relationships between mothers' education and length of job search. Besides, it is to be noted that the 'Others' category was left open to be specified by the respondents and educational qualifications of the 132 (84%) graduates' mother were found to be rated below BA/BSC.

Figure 6.13

Frequency Distribution of Length of Job Search and Graduates' Father Education

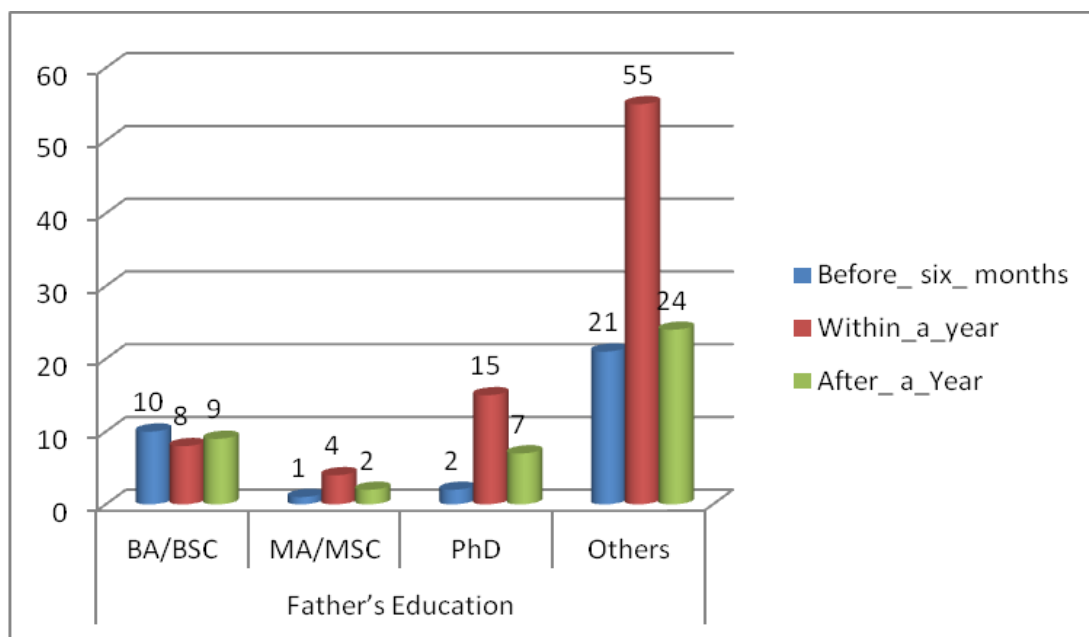


Figure 6.13 above displays the relationships between father's education and length of job search. Of the 100 (63%) graduates with a father of below BA/BSC qualification, 21 (13%) secured job before six months' time, 55 (35%) within a year and the rest 24 (15%) after a year. Of 27 (17%) graduates with a father of BA/BSC qualification, 10 (1%) secured job before six months' time, 8 (5%) within a year and 9(5%) after a year. Of 7 (4%) graduates with a father of MA/MSc qualification, only 1(1%) secured job before six a period of six months, 4 (6%) secured job

within a year and 2 (1%) after a year while of 24 (15%) graduates with a father of PhD qualification, 2 (1%) secured job before six months time, 15 (9%) within a year and 7 (4%) after a year.

Table 6.13

Pearson chi2 Test on Length of Job Search Via Graduates' Father Education

Length of job searching/finding employment	Father's Education			
	BA/BSC	MA/MSc	PhD	Others
Before_ six_ months	10	1	2	21
Within_a_year	8	4	15	55
After_ a_Year	9	2	7	24
Total	27	7	24	100

Pearson chi2 (6) = 9.2498 Pr = 0.160

Fisher's exact = 0.130

Table 6.13 above indicates the relationship between graduates' father education and length of job search. Nonetheless, the value of some cells is found to be below 5 which failed to meet the chi-square assumptions. In this context, i.e., when there are empty cells or cells with small frequencies, one can request Fisher's exact test with the exact option (<http://www.ats.ucla.edu>). Therefore, this analysis is made using the recommended Fisher's exact test. Consequently, the calculated Pearson Chi2 Test on the issue indicated that there is no statistically significant relationship between graduates' father education and length of job search (chi-square with six degrees of freedom = 9.2498 , p = 0.160; and Fisher's exact = 0.130). This finding is opposite to Stijn (2012) who found out that graduates' with less educated fathers are more likely to be unemployed.

Figure 6.14
Frequency Distribution of Length of Searching Employment by Graduate Parental Income

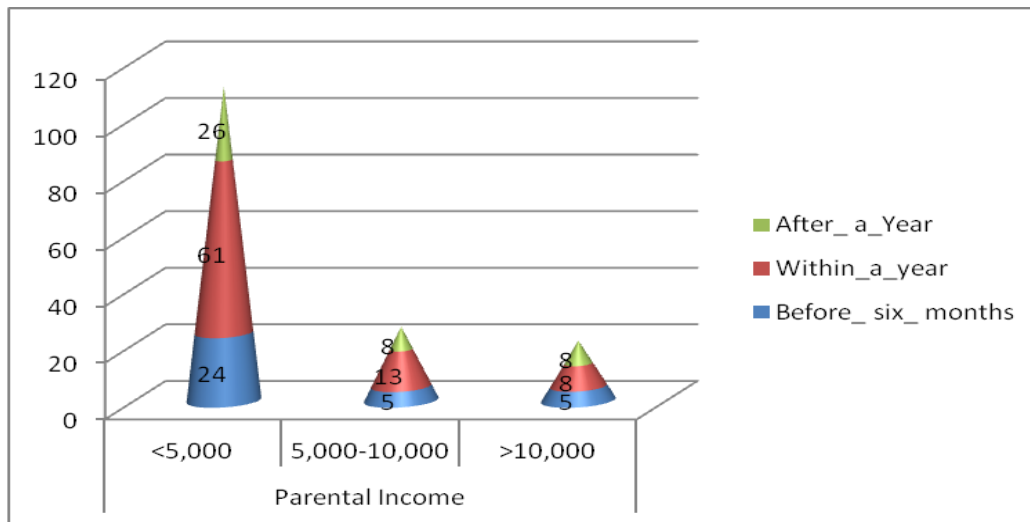


Figure 6.14 above displays the relationship between parental Income and length of job Searching. Of the 111 (70%) graduates whose monthly parental Income is < 5,000, 24 (15%) secured job before six months time, 61 (39%) within a year and the rest 26 (16%) after a year. Of 26 (16%) graduates whose parental Income is 5,000-10,000, 5 (%) secured job before six months' time, 13 (8%) within a year and 8 (5%) after a year. Of 21 (13%) graduates whose monthly parental Income is >10,000, 5 (3%) secured job before six months' time, 8 (5%) within a year and 8 (5%) after a year. This implies that parental income doesn't have a positive effect on the graduates' career prospects. On the contrary, more recent studies find positive effects of parental income on adult wages and employment but there remains uncertainty about the size of the effect (Mayer, 2010).

Table 6.14

Pearson Chi2 Test on Length of Searching Employment by Graduates' Parental Income

Length of job searching/finding employment	Parental Income			Total
	<5,000	5,000-10,000	>10,000	
Before_ six_ months	24	5	5	34
Within_a_year	61	13	8	82
After_ a_Year	26	8	8	42
Total	111	26	21	158

$$\text{Pearson chi2 (4)} = 2.7391 \quad \text{Pr} = 0.602$$

Table 6.14 revealed the relationship between Parental Income and Length of searching employment. Nevertheless, the calculated Pearson chi2 test prove that that there is no statistically significant relationship between parental income and length of job search (chi-square with four degrees of freedom = 2.7391, $p = 0.602$). It is important to note the frequency distribution in Table 6.14 which shows that mostly engineering graduates come from low income family (<5,000/month) and they had got employment after six months (within and after a year).

6.6 The Supportiveness of the HEIs to the Subsequent Employment of AAU-AAiT and BDU-BiT Graduates

Under this title, the Supportiveness of the Structure, Curriculum, Study Conditions of Higher education and Study Behavior of Individuals to the Subsequent Employment of AAU-AAiT and BDU-BiT Graduates was presented through Table 6.15.

Table 6.15**T-Test on the Contribution of Higher Education Structure to Graduate Employment**

Group Statistics						
Items	University	Mean	Std.	t	df	Sig.(2 tailed)
The University itself (i.e., If it involves employers in different decision making processes and if it prepares events in order to invite employers to visit and hire graduates)	AAU-AAiT (n=70)	2.19	1.254	.615	156	.539
	BDU-BiT (n=80)	2.07	1.143			
University –Industry linkage Office in the Institute of Technology (IoT) (i.e., If it placed graduates in Internship by considering their prospects and future careers)	AAU-AAiT (n=70)	2.69	1.043	-1.449	156	.149
	BDU-BiT (n=80)	2.92	.985			
Alumni Office/Career Guidance and Counseling Services /Career Advising Office (i.e., If it provides advice and trainings on the job searching process and career opportunities of prospective graduates)	AAU-AAiT (n=70)	1.51	.897	-1.255	156	.211
	BDU-BiT (n=80)	1.70	.984			
Your Department or the Academic Staff (i.e., If efforts were made by your teachers in recommending you for an appropriate job and if it gives an entrepreneur trainings)	AAU-AAiT (n=70)	2.57	1.111	-1.022	156	.308
	BDU-BiT (n=80)	2.75	1.075			
Student Council (i.e., If it prepared different events like job fairs, role model presentations etc. in order to promote your fields of study)	AAU-AAiT (n=70)	2.26	1.441	1.257	156	.210
	BDU-BiT (n=80)	2.01	1.011			
Grand Mean of Higher Education Structure	AAU-AAiT (Mid-Point+15)	11.2143	3.38750	-.453	156	.651
	BDU-BiT (Mid-Point+15)	11.4545	3.24802			

The results of the descriptive analysis for items related to the contribution of higher education structure to the graduate employment are shown in Table 6.15 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from ‘1’ (Very low) to ‘5’ (Very high).

From the mean scores, it seems, graduates in AAU-AAiT and BDU-BiT rated all the 5 items below the mid-point (M=3.0). The grand rated mean scores for Higher Education Structure from

both Institutes (AAU-AAiT= 11.2143; BDU-BiT =11.4545) also stretched out below the mid-point (M=15.0). This reflects that the organizational structure of AAU-AAiT and BDU-BiT did not contribute for graduate employment since graduates themselves rated all the items either 'low; or 'very low'. For instance, the involvement of employers in different decision making processes of the University and the preparation of events in order to invite employers to visit and hire graduates appears to be low (AAU-AAiT, M = 2.19; and BDU-BiT, M =2.07). In addition, the placement of graduates in Internship through University –Industry linkage traces to be limited (AAU-AAiT, M = 2.69; and BDU-BiT, M =2.92).

Further, the provision of Career Guidance and Counseling Services or providing advices and trainings on the job searching process either by Alumni Office/Career Advising Office is found to be unsatisfactory in both Institutes (AAU-AAiT, M = 1.51; and BDU-BiT, M =1.70). Moreover, graduates tend to rate lower on the efforts of their respective departments and the Academic Staff either in recommending them for an appropriate job or in providing entrepreneurial trainings (AAU-AAiT, M = 2.57; and BDU-BiT, M =2.75). Above all, the works of the Council of Students in preparing different events like job fairs, role model presentations etc. in order to promote their respective fields of study is found to be low (AAU-AAiT, M = 2.26; and BDU-BiT, M =2. 01).

The conducted comparisons and test- of significance on the 'Higher Education Structure' category displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar. So there is no statistically significant difference between both Institutes [$t_{(156)} = -.453, p > .05$]. Therefore, the absence of differences in results implies that graduates of both universities sense the lack of supportive organizational structure for the graduate employability. Besides, an open ended question was prepared on the contribution of the University Organizational Structure to their employment. One of the respondents from BDU-BiT reported "It seems the university doesn't care about employment of its graduates. The only thing I remembered is that placement for internship, which I saw is possible, mainly by the efforts of students themselves. I believed that the university should do a lot both in creating mental readiness to the job and the job opportunity" Another graduate in the same University added "however, student Union usually focused on solving the day to day Administrative problems, I

believed that it can work more on preparing being graduates for their upcoming endeavors by hosting different seminars, workshops and invite successful to share experience with students”.

Similarly, graduates from AAU-AAiT, in the open ended question, reported that while efforts made by the University-Industry linkage to significant placement of internships are appreciable because most of us today are working where we were an intern, the University contribution in preparing students to the job market is very little. Still, it doesn't have career guidance to help students to prepare resumes, job search and interview tips, just they trained and leave us, and yet there is the gap between the students and HEIs to deal with employment.

To this connection, the corresponding teachers of 2012 engineering graduates were asked on the way how to support their graduates to get subsequent employment. Most of them replayed that of course, our role is not big on their employment, but teaching entrepreneur courses in their year of graduation and recommending them for future careers are some of the contributions we have made. In addition to this, teachers were asked whether they conducted Tracer study or not to obtain information about possible deficiencies in the educational process and the learning process and can form the basis for planning activities for the improvement in the future. In this regard, teachers from BDU-BiT and AAU-AAiT replayed that they don't have experience to conduct tracer study except little efforts made by BDU-BiT by the year 2014. In 2014, BDU-BiT started to conduct a Tracer study to follow where their graduates are working and to receive feedback to improve the quality of the study programmes and more specific, to revise the curriculum, in order to enhance the employability of the being graduates based on the demand of the current labor market. It is believed to be an initial point of graduate employment issue. From this point of view, it is possible to infer that the supportiveness of the University itself, University-Industry linkage, Alumni Office/Career Guidance and Counseling Services, Department or the Academic Staff and Student Council are still limited.

This finding is in accord with (Kinash, 2015) who found out that there is the gap between the graduates and the higher education personnel as well as Career development center, employers, teachers and students in how to support graduates to heighten their employability in Australia.

Further over, the contribution of higher education structure variables to the job search of engineering graduates was also estimated by using multinomial logistic regression analysis. Of

course, factor analysis was generated prior to multinomial logistic regression analysis, and results were reported under Tables 6.16 and 6.17 respectively.

Table 6.16

Rotated Factor Loadings (pattern matrix) and Unique Variances of Higher Education Structure

Variable	Factor1	Factor2	Uniqueness
The University it self	0.4996	0.0158	0.7501
University-Industry linkage Office	0.3833	0.2161	0.8064
Alumni Office	0.4695	0.4097	0.6118
Department/ Academic Staff	0.4197	0.2063	0.7813
Student Council	0.0806	0.4595	0.7824

Table 6.16 depicts the factor analysis of the Higher Education Structure variables. Higher Education Structure is made up of five constructs. These are, the University itself, University–Industry linkage Office, Alumni Office/Career Guidance and Counseling Services, Department or the Academic Staff and student council respectively. In order to examine the correlation and strength of Higher Education Structure variables, factor analysis was conducted and results revealed that University itself (0.4996) influences factor1 the most and Student Council (0.0806) has lowest influence on factor1. However, student Council (0.4595) influences factor2 the most and Alumni Office (0.6118) the least. According to Melink & Pavlin (2009, the improvement of higher education quality, efficiency and the competitiveness of student employability requires some changes to HE management system such as decision making (strategic planning), funding and resource allocation (budgeting), performance measurement and accountability (transparency, academic responsibility, assessment), system management (federal, state, region, local community, etc.); institutional management (University, campus, etc.); and academic management (faculty, department, institute, etc.). Further, study program characteristics (curriculum, orientation etc.); selection policies, reception and orientation for student entering; teaching and learning modes, study-related experiences (apprenticeship and internship experiences, international study opportunities); support services to students, and etc. have

something to do with the structure. Therefore, the rated responses about the supportiveness of the structure tend to be limited.

Above all, the strong factor, Factor1, was taken to generate the multi-nominal logistic regression analysis and results are reported in Table 6.17 below.

Table 6.17
Higher Education Structure on Length of Job Search

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Before_ six_ months					
Higher Education Structure _factor	.2700278	.3120885	0.87	0.387	-.3416544 .8817099
_cons	-.8736129	.2046477	-4.27	0.000	-1.274715 -.4725107
within_a_year	(base outcome)				
After_ a_ Year					
Higher Education Structure _factor	.4670045	.2847591	1.64	0.101	-.091113 1.025122
_cons	-.6780827	.1922763	-3.53	0.000	-1.054937 -.301228

$$Odds_{\text{Being employed Before six months_Being employed with in a Year}} = e(-0.87 + 0.27) = 0.55$$

The odds of being employed before six months are 45% lower than those for employed within a year for each 1-Unit increase in Higher Education Structure _factor.

$$Odds_{\text{Being employed with in a Year_Being employed after a Year}} = e(-0.68 + 0.46) = 0.80$$

The odds of being employed within a year are 20% lower than those for employed after a year for each 1-Unit increase in Higher Education Structure _factor.

$$Odds_{\text{Being employed before six months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.55}{0.80} = 0.69$$

The odds of being employed before six months versus employed after a year are 31% lower for each unit increase in Higher Education Structure_factor.

As can be seen from the percentages computed from the exponential functions, graduates are less likely to secure jobs within a very short period of time after their immediate graduation. This implies that the overall contribution of the Higher Education structure variables in increasing the probability of being employed within six months' period of time is insignificant in both AAU-AAiT and BDU-BiT. Furthermore, the predicted probability of employment and the supportiveness of the Higher Education organizational Structure can be seen from the two-way scatter plot:

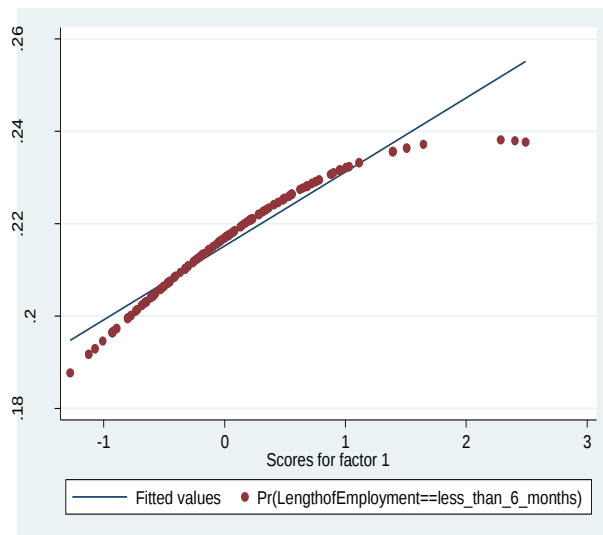


Fig 6.15 Before Six Months Vs Higher Education Structure _factor

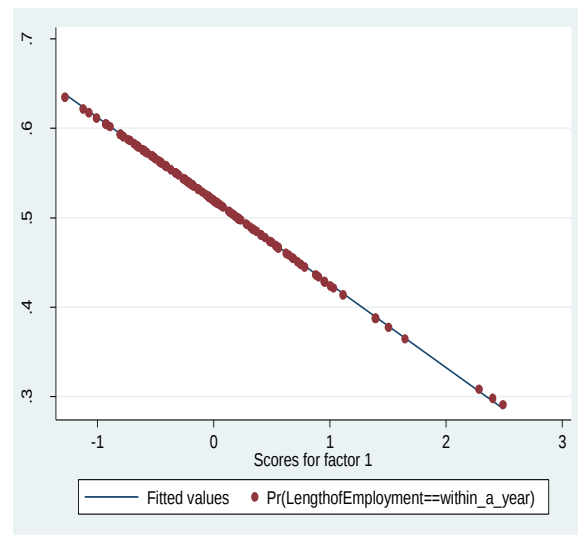


Fig. 6.16 Within a Year Vs Higher Education Structure _factor

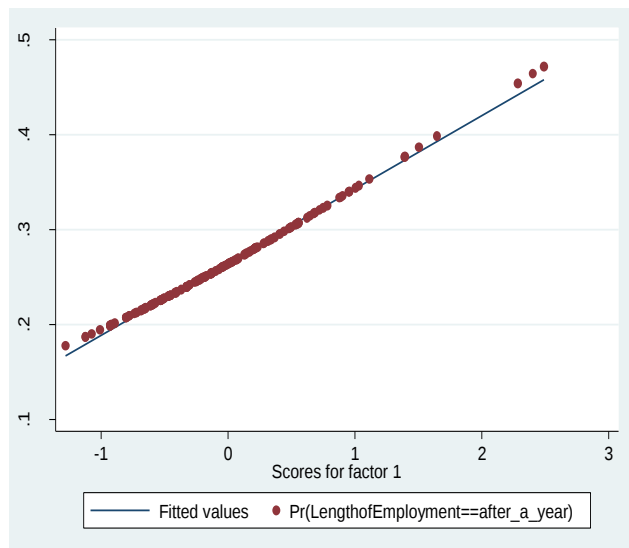


Fig. 6.17 After a Year Vs Higher Education Structure _factor

As can be seen from the descriptive analysis, graduates in AAU-AAiT and BDU-BiT rated all the 5 items below the mid-point ($M=3.0$). Seemingly, Figure 6.15, Figure 6.16 and Figure 6.17 displays the probability of being employed before six months is still lower than that of being employed within and after a year. From this, it is possible to deduce that even though, there is a strong relationship between HE structure and length of job search, both Institutions organizational structure is not supportive to graduates' for securing jobs before six months' period of time after their immediate graduation.

Table 6.18

T-Test on the Role of Higher Education Study Conditions (Facilities) to the Graduates' Employment

Group Statistics						
Items	University	Mean	Std.	t	df	Sig. (2-tailed)
The facilities in the university (i.e., libraries, laboratories, workshops, etc.)	AAU-AAiT (n=70)	3.19	.952	-1.077	156	.283
	BDU-BiT (n=88)	3.34	.856			
Information and Communication Technology	AAU-AAiT (n=70)	2.81	.952	-.588	156	.558
	BDU-BiT (n=88)	2.90	.831			
Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project	AAU-AAiT (n=70)	2.41	1.083	-.494	156	.622
	BDU-BiT (n=88)	2.50	1.083			
Peer-learning (Contacts with fellow students)	AAU-AAiT (n=70)	3.33	1.073	-.545	156	.587
	BDU-BiT (n=88)	3.42	1.036			
Engagement with Field-based conferences, seminars, forums,	AAU-AAiT (n=70)	2.23	.904	1.361	156	.176
	BDU-BiT (n=88)	2.05	.787			
Grand Mean of Higher Education Study Condition	AAU-AAiT (15)	13.9714	3.22567	-.482	156	.630
	BDU-BiT (15)	14.2045	2.84124			

The results of the descriptive analysis for items related to the role of the higher education study conditions (facilities) to employment of graduates are shown in Table 6.18 above. Informants

were asked to rate for each item, measured by a five-point Likert scale ranging from '1' (Very low) to '5' (Very high). From the mean scores, it seems, graduates in AAU-AAiT and BDU-BiT rated 3 items below the mid-point ($M=3.0$). Those are items related to 'the use of Information and Communication Technology (AAU-AAiT= 2.81; BDU-BiT =2.90)'; 'Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project works, etc (AAU-AAiT= 2.41; BDU-BiT =2.50)' and 'Engagement with Field-based conferences, seminars, forums, workshops, etc (AAU-AAiT= 2.23; BDU-BiT =2.05)'. These imply services related to the specified items were found to be demanding and challenging to the engineering graduates of the case universities in the year 2012.

Essentially, the role of study programme characteristics in determining labour market success is a key issue. Study conditions are found to be extremely interesting predictors' different aspects of labour market success across domains. Especially, in engineering domain, according to Melink & Pavlin, (2009:74), demanding programmes decrease job security, career development opportunities, and a feeling of independence in one's current work. Taking this into consideration, it is argued that in the same domain, more practically-oriented programmes (less demanding but being a good basis for performing current tasks) lead to higher levels of labour market success factors. Again, taking an extra higher education programmes and the study duration together with one's vocational-oriented secondary education variables positively determine job creativity and autonomy.

In contrast, two items in both Institutions were rated above the midpoint ($M=3.0$). These are the facilities in the university (i.e., libraries, laboratories, workshops, etc.) (AAU-AAiT= 3.19; BDU-BiT =3.34) and Peer-learning (Contacts with fellow students) (AAU-AAiT= 3.33; BDU-BiT =3.42).

Besides, graduates were asked an open ended question dealing with the prevalent study conditions while they were in HEIs. Consequently, the most frequently mentioned points among respondents of both universities revolve around the importance attached to their exposure for Lab equipments and Laboratory facilities during University life and skill and knowledge transferability while searching for job. However, some respondents in BDU-BiT indicated their murmur that tools and equipments were not used properly in University campuses rather some Lab equipments and Laboratory facilities stay locked and the reasons given were due to

expensiveness in price or rarity in abundance. Unfortunately, the responses show that it was common to observe MSC students in BDU-BiT with better access for such apparatuses and services. Therefore, it can be argued that the experience of engineering graduates to be benefited from some aspects of study conditions is limited. Responses for the interview schedule with engineering instructors from both case universities were about the proper intensity of the use of internships and work placements as a teaching mode, group assignments, problem-based learning and more interactive modes of teaching than traditional methods like too many oral presentations, lectures, and intensive use of written assignments which could have contributed to the search for and success in finding employment.

The conducted comparisons and test- of significance on the ‘Higher Education Study Conditions’ category displays that responses of graduates in both AAU-AAiT, and BDU-BiT are traced to be nearly similar so that there is no statistically significant difference between the two universities with regard to ‘the help of Higher Education Study Condition to the graduate employment’ $[(t(156) = -.482, p > .05)]$. Therefore, the absence of differences in results implies that graduates of both universities sense the lack of supportive study conditions or facilities for graduate employability.

Moreover, the extent of which the study conditions at higher education institutions affected the employment opportunities as well as job search of engineering graduates was also tasted by using multinomial logistic regression analysis. Prior to the multinomial logistic regression analysis, factor analysis was conducted and the results are reported above in Table 6.18.

Table 6.19**Rotated Factor Loadings (pattern matrix) and Unique Variances of Higher Education Study Conditions (Facilities)**

Variables	Factor1	Factor2	Uniqueness
The facilities in the university (i.e., libraries, laboratories, workshops, etc.)	0.3006	0.3828	0.7631
Use of Information and communication technology	0.4591	0.4639	0.5741
Off-Class contacts	0.5372	0.2391	0.6543
Peer-learning	0.1117	0.4071	0.8218
Engagement in field based conferences, workshops and seminars	0.4151	0.1315	0.8104

Table 6.19 shows off-class contacts with instructors (0.5372) influence factor1 the most and peer-learning (0.1117) has lowest influence on factor1. Use of information and communication technology (0.4639) influences factor2 the most and engagement in field based conferences, workshops and seminars (0.1315) influence the least. As it was mentioned by Fuchi (2010) cited in Melink & Pavlin, (2009:156):

The Engineers contribution to technological innovation applied in the market place is indispensable for achieving higher economic growth as well as for creating new jobs, securing clean energy supply, sustaining natural resources and tackling the challenges associated with climate change...this important contribution to economic growth and development expected from engineers is, however, dependent on a sound education via study programmes which are covering current needs and developments.

Thus, the influential factors in study conditions can be cited as having a strong basis for graduates of engineering transit to work life. Accordingly, the strong factor (factor1) was chosen to generate the multinomial logistic regression analysis and results reported in Table6.20 below.

Table 6.20

Higher Education Study Condition Via Length of Job Search

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Before _six _months						
Higher Education Study Condition _factor	.4980051	.3229092	1.54	0.123	-.1348853	1.130895
_cons	-.8794024	.2064422	-4.26	0.000	-1.284022	-.4747831
Within_a_year	(base out come)					
After_a_Year						
Higher Education Study Condition _factor	.5278279	.3018015	1.75	0.080	-.0636922	1.119348
_cons	-.6712668	.1924363	-3.49	0.000	-1.048435	-.2940987

$$Odds_{\text{Being employed before six months_Being employed within a Year}} = e(0.49 + -0.88) = 0.68$$

The odds of being employed before six months are 32% lower than those for employed within a year for each 1-Unit increase in Higher Education Study Condition_factor.

$$Odds_{\text{Being employed within a Year_Being employed after a Year}} = e(-0.67 + 0.53) = 0.87$$

The odds of being employed within a year are 27% lower than those for employed after a year for each 1-Unit increase in Higher Education Study Condition_factor.

$$Odds_{\text{Being employed before six months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.68}{0.87} = 0.78$$

The odds of being employed before six months versus employed after a year are 22% lower for each unit increase in Higher Education Study Conditon factor.

Above all, from the exponential functions and percentages it is possible to infer that the AAU-AAiT and BDU-BiT facilities (study conditions) are not supportive for graduates in order to be

successful in the job market by obtaining employment before six months' period of time. This fact is also triangulated by the following scatter plots:

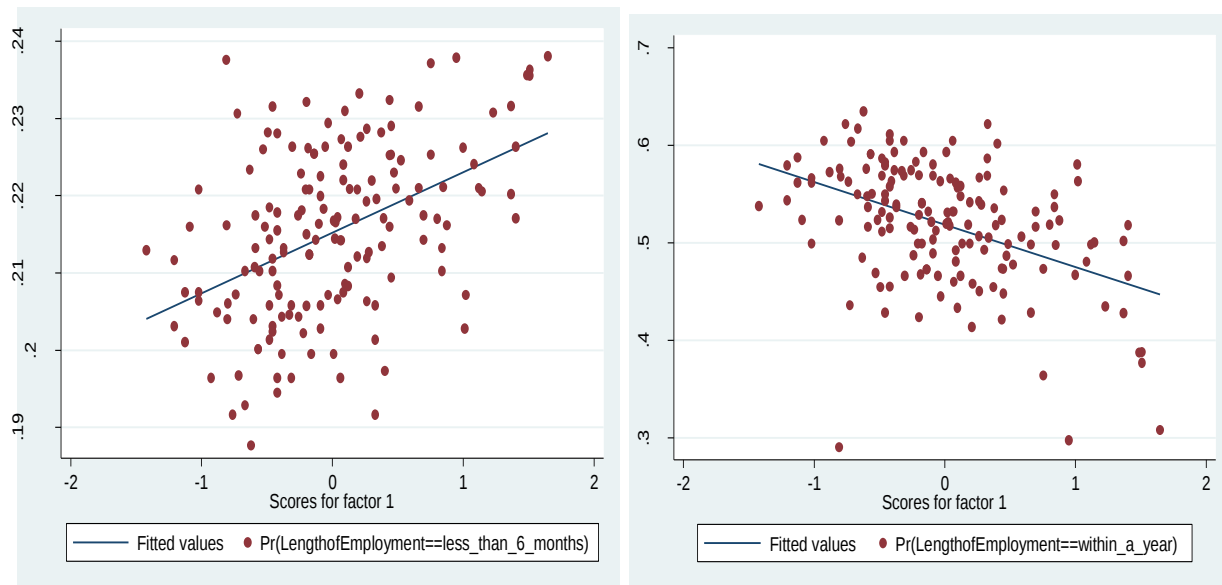


Fig. 6.18 Before Six Months Vs Higher Education Study Condition _factor Fig. 6.19 within a Year Vs Higher Education Study Condition _factor

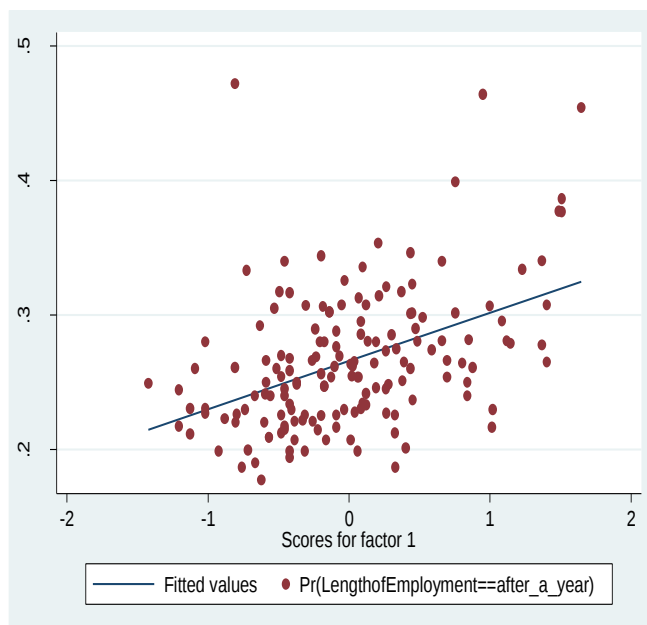


Fig. 6.20 More than a Year Vs Higher Education Study Condition _factor

However, in the descriptive analysis of items related to the role of the higher education study conditions to employment; two items (facilities in the university and Peer-learning); in both

Institutions were rated above the mid-point (M=3.0), the probability of being employed before six months is still lower than that of being employed within and after a year as it can be seen from the above scatter plots (Figure 6.18, Figure 6.19 and Figure 6.20).

Table 6.21

T-Test on the Relevance of Higher Education Curriculum to the Employment of Engineering Graduates

Group Statistics						
Items	University	Mean	Std.	t	df	Sig.(2-tailed)
Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and soio-economic realities of the nation)	AAU-AAiT (n=70)	3.44	1.137	-1.077	156	.283
	BDU-BiT (n=88)	3.74	.988			
Contents of the Courses of the study (i.e., If the Multi-disciplinarity is entertained in the courses to equip graduates with soft-skills and hard-skills from diverse areas).	AAU-AAiT (n=70)	3.44	1.211	-.588	156	.558
	BDU-BiT (n=88)	3.82	.865			
Methods of Delivery (i.e., Modern and active learning methods)	AAU-AAiT (n=70)	3.26	1.151	-.494	156	.622
	BDU-BiT (n=88)	3.38	.875			
Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods)	AAU-AAiT (n=70)	3.16	1.199	-.545	156	.587
	BDU-BiT (n=88)	3.60	.929			
The Instructional aides (Teaching Materials) (i.e., If there are appropriate teaching aids in order to facilitate the teaching learning processes so as to be effective)	AAU-AAiT (n=70)	3.29	1.065	1.361	156	.176
	BDU-BiT (n=88)	3.11	.863			
Grand Mean of Higher Education Curriculum	AAU-AAiT (15)	16.5857	4.22722	-1.778	156	.077
	BDU-BiT (15)	17.6477	3.28368			

The results of the descriptive analysis for items related to the relevance of the Higher Education Curriculum to employment are shown in Table 6.21 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from '1' (Very low) to '5' (Very high).

From the mean scores, it seems, graduates in AAU-AAiT and BDU-BiT rated all the 5 items above the mid-point ($M=3.0$). The grand mean scores for the relevance of the Higher Education Curriculum from both Institutes (AAU-AAiT= 16.5857; BDU-BiT =17.6477) also found above the mid-point ($M=15.0$). This reflects that the higher education curriculum of AAU-AAiT and BDU-BiT is relevant for the graduate employment since graduates themselves rated all the items above the moderate level. For instance, Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and socio-economic realities of the nation) appears to be high (AAU-AAiT, $M = 3.44$; and BDU-BiT, $M = 3.74$). In addition, Contents of the Courses of the study (i.e., If the Multi-disciplinarity is entertained in the courses to equip graduates with soft-skills and hard-skills from diverse areas) tends to be important (AAU-AAiT, $M = 3.44$; and BDU-BiT, $M = 3.82$).

Further, Methods of Delivery (i.e., Modern and active learning methods) is found to be vital in both Institutes (AAU-AAiT, $M = 3.26$; and BDU-BiT, $M = 3.38$). Moreover, graduates tend to rate higher on the Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods) (AAU-AAiT, $M = 3.16$; and BDU-BiT, $M = 3.60$). Above all, The Instructional aides (Teaching Materials) (i.e., If there are appropriate teaching aids in order to facilitate the teaching learning processes so as to be effective) is found to be high (AAU-AAiT, $M = 3.29$; and BDU-BiT, $M = 3.11$).

However, evidence from the open ended questions revealed that the engineering curriculum is not practical. One of AAU-AAiT Civil Engineering graduates stressed that “engineering should be practice-oriented and every course should have some visible output (product) that demonstrates what the course is about”. He continued to explain that “from my experience, most fresh graduates didn’t know the actual practice in the construction industry prior to their graduation because employers usually let them to learn things from workers who didn’t have formal and strong educational background”. Therefore, the explanation given by this respondent tends to be concerned on the issue quality which in turn calls for HEIs to be much concerned about their curriculum relevance.

Informants among potential employer organizations were asked about their role on engineering curriculum development of HEIs. Key informants from Ethiopian Telecommunication Corporation (EthioTelecom), Ethiopian Electric Power Corporation (ELPA), BGI Ethiopia PLC (Beer Industry), Sugar Corporation, MOHA Soft Drinks Industry S.C, East Africa Coca Cola Bottling Company, VimoVenco Engineering PLC, Ethiopian Shipping and Logistic Service, Sunshine Construction, MOENCo-Ethiopia (Toyota Motor Industry), Bahir Dar Textile Share Company expressed, in one way or the other, they have been involved in curriculum design or review, guest-speaking, IT skills development trainings, work placement/ experiential learning opportunities, and career / job fairs organized with involvement of employers.

The conducted comparisons and test- of significance on the ‘relevance of higher education curriculum’ category displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar so there is no statistically significant difference between both Institutes [$(t_{(156)} = -1.778, p > .05)$].

Therefore, the absence of differences on the responses of graduates of both universities on the relevance of the higher education curriculum may be emerged from the harmonized curricula of AAU-AAiT and BDU-BiT. In relation to this, the interview conducted with teachers revealed that the reason to harmonise and revise the existed engineering curriculum was many and one of them is just to address the needs of the current labor market. In addition to this, some of teachers from BDU-BiT and AAU-AAiT mentioned the following reasons for the revision and harmonization of the engineering curriculum. The goal of the substituted curriculum was condemned to fail in meeting the current labor market needs, national goals, governmental policies and strategies. Also identified shortcoming to the curriculum was lack of clarity with regard to the graduate profile and failure to include clear course objectives. Therefore, respondents assured that the current engineering curriculum which is nationally harmonized and being implemented for the 2012 graduates is believed to correct the observed weaknesses and filled in the necessary gaps.

Likewise, some teachers in both case universities explained as the curriculum in place has incorporated new demands on graduates towards becoming competitive in the labor market in particular and contributing socio-economic development in general. Informants continued to state that the engineering curriculum has geared its focus on skill oriented and practice based

courses. Besides, some senior lecturers from both BDU-BiT and AAU-AAiT added that there are relevant mechanisms of quality assurance, human resource development, and better state of capacity building in material resources like laboratories, workshops, and libraries.

Other than the interview schedule, this study attempted to analyse documents, specifically, rationales of engineering curriculum on the bases of their relevance to the Education and Training Policy and Strategy (1994); the Education Sector Development Program (1997-2017); the Industrial Development Strategy (2003); the Plan for Accelerated and Sustained Development to End Poverty (2006); and Growth and Transformation Plan (GTP I).

Accordingly, of the curriculum rationales of electrical engineering, one can find relevant statements to the graduate labor market: For instance, there are descriptions which are read as:

‘Over the years the program has trained students and has now reached a conclusion where graduates of its undergraduate program are equipped with sufficient theoretical and practical skills that would enable them to be engaged in and work at the Electrical/Electronic sector of the national economy’; ‘...so far, the undergraduate program is designed to meet the needs of the main employers of the graduates in the operation and maintenance of electrical and electronic equipment and machines’; ‘It is still logical to maintain the broad nature of the undergraduate curricula that affords the graduates versatility in terms of employment’; and ‘The aim is to produce electrical engineers who are flexible across various disciplines; and are able to apply their knowledge and skills to lead multi-disciplinary teams to solve the increasingly complex problems of the industry and technology’. These all sample statements (e.g. Revised and harmonized BSC Curriculum for bachelor of science degree in electrical engineering, 2014: 5) indicate that the attention given by the curriculum of electrical engineering field towards Education and Training Policy and Strategy (1994); the Education Sector Development Program (1997-2017); the Industrial Development Strategy (2003); the Plan for Accelerated and Sustained Development to End Poverty (2006); and Growth and Transformation Plan (GTP I).

Again, from the statement put in the curriculum rationale of Chemical Engineering, one can find connections between the curriculum, and the Growth and Transformation Plan Policy Matrix of Volume II, November (2010:1) through a description read as: ‘...there are no enough

professionals of chemical engineers in different sectors of industry which the government has given priority such as sugar industries, textiles, leather and food processing and in general chemical industries; considered as the critical infrastructure for the country to change the living standards of the people'. From this, it is possible to understand that the curriculum under discussion is planning to fit to the industrial requirements of the country. In addition, the point that has been stated as 'Chemical engineering can play significant role to alleviate poverty and food shortage, as well as prevention of environmental deterioration from traditional practice' has something to do with the national objective of poverty reduction strategy (Revised and harmonized of BSC Curriculum of Chemical Engineering, 2014).

Regarding Civil Engineering, the curriculum rational of the program is stated to be responsible for producing engineers who are knowledgeable and skilled to: 'build and maintain bridges, highways, railways, tunnels, airports, dams, water treatment and distribution systems and large buildings' is the Civil Engineering one. The curriculum rationale for the respective field of study indicates its role in the socio-economic development of the country mainly on 'environmental projects, such as ecological restoration, waste containment, and soil remediation sites or design of a safe and efficient transportation system'. By producing competent graduates in these circumstances, the program meant to meet the requirements of the seven strategic pillars decree and declared in the Growth and Transformation Plan for Ethiopia's development efforts: i.e., sustain rapid and equitable economic growth, preserve agriculture as a major source of economic growth, create favorable conditions for industry to play a key role in the economy, infrastructure development, expand provision and quality of social services, build public institutional capacities and deepen good governance, and promote women ensure youth empowerment and broaden social inclusion (Revised and harmonized of BSC Curriculum for Civil and Water Resource Engineering, 2014).

Moreover, in the curriculum rationale of Mechanical Engineering, it was able to recognize that most of the graduates are employed by industries of small and medium sized across the country. As a result, it has rationalized and convinced on the necessity of making the education more practice oriented and focused to the different areas of industrial applications (medium and small) in order to make the engineers more productive. Further, the curriculum continued to show the inevitability of increasing the number of graduates in mechanical engineering that shall be self –

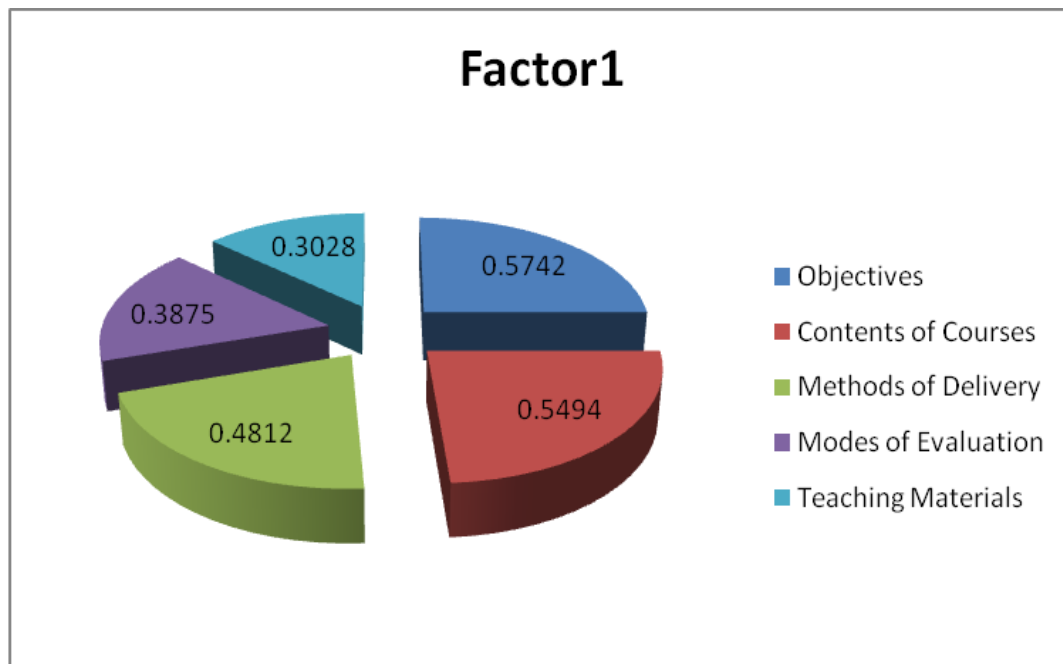
employed and it has introduced a course on entrepreneurship so that to prepare graduates for job creation other than job-search. Above all, the major changes of the curriculum appeared to be in line with: a) modularization was the approach to the engineering courses so that a Professor can be made responsible for the management of a module and decide on the matters pertaining to it; b) electives and more practiced oriented courses are added; c) The practical education aspect of each course was enhanced mainly through laboratory or workshop exercises, project work and industrial visits; d) a six-month industrial internship was introduced; and e) some new courses like Mechatronics, Total Quality Management, and Entrepreneurship with the objective of training engineers for self-employment were included. In addition, courses that deal with appropriate technology for rural development were added in the relevant focus areas in order to promote agricultural led industrial development policy of the country (Revised and harmonized BSC Curriculum of Mechanical Engineering, 2013).

Therefore, the rationales of the engineering curriculum across the programs are found to be treating issues of employability, employment, and labor market as well. This implies the Objectives of Courses/Learning outcomes are designed based on the national goals and socio-economic realities of the nation, contents of the courses of the study (are consisting and entertaining *multi-disciplinarity* to equip graduates with soft-skills and hard-skills from *diverse areas*; methods of delivery are characterized by modern, practice-oriented, and active learning methods supported by appropriate Instructional aides besides to long-range internships. It was from the objectives, contents and methods that the Modes of Evaluation/Assessment Techniques used varieties of evaluation methods and grading was based on the European Credit Transfer System (ECTS).

Other than the aforementioned descriptive findings, the extent of which the higher education curriculum is relevant to the graduates' job search was computed based on the quantitative data by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted first and results are reported in Figure 6.21 below.

Figure 6.21

Rotated factor loadings (pattern matrix) of higher education curriculum relevance



The above pie chart (Figure 6.21) displays that while objectives (0.5742) influence factor1 the most, course contents (0.5494); methods of delivery (0.4812); modes of evaluation (0.3875); and teaching materials (0.3028) had lowest influence on factor1 respectively. According to Yorke (n.d) the curricular process may facilitate the development of prerequisites appropriate to employment, but does not guarantee it. Hence, it is inappropriate to assume that students are highly employable on the basis of curricular provision alone: it may be a good harbinger but it is not an assurance of employability. Employability derives from the ways in which the student learns from his or her experiences. It is also a mistake to assume that provision of experience, whether within higher education or without, is a sufficient condition for enhanced employability. To have work experience, say, does not, of itself, ensure that the student develops (further) the various prerequisites (cognitive, social, practical, etc.) for success in employment. The same argument applies to whole curricula. Thus, the lowest contribution of factors related to the curriculum for finding employment may be attached to such explanations.

From the factor analysis conducted, factor 1 was found to be the strongest factor, and it was used to generate the multinomial logistic regression analysis and results were displayed by Table 6.22 below.

Table 6.22

Factor Analysis on the Influence of Higher Education Curriculum on Graduates' Length of Job Search

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Before _six _months						
Higher Education Curriculum _factor	-.3236339	.3002681	-1.08	0.281	-.9121486	.2648807
_cons	-.8848289	.2053738	-4.31	0.000	-1.287354	-.4823036
Within_a_year	(base outcome)					
After_ a_Year						
Higher Education Curriculum _factor	-.2200472	.2846291	-0.77	0.439	-.77791	.3378157
_cons	-.6668722	.1902131	-3.51	0.000	-1.039683	-.2940613

$$Odds_{\text{Being employed before six months_Being employed with in a Year}} = e(-0.88 + -0.32) = 0.30$$

The odds of being employed before six months are 54% lower than those for employed within a year for each 1-Unit increase in higher education curriculum _factor.

$$Odds_{\text{Being employed with in a Year_Being employed after a Year}} = e(-0.67 + -0.22) = 0.41$$

The odds of being employed within a year are 53% lower than those for employed after a year for each 1-Unit increase in higher education curriculum _factor.

$$Odds_{\text{Being employed before six months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.30}{0.41} = 0.73$$

The odds of being employed before six months versus employed after a year are 27% lower for each unit increase in higher education curriculum _factor.

Above all, the multiple logistic regression analysis evidently predicts the small effect of the HE curriculum in order to enhance the odd ratio of graduates for immediate employment. Principally, understanding the professional success of graduates is important for curricula formation to make them suitable for current challenges and smoothing the transition of graduates in to the labour market (Melink & Pavlin, 2009). Moreover, the effect of Higher Education Curriculum to the predicted probability of employment can be observed in Figure 6.22, Figure 6.23 and Figure 6.24 respectively.

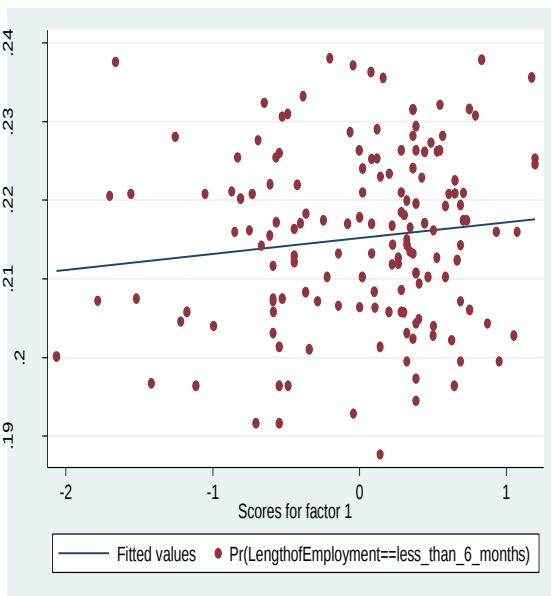


Fig. 6.22. Before Six Months Vs Higher Education Curriculum _factor

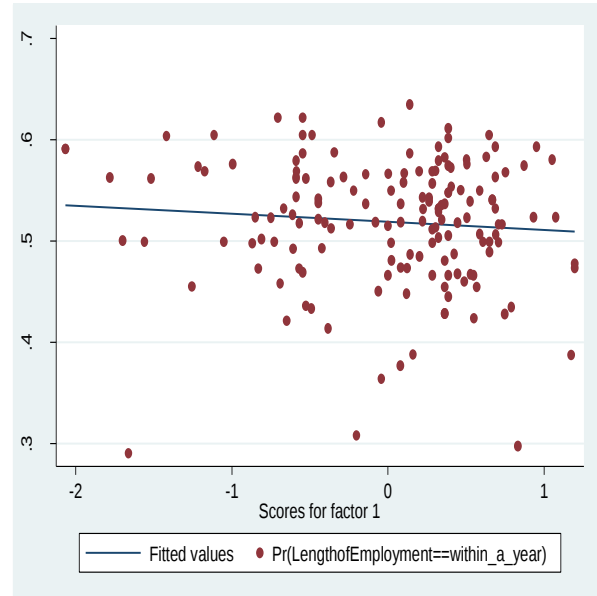


Fig. 6.23 Within a Year Vs Higher Education Curriculum _factor

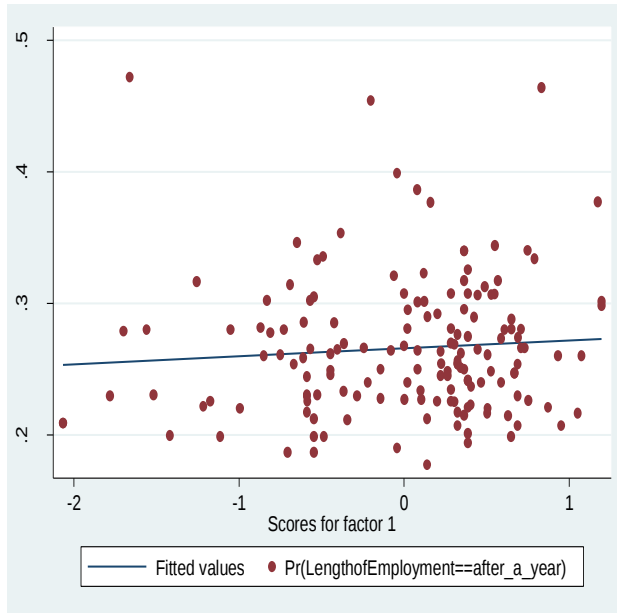


Fig. 6.24 After a Year Vs Higher Education Curriculum _factor

However, in the descriptive analysis, the relevance of Higher Education curriculum factors were rated above the mid-point ($M=3.0$) in both AAU-AAiT and BDU-BiT, Figure 6.22, Figure 6.23 and Figure 6.24 depicted that there is weak relationships between HE curriculum and length of job search. This implies that the factors considered under the Higher Education curriculum have little effect on the graduates' labor market success.

Table 6.23**T-Test on the Contribution of Study Behaviour to Graduates' Employment**

Group Statistics						
Items	University	Mean	Std.	t	df	Sig. (2-tailed)
Continuous readings to update knowledge and capabilities (i.e., learning about oneself – one's capabilities, confidence, life interests and career orientations (Development of Self-Efficacy and Meta-cognition)	AAU-AAiT (n=70)	4.17	.884	1.184	156	.238
	BDU-BiT (n=88)	4.02	.694			
Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge)	AAU-AAiT (n=70)	3.97	.884	2.539	156	.012
	BDU-BiT (n=88)	3.61	.877			
Studying in a range of situations (time, place)	AAU-AAiT (n=70)	3.76	.806	.142	156	.888
	BDU-BiT (n=88)	3.74	.823			
Studying in an interactive environment with peers and teachers	AAU-AAiT (n=70)	3.59	1.110	.036	156	.972
	BDU-BiT (n=88)	3.58	1.058			
Use of new technologies and communication media for active and interactive learning	AAU-AAiT (n=70)	3.51	1.032	2.281	156	.024
	BDU-BiT (n=88)	3.13	1.091			
Grand Mean of Higher Education Study Behaviour	AAU-AAiT (Mid-Point=15)	19.0000	3.19420	1.765	156	.080
	BDU-BiT (Mid-Point=15)	18.0795	3.30524			

The results of the descriptive analysis for items related to the role of individuals' study behaviour on the graduate employment are shown in Table 6.23 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from '1' (Very low) to '5' (Very high).

From the mean scores, it seems, graduates in AAU-AAiT and BDU-BiT rated all the 5 items above the mid-point (M=3.0). The grand rated mean scores for the individual Study Behaviour from both Institutes (AAU-AAiT= 19.0000; BDU-BiT =18.0795) also found above the mid-point (M=15.0). This reflects that the individual Study Behaviour of AAU-AAiT and BDU-BiT

contributed a lot for the graduate employment since graduates themselves rated all the items above the moderate level.

For instance, Continuous readings to update knowledge and capabilities (i.e., learning about oneself – one's capabilities, confidence, life interests and career orientations (Development of Self-Efficacy and Meta-cognition) appears to be high (AAU-AAiT, $M = 4.17$; and BDU-BiT, $M = 4.02$). In addition, Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge) tends to be important (AAU-AAiT, $M = 3.97$; and BDU-BiT, $M = 3.61$). Besides, Studying in a range of situations (time, place) tends to be (AAU-AAiT, $M = 3.59$; and BDU-BiT, $M = 3.58$). Besides, use of new technologies and communication media for active and interactive learning tends to be (AAU-AAiT, $M = 3.51$; and BDU-BiT, $M = 3.13$)

In this regard, an open ended question was also stated towards the relationships between the graduates' study behaviour and employment. One of the AAU-AAiT graduates replayed “sadly I see little connection. This is because when we study in campus we study for the sole purpose of passing an exam rather than widening our knowledge in different perspectives and this leads most of us joblessness after graduation”.

The conducted comparisons and test- of significance on the Job searching methods practiced by graduates to look for employment displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar in all mechanisms except the Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge) [$(t_{(156)} = 2.539, p < .05)$] and Use of new technologies and communication media for active and interactive learning [$(t_{(156)} = 2.281, p < .05)$] which demonstrate the availability of statistically significant difference between both Institutes. This implies that graduates of AAU-AAiT have Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge) besides their access to use of new technologies and communication media for active and interactive learning.

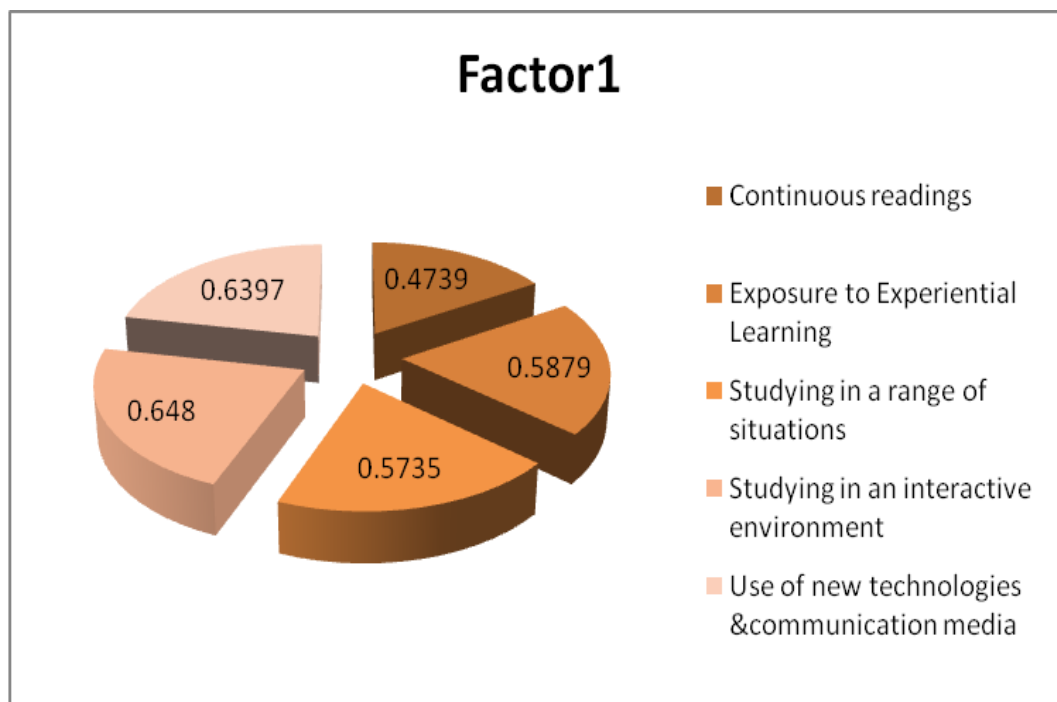
Therefore, the absence of differences on the responses of graduates of both universities on the relevance of the higher education curriculum to their employment is resulted from the major

activities taken by the collective effort of universities to synchronize and harmonize the engineering curriculum.

Moreover, the extent of which the extent does individual study behaviour affects the graduates' job search was also measured by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted and results are reported in Table 6.25 below.

Figure 6.25

Rotated Factor Loadings (Pattern Matrix) of Individual Study Behaviour



This pie chart, Figure 6.25, clearly shows that while studying in an interactive environment (0.648) influences factor1 the most, use of new technologies and communication media (0.6397); exposure to experiential learning (0.5879); studying in a range of situations (0.5735); continuous reading (0.4739) has lowest influence on factor1 respectively. From the factor analysis results, the strongest factor (Factor1) was taken to generate the multinomial logistic regression analysis and results were reported in Table 6.24 below.

Table 6.24

The Influence of Individual Study Behavior on Length of Searching Employment

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Before _six _months						
study behaviour _factor	.3374132	.2534807	1.33	0.183	-.1593999	.8342263
_cons	-.896105	.2069893	-4.33	0.000	-1.301797	-.4904134
Within_a_year	(base outcome)					
After_a_Year						
study behaviour _factor	.1095379	.2275547	0.48	0.630	-.3364611	.5555368
_cons	-.6656521	.1899722	-3.50	0.000	-1.037991	-.2933134

$$Odds_{\text{Being employed before six months_Being employed with in a Year}} = e(-0.88 + -0.32) = 0.30$$

The odds of being employed before six months are 70% lower than those for employed within a year for each 1-Unit increase in individual study behaviour _factor.

$$Odds_{\text{Being employed with in a Year_Being employed after a Year}} = e(-0.67 + -0.22) = 0.41$$

The odds of being employed within a year are 59% lower than those for employed after a year for each 1-Unit increase in individual study behaviour _factor.

$$Odds_{\text{Being employed before six months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.30}{0.41} = 0.73$$

The odds of being employed before six months versus employed after a year are 27% lower for each unit increase in individual study behaviour _factor.

In the meantime, the exponential equation clearly confirmed that the probability of being secured for graduate jobs is minimal and the scatter plots also demonstrated the same truth. Following are the scatter plots which clearly showed the relationships between individual study behaviour and length of job search in the graduate labor market.

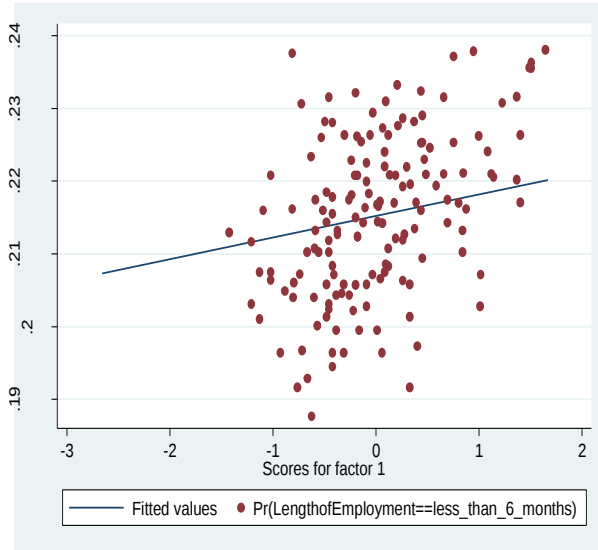


Fig.6.26 Before Six Months Vs study behaviour _factor

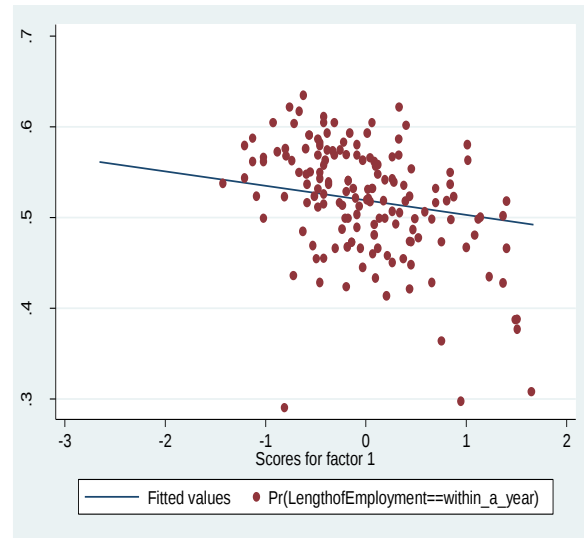


Fig.6.27 Within a Year Vs study behaviour _factor

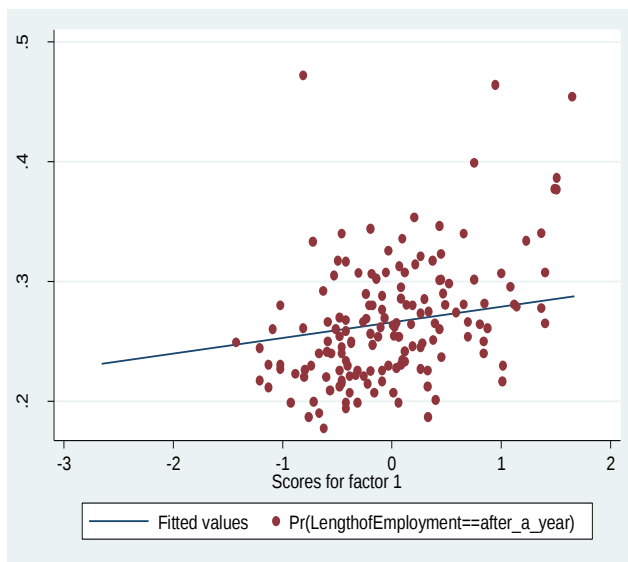


Fig.6.28 After a Year Vs Study Behaviour _factor

Even though, from the mean scores, graduates in AAU-AAiT and BDU-BiT rated all the five variables (continuous readings to update knowledge and capabilities, exposure for experiential learning, studying in a range of situations, studying in an interactive environment with peers and teachers, and use of new technologies and communication media for active and interactive learning) above the mid-point ($M=3.0$), the probability of being employed before six months is still lower than within and after a year as it can be seen from Figure 6.26, Figure 6.27 and Figure

6.28 respectively. This implies that the supportiveness of the individual study behaviour to the graduates' employability is still limited.

6.7 Competencies (Employability Skills)

Table 6.25

T-Test on Extent of Match between Competences required by the Current Labor Market and with what was acquired by Graduates

Group Statistics						
Items	University	Mean	Std.	t	df	Sig. (2 tailed)
Mastery of your own field of study or discipline	AAU-AAiT (n=70)	4.10	.640	1.467	156	.144
	BDU-BiT (n=88)	3.93	.770			
Compitencies on Multidisiplinary knowledge	AAU-AAiT (n=70)	3.83	.868	-.083	156	.934
	BDU-BiT (n=88)	3.84	.969			
Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)	AAU-AAiT (n=70)	3.89	.808	.326	156	.745
	BDU-BiT (n=88)	3.84	.896			
Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills)	AAU-AAiT (n=70)	4.03	.947	2.035	156	.044
	BDU-BiT (n=88)	3.70	1.030			
IT skills (Computer skills)	AAU-AAiT (n=70)	3.70	.787	1.027	156	.306
	BDU-BiT (n=88)	3.57	.814			
Research Skills	AAU-AAiT (n=70)	2.76	1.096	2.807	156	.006
	BDU-BiT (n=88)	2.28	1.017			
Time management skills	AAU-AAiT (n=70)	3.17	1.103	.848	156	.398
	BDU-BiT (n=88)	3.01	1.236			
Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness)	AAU-AAiT (n=70)	3.79	.849	.012	156	.990
	BDU-BiT (n=88)	3.78	.850			
Critical Thinking Skills	AAU-AAiT (n=70)	3.90	.801	1.490	156	.138
	BDU-BiT (n=88)	3.70	.833			
Creative Thinking and Visioning Skills	AAU-AAiT (n=70)	3.73	.833	.412	156	.681
	BDU-BiT (n=88)	3.67	.919			
Grand Mean of Individual Competencies	AAU-AAiT (Mid-Point=30)	36.8857	4.98561	1.807	156	.073
	BDU-BiT (Mid-Point=30)	35.3409	5.60149			

The results of the descriptive analysis for items related to the role of study behaviour on the graduate employment are shown in Table 6.25 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from '1' (Very low) to '5' (Very high). From the mean scores, it seems that graduates in AAU-AAiT and BDU-BiT rated all the 9 items above the mid-point ($M=3.0$) except for the item 'research skills' (AAU-AAiT, $M=2.76$ and BDU, BiT, $M=2.28$). The grand mean scores for the competences also show that graduates from both Institutes have reported above the Mid Point (Mean Value=30), i.e., (AAU-AAiT= 36.8857; BDU-BiT =35.3409) which implies that competencies are well acquired by the graduates. This reflects that the required competences were well acquired by the graduates of AAU-AAiT and BDU-BiT because graduates themselves rated all the items above the moderate level. This finding is different from the REFLEX study of European graduates where many graduates reported to acquire relevant skills during work experiences other than before or during their HE courses, though the proportions that do so are rather lower in the UK than elsewhere in Europe (Little et al., 2008).

The detailed examination of the ratings for each item reveal that among the Competences Required by the Current Labor Market, the most 3 items highly rated by graduates of AAU-AAiT include: 'Mastery of own field of study or discipline ($M=4.10$)'; 'Teamwork skills (i.e., Coordinating activities and Managing tasks/ Negotiating skills), ($M=4.03$)'; 'Critical Thinking Skills, ($M=3.90$)'; While to graduates of BDU-BiT, 'Mastery of own field of study or discipline, ($M=3.93$)'; 'Competencies on Multidisciplinary knowledge, ($M=3.84$)'; 'Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions), ($M=3.84$). Therefore, it can be understood from the data that graduates from both case universities tend to share the 'Mastery of own field of study or discipline' as the major requirement by employers.

All the remaining items rated above the mid-point ($M=3.0$) also indicates the importance of competency skills related to 'Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions), IT skills (Computer skills), Research Skills, Time management skills; Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation,

Leadership & Assertiveness); Creative Thinking and Visioning Skills are among the required skills by the employer institutions.

The conducted comparisons and test- of significance on the extent of which competencies are well acquired by the graduates displays that responses of the graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar in all competences except the Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills) [$(t_{(156)} = 2.035, p < .05)$] and the Research Skills [$(t_{(156)} = 2.807, p < .05)$] which demonstrate the availability of statistically significant difference between both Institutes. This implies that graduates of AAU-AAiT have better access to acquire Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills) besides to Research Skills.

As it was argued by Melink & Pavlin (2009), much of the attention in higher education developments strongly relates to the issues of graduates' employability. The emerging position of this concept is widespread in national and international science, media and political arenas, particularly in organizations such as the International Labour Organization, the European Commission, or the Organization for Economic Cooperation and Development. Similarly, even though in this study, the concept of employability might appear as too narrow and limited to graduates success in job search, it can hardly be avoided in discussions of competence development.

Further, graduates were asked to indicate the top five competencies that they feel are highly required by the current labor market. They have put five main competencies required by the employers of Engineers in the following order of priority: 'Mastery of own field of study/discipline ranked first with (48% of respondents)', 'IT skills ranked second with (Computer skills) (29%)', 'interpersonal and communication skills and emotional intelligence (including self-awareness, strength of character, confidence, motivation, leadership and assertiveness) ranked third with (26%)', 'IT skills (Computer skills) ranked fourth (24%)', and 'ability to rapidly acquire new knowledge (i.e., alertness to new opportunities and know how to come up with new ideas and solutions) ranked fifth with (21%)'.

From the above perspective, officers from potential employer companies such as MOHA Soft Drinks Industry, East Africa Coca Cola Bottling Company, VimoVenco Engineering PLC, Ethiopian

Shipping and Logistic Service, Sunshine Construction, MOENCo-Ethiopia, and Bahir Dar Textile Share Company were asked to prioritize the competencies which are mostly required by the current labor market. However, most of them were reserved to list rather they agreed as competency requirements are dependent up on the context of the respective companies. In relation to this, Melink & Pavlin (2009:35) argued that “...we can expect that the required competencies will be an important basis for the elaboration and adaptation of teaching programmes/courses which aim at matching the competencies students acquire with those required by organizations”. This implies that HE institutions need to respond according to the demands of the employers’ organization so that to correspond to job requirements.

Table 6.26

Factor Loadings (pattern matrix) and Unique Variances of Competencies

Once more, the extent of which individual competencies related to the job search of graduates were also calculated by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted and results are reported in Table 6.26 below.

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Uniqueness
Mastery of your own field	0.1895	0.5286	0.0354	0.1121	-0.0349	0.6697
Multidisciplinary knowledge	0.3800	0.5213	0.1297	-0.0494	0.1332	0.5469
Ability to rapidly acquire new knowledge	0.5558	0.3326	0.1875	0.0298	-0.0691	0.5396
Teamwork skills	0.3344	0.4356	0.1167	0.1281	0.2913	0.5836
IT skills	0.3155	0.2936	0.1520	0.3222	0.0454	0.6853
Research Skills	0.0842	0.0198	0.4896	0.1511	0.0933	0.7213
Time management skills	0.0959	0.0888	0.4818	-0.0570	-0.0450	0.7455
Interpersonal and Communication Skills	0.6521	0.1544	0.1308	0.0748	0.0214	0.5278
Critical Thinking Skills	0.6193	0.3262	0.0926	0.0909	0.1555	0.4690
Creative Thinking and Visioning Skills	0.5675	0.3470	0.1351	0.2398	0.1435	0.4612

Table 6.26 above depicts that factor1, factor2, factor3 and factor4 increase as Mastery of ones own field increases only factor5 decreases as Mastery of ones own field increases. Factor1, factor2, Factor3 and Factor5 increase as multidisplinary knowledge increases only factor4 decreases as Multidisplinary knowledge increases. Factor1, factor2, factor3and factor4 increase as the rapidly acquire new knowledge ability increases but factor5 decreases as rapidly acquire new knowledge abilty increases. Factor2, factor3, factor4 and factor5 increase as IT skills and Research Skills, Interpersonal and Communication Skills, Critical Thinking Skills and Creative Thinking and Visioning Skills increase. Factor1, factor2 and factor3 increase as Time management skills increase but factor 4 and factor 5 decreases as Time management skill increases.

Generally, Interpersonal and Communication Skills (0.6521) influence factor 1 the most and Research Skills (0.0842) has lowest influence on factor1. Mastery of your own field (0.5286) influences factor2 the most and Research Skills (0.0198) has the lowest influence on factor2. Research Skills (0.4896) influences factor3 the most and Mastery of ones own field (0.0354) has lowest influence on factor3. IT skills (0.3222) influence factor4 the most and Time management skill (-0.0570) has lowest influence on factor4. Critical Thinking Skills (0.1555) influence factor5 the most and Ability to rapidly acquire new knowledge (-0.0691) has lowest influence on factor5. Thus, factor1 is the strongest among five factors and it was chosen to run the Multinomial logistic regression analysis and the result reported on Table6.26.

Table 6.27**Factor Analysis on the Individual Competencies on Length of job search**

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Before _six _months						
Competencies _factor	-.2038405	.2630083	-0.78	0.438	-.7193273	.3116463
_cons	-.8838189	.2047904	-4.32	0.000	-1.285201	-.482437
Within_a_year	(base outcome)					
After_ a_Year						
Competencies _factor	-.1082591	.2474859	-0.44	0.662	-.5933227	.3768044
_cons	-.6677985	.1898962	-3.52	0.000	-1.039988	-.2956089

$$Odds_{\text{Being employed before six months_Being employed within a Year}} = e(-0.88 + 0.20) = 0.51$$

The odds of being employed before six months are 49% lower than those for employed within a year for each 1-Unit increase in Competencies _factor.

$$Odds_{\text{Being employed within a Year_Being employed after a Year}} = e(-0.67 + 0.11) = 0.57$$

The odds of being employed within a year are 43% lower than those for employed after a year for each 1-Unit increase in Competencies _factor.

$$Odds_{\text{Being employed before 6 months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.51}{0.57} = 0.89$$

The odds of being employed before six months versus employed after a year are 11% lower for each unit increase in Competencies _factor.

As can be seen from the multinomial regression analysis, the probability of finding employment is very low. From this it is possible to say that the individual competencies acquired from the HEIs are less likely helpful to graduates in for quickly find employment. The following scatter plots also supported this finding:

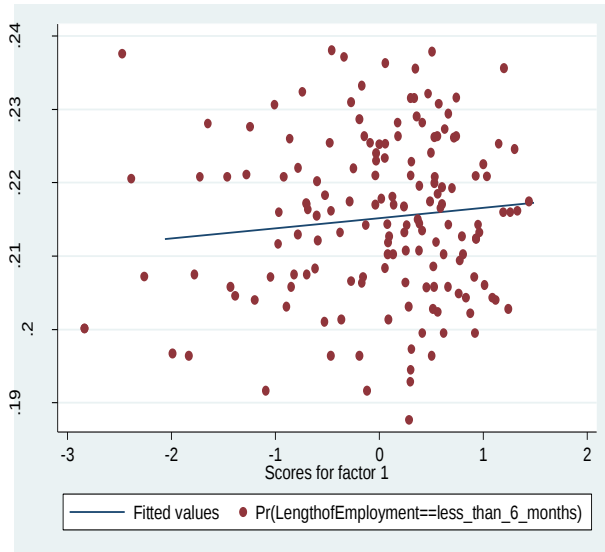


Fig.6.29.Before six months Vs Individual Competency_factor

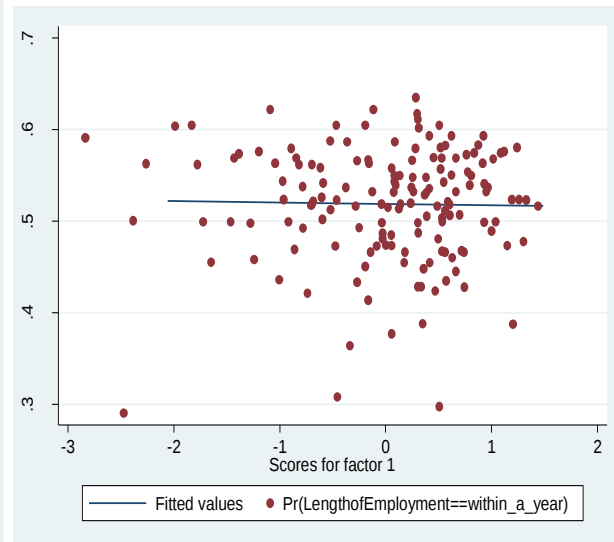


Fig.6.30.Within a year Vs Individual Competency_factor

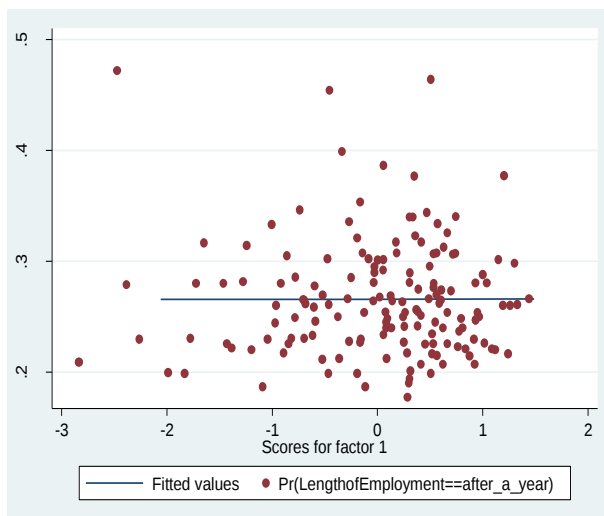


Fig.6.31 After a Year Vs Individual Competency_factor

However, the grand mean scores for the competences acquired by the graduates from both Institutes found above the mid-point; Figure 6.29, Figure 6.30, Figure 6.31 displayed that the probability of being employed less than six months is still lower than within and after a year. Moreover, the little effects of individual competencies to the job market can be observed from the low relationships between competencies and length of job search.

6.8 Labor Market Conditions

Table 6.28

T-Test on the Supportiveness of the Labor Market Condition to Employment Opportunity between Universities

Group Statistics						
Items	University	Mean	Std.	t	df	Sig. (2-tailed)
The macroeconomic condition (i.e., The number of new jobs created by economic expansion/large quantity of jobs in the labor market)	AAU-AAiT (n=70)	3.33	1.139	-.136	156	.892
	BDU-BiT(n=80)	3.35	1.051			
Civil-service employment requirement policies and labor market regulations (e.g., affirmative action)	AAU-AAiT (n=70)	3.30	1.040	-.779	156	.437
	BDU-BiT(n=80)	3.43	1.070			
Education-Job matches (i.e., The complementarity between labour market and educational policies)	AAU-AAiT (n=70)	3.37	1.395	-.825	156	.410
	BDU-BiT(n=80)	3.53	1.082			
Grand mean of the labor market conditions	AAU-AAiT (n=70)	10.0000	2.37743	-.814	156	.417
	BDU-BiT(n=80)	10.3182	2.48927			

The results of the descriptive analysis for items related to the supportiveness of the labor market conditions to employment opportunity are shown in Table 6.28 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from ‘1’ (Very low) to ‘5’ (Very high).

From the mean scores, it seems, graduates in AAU-AAiT and BDU-BiT rated all the 3 items above the mid-point (M=3.0). The grand rated mean scores for the individual Study Behaviour from both Institutes (AAU-AAiT= 19.0000; BDU-BiT =18.0795) also found above the mid-point (M=15.0). This reflects that the Labor Market Condition was supportive to get employment opportunities for AAU-AAiT and BDU-BiT graduates.

For instance, the macroeconomic condition (i.e., The number of new jobs created by economic expansion/large quantity of jobs in the labor market) appears to be high (AAU-AAiT, M = 3.30; and BDU-BiT, M =3.43). In addition, Civil-service employment requirement policies and labor market regulations (e.g., affirmative action) tends be important (AAU-AAiT, M = 3.44; and BDU-BiT, M =3.82). Besides, Education-Job matches (i.e., The complementarity between labour

market and educational policies) tends to be important (AAU-AAiT, M = 3.37; and BDU-BiT, M = 3.53).

In this regard, one of the BDU-BiT graduates goes on to argue:

...recently there is a big demand for engineers in the graduate labor market, however, most of them require experience which hardly matches fresh graduates. For this reason many fresh graduates spend lots of time till they secure their first employment. My suggestion towards this is that the Higher Education system should focus on creating entrepreneurs rather than employees. Courses such as Financial Management, Business Administration etc. should be very well embedded in course curricula. Teachers should be helping students “when you start your company....” and not “when you go out and start working for EEPCo...”

Likewise, one of the AAU-AAiT graduates suggested that the higher education program should integrate the theoretical, practical and technological part of the course and also the sectoral requirements for employment and, employers should abide by the code of conduct up on recruitment and they should support continued growth of their staffs by educating them and providing the necessary rewards in terms of pays, benefits or work environment and having that system in place consistently monitor their progress.

In this regard, employers were asked to reflect their own ideas on the support of labor market conditions to employers so as to absorb a number of graduates per each year. Most of the employers replied that the labor market conditions specifically labor market laws and policies are not encouraging employers so as to increase our capacities in order to absorb more graduates. There are a number of issues and the government policies didn't encourage us just to expand our business and to absorb more graduates. Government policies are paper tigers when it comes to the implementation it is not encouraging the private companies to be competitive in the world market and it doesn't give equal attention just like the government sectors.

Moreover, an open ended question was left to the respondents and some engineering graduates strongly react on the way how government officials are insisting engineering graduates to be involved in jobs like ‘cobble stone’ preparations which undermines scientific knowledge and

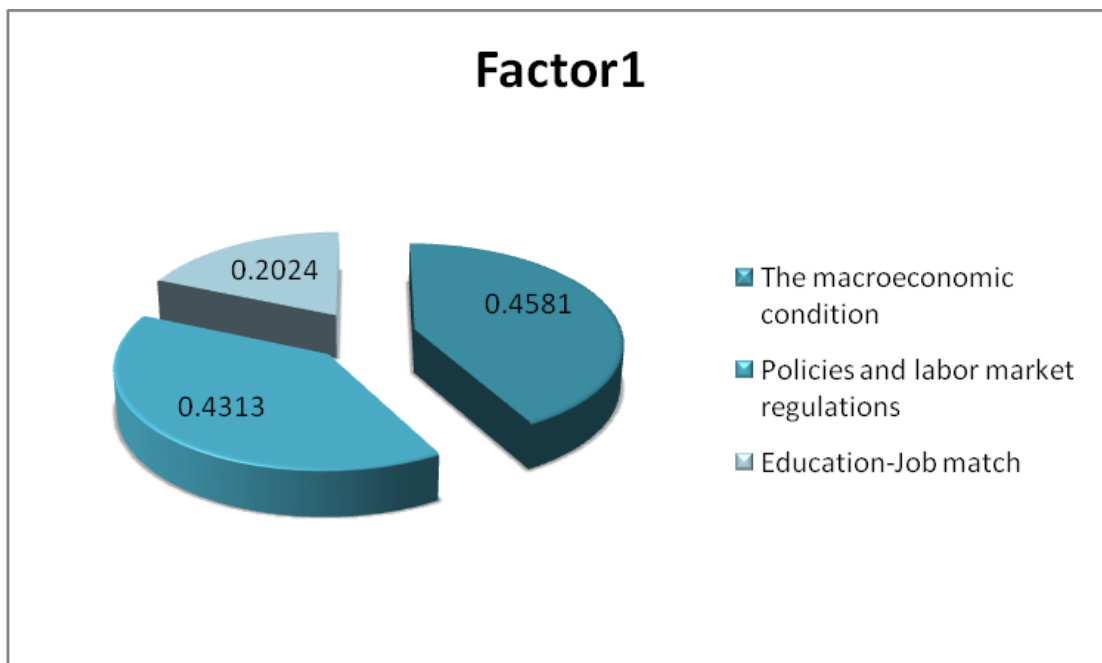
skills obtained from their HEIs to that of a daily-laborer type of manual work which can be performed without any formal trainings, principles, theories and hard sciences.

Furthermore, the conducted comparisons and test- of significance on the Supportiveness of the Labor Market Conditions category displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar so there is no statistically significant difference between both Institutes [$(t_{(156)} = -.814, p > .05)$]. Therefore, the absence of differences on the responses of graduates of both universities on the supportiveness of the labor market conditions to employment opportunity.

What is more, the extent of which the labor market conditions influence graduates' job search was also measured by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted and results are reported in Figure 6.32 below.

Figure 6.32

Factor loadings (pattern matrix) and unique variances



The above pie chart (Figure 6.32) displays that while the Macroeconomic condition (0.4581) influences factor1 the most, policies and labor market conditions (0.4313); and Education-Job

match (0.2024) have lowest influence on factor1 respectively. From the factor analysis results, factor 1 was found to be the strongest factor in order to generate the Multinomial logistic regression analysis and results were reported on Table 6.29 below.

Table 6.29

Factor Analysis on the Influence of Labor Market Conditions to Graduates' Length of Searching Employment

Length of Employment	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Before _six _months						
Labor Market Conditions _factors	-.6261045	.3765385	-1.66	0.096	-1.364106	.1118974
_cons	-.8913338	.2072474	-4.30	0.000	-1.297531	-.4851363
Within_a_year	(base outcome)					
After_a_Year						
Labor Market Conditions _factors	-.4036497	.3614829	-1.12	0.264	-1.112143	.3048438
_cons	-.6629746	.1907207	-3.48	0.001	-1.03678	-.2891689

$$Odds_{\text{Being employed before six months_Being employed with in a Year}} = e(-0.89 + -0.63) = 0.22$$

The odds of being employed before six months are 78% lower than those for employed within a year for each 1-Unit increase in Labor Market Conditions _factor.

$$Odds_{\text{Being employed with in a Year_Being employed after a Year}} = e(-0.40 + 0.66) = 0.34$$

The odds of being employed within a year are 66% lower than those for employed after a year for each 1-Unit increase in Labor Market Conditions _factor.

$$Odds_{\text{Being employed before 6 months_Being employed after a Year}} = \frac{\text{Probability (Being employed before six months)}}{\text{Probability (Being employed after a Year)}} = \frac{0.22}{0.34} =$$

0.65

The odds of being employed before six months versus employed after a year are 35% lower for each unit increase in Labor Market Conditions _factor.

This implies that labor market conditions are less likely helpful to graduates to get employment within six months period of time after their immediate graduation. In order to triangulate the fact, the following scatter plots were employed.

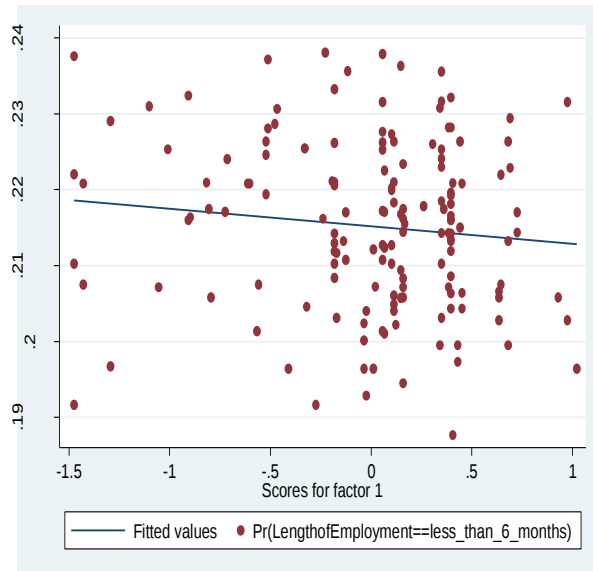


Fig.6.33 Before Six Months Vs Labor Market Conditions _factor

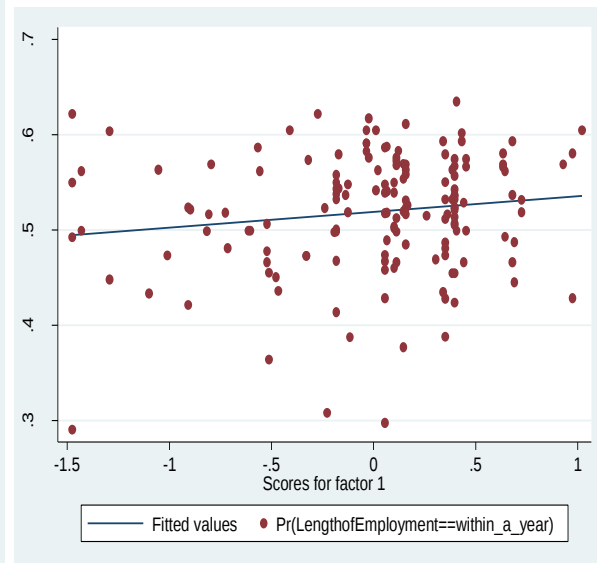


Fig.6.34 Within a Year Vs Labor Market Conditions _factor

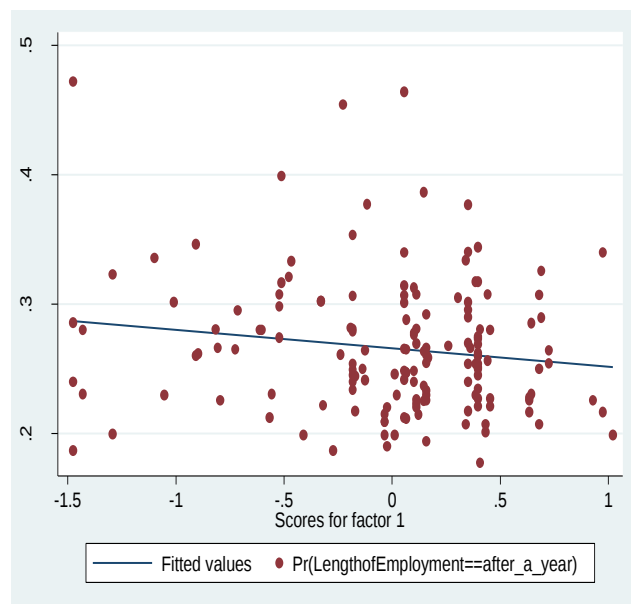


Fig.6.35 After a Year Vs Labor Market Conditions _factor

However, from the mean scores graduates in AAU-AAiT and BDU-BiT rated all the 3 items (the macroeconomic condition; civil-service employment requirement policies and labor market regulations and education-job matches) above the mid-point ($M=3.0$), Figure 6.33, Figure 6.34

and Figure 6.35 showed the small effect of labor market conditions to the graduate job search in the labor market. This implies that the probability of being employed before six months time is still lower than within and after a year in the supportiveness of labor market conditions.

6.9 Job Searching Methods

Table 6.30

Job Searching Methods Practiced by Graduates to Look For Employment

Group Statistics						
Items	University	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Advertisements in News paper & Notice Boards	AAU-AAiT (n=70)	3.54	1.270	-1.819	156	.071
	BDU-BiT(n=80)	3.91	1.247			
Internet	AAU-AAiT (n=70)	2.91	1.511	-3.350	156	.001
	BDU-BiT(n=80)	3.65	1.241			
Approached by employer	AAU-AAiT (n=70)	3.03	1.340	.239	156	.811
	BDU-BiT(n=80)	2.98	1.339			
Family relationships	AAU-AAiT (n=70)	1.66	1.062	1.553	156	.122
	BDU-BiT(n=80)	1.42	.854			
Friends or acquaintances	AAU-AAiT (n=70)	2.36	1.130	2.087	156	.038
	BDU-BiT(n=80)	2.00	1.017			
Help of higher education institution	AAU-AAiT (n=70)	1.97	1.021	.630	156	.530
	BDU-BiT(n=80)	1.86	1.106			

The results of the descriptive analysis for items related to the Job searching methods practiced by graduates to look for employment are shown in Table 6.30 above. Informants were asked to rate for each item, measured by a five-point Likert scale ranging from '1' (Very low) to '5' (Very high).

From the mean scores, it seems that graduates in AAU-AAiT and BDU-BiT effectively used mechanisms like Advertisement in news paper AAU-AAiT M=3.54; BDU-BiT M=3.91 followed

by the Internet AAU-AAiT M=2.91; BDU-BiT M=3.65. Somehow, graduates also tend to be approached by employers AAU-AAiT M=3.03; BDU-BiT M=2.98 at moderate level. However, the remaining job search techniques related to items 'Family relationships', 'Friends or acquaintances', 'Help of higher education institution' are traced below the midpoint M=3.0.

The conducted comparisons and test- of significance on the Job searching methods practiced by graduates to look for employment displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar in all mechanisms except use of Internet [$(t_{(156)} = -3.350, p < .05)$] and Friends or acquaintances [$(t_{(156)} = 2.087, p < .05)$] which demonstrate the availability of statistically significant difference between both Institutes. This implies that graduates of AAU have got better possibilities to use friends or other acquaintances besides their access to internet.

6.10 The Engineering Graduates Employability and Employment as Seen from the Perspective of Employers

Interview schedules with employers revealed the existence of a wide gap between employer expectations and performance of graduates - especially in quality of work, productivity, specific job related knowledge and skills. Especially the respondent from Sugar Corporation and Maritime Engineering expressed that the newly recruited engineering graduates were not found to be competent to resume their occupation without job-related specific trainings. Therefore, the respective corporations organized a training ranging from a month up to six months time respectively. This implies that trainings in higher education institutions did not respond appropriately to the employers' needs, especially as seen in terms of the competencies of new graduates. Of course, of the benefits employer companies enjoyed in relation to the graduates is mainly related to the possibilities to have cheap labor.

Again the interview data collected from different employers indicated that some graduates are observed to lack practical skills, attitude for their jobs and relevant knowledge to the job market. It was also commented by some employers that the newly recruited graduates from the 2012 cohort tend to lack professionalism, office discipline, integrity, the readiness to learn new things and taking responsibility for a certain task. Therefore, this finding is related to Misganaw (2013)

who found out that graduates' communication and language skills are very poor; they cannot sell themselves; most applicants fail to express themselves and cannot communicate their ideas; and lack of confidence in one's potential is observed in many job applicants. Accordingly, such reflections demonstrate the existence of unmet needs to be fulfilled for enhancing the employability of graduates.

Moreover, some officials employer companies such as, East Africa Coca Cola Bottling Company, VimoVenco Engineering PLC, Ethiopian Shipping and Logistic Service, and Sunshine Construction added that they have played an important role in the university-work transition by helping students make more informed choices about their learning and career pathways, by speaking in the university about career opportunities, by communicating to regional labour market boards and/or directly with universities and colleges about what employers expect their skill needs and by offering co-op or "work-study" placements that give young people the opportunity for hands-on experience with an occupation while completing a high school, college, university or apprenticeship program.

Many of the key informants in different employer companies like Ethiopian Telecommunication Corporation and Bahir Dar Textile Share Company, who were interviewed in this study, reported that they have been engaged in various forms of outreach activities in various universities. This included general discussions with students to make them aware of a particular company or industry in general and taking part in career fairs and talks on campuses which in turn used to look for graduates to hire them for specific positions (mostly via on-campus recruitment).

CHAPTER VII

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter deals on the major findings of the study including conclusions and recommendations. Particularly, the pattern goes through the restatement of the problem and research objectives, rephrasing of the methodological procedures, and activities related to analysis.

7.2 Procedures of the Research

In developing countries like Ethiopia, the labour market plays a central role in determining economic and social progress since employment status is one of the key determinants of existing poverty (ILO, 2013). In consequence, the issue of graduate employability, employment, and unemployment is a phenomenal topic of discourse, nowadays across professional gatherings in media and commentary reviews, employer surveys, national economic debates, social networks and employee forums. However, the reality in the formal economy of most developing countries is that the labour market fails to create jobs for graduates and the graduates continuously suffer from job searching and long term unemployment. Along with this, the growing number of higher education graduates and the growing employment problems in many developing countries are making the transition period of graduates a more visible phenomenon, which meets increased public attention (Teichler, 1998, 2000).

In this context, undertaking of a search process on the determinant factors of graduate employment seems essential for both theoretical and policy reasons. Thus, this study was designed to examine the linkages between higher education and labor market in Ethiopia with particular focus on the factors influencing employment opportunities of engineering graduates from Addis Ababa and Bahir Dar Universities. For the purpose, the following research questions were raised. (i) ‘How long it takes to search jobs/employment for the engineering graduates of AAU-AAiT and BDU-BiT?’, (ii), How long it takes to search jobs/employment in the Ethiopian labor market for the engineering graduates of AAU-AAiT and BDU-BiT? (iii) ‘How do variables like the socio-biographic background, prior education and interest of engineering graduates from

AAU-AAiT and BDU-BiT related to employment opportunities?’, (iv) ‘How supportive are HEIs’ structure, study condition/facilities, curriculum and individual study behaviour to the job search as well as subsequent employment of graduates from AAU-AAiT BDU-BiT?’, (v) ‘To what extent do employability skills acquired by the graduates of AAU-AAiT and BDU-BiT, as required by the graduate labor market?’ (vi) ‘To what extent the labour market conditions assist the graduates of AAU-AAiT and BDU-BiT to find jobs/employment?’, and (vii) ‘What are the most commonly used job searching methods by the graduates of AAU-AAiT and BDU-BiT?’

Consequently, the specific objectives of this study were happen to be: tracing the employment status of AAU-AAiT and BDU-BiT engineering graduates in the Ethiopian labor market; find out the time range that engineering graduates of AAU-AAiT and BDU-BiT demanded by the labor market to search jobs/ employment; investigating of the relationships between the socio-biographic background of AAU-AAiT and BDU-BiT graduates and their employment opportunities; scrutinizing of the degree of supportiveness of the structure, curriculum, study conditions of higher education and study behaviour of individuals to the subsequent employment of AAU-AAiT and BDU-BiT graduates; testing of the extent of acquired employability skills by the graduates of AAU-AAiT and BDU-BiT, as required by the graduate labor market; finding out of the most commonly used job searching methods by AAU-AAiT and BDU-BiT graduates; and examining of the status of 2012 engineering graduates of AAU-AAiT and BDU-BiT in finding employment after their immediate graduation.

For the success, the study was guided by the human capital, signaling and social capital theories which used to develop the Meta-conceptual framework that relates the entire process of the research. The philosophical point of view of the study was Pragmatism that emphasized both quantitative and qualitative knowledge. The research method employed was mixed methods research and the design was tracer study in a comparative perspective. Accordingly, Data was collected from 161 engineering graduates of the 2012 cohorts, 18 employers, 16 higher education teachers and relevant documents. Data collection tools were questionnaires, semi-structured interviews and document analysis.

In this study, engineering graduates of 2012 cohorts, from fields of Electrical, Mechanical, Civil and Mechanical were targets from Addis Ababa and BahirDar Universities which accounts 380

in number. From the total population, the number of sample size was determined using Taro (2010) formula with a 5% margin of error, a design effect of 2, and return rate of 80%, the sample size required was 195 graduates. This number of graduates was drawn through random sampling of a simple variety. In addition, six government employers; six private and six self employers (2 from AAU and 4 from BDU) was taken through purposive sampling. Purposive sampling was also used to take sixteen senior engineering teachers (2 from each corresponding fields and from each case universities). Further, relevant documents like the Education and Training Policy and Strategy (ETP) (1994); The Education Sector Development Program (1997-2017); The Industrial Development Strategy (2003); Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2006); Growth and Transformation Plan (GTP I); revised and harmonized Curriculum for B.Sc in Electrical engineering (2014); revised and harmonized Curriculum for B.Sc in Chemical engineering (2014); revised and harmonized Curriculum for B.Sc in Civil and Water Resource engineering (2014); and revised and harmonized Curriculum for B.Sc in Mechanical engineering (2013) were taken using purposive sampling.

The data collection tools used in this study were questionnaire, semi-structured interview, and document analysis. Each instrument was decided on following different bases.

Questionnaire: was designed to obtain data mainly to the quantitative aspect of the study. The nature of the questionnaire instrument consisted both closed-ended and open-ended items. Most of the closed-ended items were composed of five point Likert rating scale partially adapted from New Developments in graduate Tracer Studies an UNITRACE (2010) and from the reviewed literature. The distribution of items across variables was: Employment status (1), Biographic Data (9), Higher Education Structure (5), Higher Education Study Condition (5), Higher Education Curriculum (5), Individual study behavior (5), Competencies (10), Job Searching/Transition Period from Higher Education to Labor Market (1), Job Searching Methods (6), Labor market Conditions (3). Therefore, a total of 51 close-ended items were prepared, some of the items were followed by open-ended ones.

Interview: was prepared to the sampled employers and engineering teachers. The nature of the interview questions was semi-structured but different in content-wise to both groups of respondents. The sources of the items were from the reviewed literature.

Document Analysis: documents that are found in both engineering institutes of the case universities, which were believed to be indicators of the graduate labour market, were considered. In this regard, the rationales of the syllabuses to each fields of study were examined against the reflectivity for the national goals and missions emphasized under the GTP 2015, ESDPI-IV and EPRSDP. In addition, different policy documents from ILO, MOLISA, CSA and the MOE were examined to extract relevant data.

Tryout of Instruments: to test the reliability and validity of the questionnaire and interview items, a pilot-test was conducted in a small sub-sample (Creswell, 2009). For the validity, the draft instruments were given to 3 teachers of engineering, and 2 teachers of economics. Based on their feedback, some items were improved and some others were discarded to have the final shape. For the reliability, the pool of items was administered for 20 Adama University engineering graduates, encoded using SPSS version 20 software and the calculated Cronbach Alpha for the five Likert-scale items was found to be 0.88 which indicated the reliability of the instrument.

Moreover, to trace the graduates the following steps were involved. Firstly, the identification of graduates was made by the list of graduates' received from the archive and registrar offices of Addis Ababa and Bahir Dar universities. However, it appeared to be necessary to follow up the contact addresses of all graduates in order to update their address details; secondly, all graduates were contacted by their telephone addresses. This personal contact was expected to get many positive responses as well as encouraged graduates to participate in the study and, moreover, to identify the remaining group of graduates; thirdly, consent letters were sent to 380 graduates via email. 189 were willing while 78 were unwilling due to time constraints and other related factors. Nevertheless, 91 did not respond at all; fourthly, a questionnaire was sent either through personal email or postal addresses to those graduates whose addresses were correctly found. Some others were made by hand delivery; fifthly, personal network (word of mouth) and use of 'popular' graduates from each group were used to enquire the current addresses of the graduates who could not be traced through previous methods. Furthermore, searching graduates and contacting them via Facebook and using their own networks were the procedures followed to trace the graduates. In between, graduates (respondents) were reminded through their personal email addresses for a minimum of three times besides to SMS messages.

Throughout the ongoing whole process, 161 (83%) questionnaires were collected from graduates of case universities. Of the 161 (83%), 89 were collected from BDU-BiT (48 via email, 36 through hand delivery, 4 through postal address and 1 through Face Book attachment); and 72 from AAU-AAiT (45 via email and 27 through hand delivery). The remaining qualitative data was collected through semi-structured interview and document analysis.

The quantitative aspect of the data was encoded using Excel, STATA and SPSS Version 20. Then after the Screening processes were taking place to check for the possibilities of missing data and the analysis was conducted after checking that there are no missing data. In order to respond to the research questions raised, Chi-square tests, independent samples t-Test, frequency counts, factor analysis, multinomial logistic regression analysis and percentages were computed through STATA software, Excel and SPSS software version 20. Qualitative data was analyzed by using NVivo software. From the analyses made the following summary of findings are obtained.

7.3. Summary of Findings

7.3.1 The Employment Status of 2012 Cohort Graduates of Engineering from AAU-AAiT, and BDU-BiT

The employment status of 2012 engineering graduates of AAU-AAiT, and BDU-BiT is found to be distributed in public, private, and self-employment categories. Therefore, it is traced that the main employer for engineering graduates in Ethiopian labor market tends to be the public institutions while the self-employment category remain to be minimal. The institutional comparison about the employment status of engineering graduates between AAU-AAiT, and BDU-BiT traced to be respectively: 59.7% and 64% graduates in public; 30.6% and 22.5% in private; while 6.9% and 12.4% in self-employment.

7.3.2 The Length of Job Search among 2012 Engineering Graduates

This study is able to trace not only the employment status of 2012 engineering graduates of AAU-AAiT and BDU-BiT, but also portrays the length of time demanded by the labor market in

order to secure jobs. From a total of 158 employed respondents, 34 (21%) were traced to be employed before six months after their immediate graduation; whereas, 82 (52%) and 42 (27%) of AAU-AAiT and BDU-BiT engineering graduates were found to be employed within a year and after a year respectively. This indicates that the majority of 2012 academic year engineering graduates of case universities took some time after graduation to secure jobs. As a result, the proportion of graduates who were able to find jobs within a six-months time after graduation accounts for only 27% in AAU-AAiT, and only 19% in BDU-BiT. All the remaining graduates i.e., 44%, and 29% from AAU-AAiT; and 58% and 28%; from BDU-BiT were able to find employment in between six months and a year-long time; and even after a year respectively. Therefore, the labour market is found to be slow in providing employment to the engineering graduates immediately after graduation.

Besides, the observed late opportunity to find employment, the comments forwarded by respondents on the labour-market situation reveal that the nature of employment to some of the engineering graduates is suffered from lack of appropriate job-security due to short and fixed term contracts. This was also reported to prohibit those graduates who are not employed on a full-time basis to be as productive as expected or as adaptive as required by employers. Further, the extent of earnings from current work, opportunities to learn more new things, abilities to cope up with challenges of working environments and possibilities to play a role in introducing innovations in to the employer organizations is reported to be less encouraging.

The computed statistic to test if the university attended by graduates has something to do with the length of job search reveal that there is no statistically significant relationship between the type of university attended by the graduates and length of job search (chi-square with two degrees of freedom = 3.4379, $p = 0.179$). In relation to this, key informants from different potential employer organizations were interviewed whether they preferred Bahir Dar or Addis Ababa University graduates to their companies. However, the responses from most interviewee drawn among employer organizations indicate that it is the graduates' Cumulative Grade Point (CGPA) and interview results that matter most in the recruitment process other than graduates' university.

7.3.3 The Socio-Biographic Background of Graduates in Relation to Job Search and Employment Opportunities

The proportion of graduates who reported to have had a positive interest towards the field engineering before joining their University education accounts to be the majority of respondents. Such positive regard by the majority of graduates towards the field is believed to have an influence on the academic performance of the students while in campus and their career prospects after graduation. The comparative view of the respondents' interest towards their field prove that still the majority of AAU-AAiT (90%) and of BDU-BiT (86.4%) were found to be with positive attitude towards their field. Hence, the statistical test of the relationship between interest and length of employment displays a statistically significant value (chi-square with two degrees of freedom = 10.1440, $p = 0.006$; and Fisher's exact = 0.002).

The contribution of prior education to university study was the other aspect examined in the study. The findings in relation showed that the majority of respondents in both universities reported the contribution of prior education to their university study which may impact the academic performance and employment opportunities of the graduates. The relative distribution of respondents according to the contribution of prior education across the case universities showed that the majority of respondents, (83%) in AAU-AAiT and (81%) in BDU-BiT rated at the scale of 'high' and 'very high'. This shows that prior education has significant contribution for the higher study of respondents of both case universities. Nevertheless, the relationship between Prior Education and Length of job search was tested by using the Pearson Chi-square and the result displays that there is no statistically significant relationship between prior education and length of job search (chi-square with eight degrees of freedom = 7.1100, $p = 0.0525$; and Fisher's exact = 0.597). Even though, this study didn't show the contribution of prior education to job search directly, prior education's importance to university study is supposed to have roles in academic performance and employment opportunities indirectly since it could influence the CGPA.

The examination made to identify the length of job search for engineering graduates across the different fields of study disclose that only 20% electrical, 20% mechanical, 17% civil, 22% chemical graduates were able to secure jobs within a six-months period of time. All the other engineering graduates were able to find employment after a six-month time. The comparative

view of the descriptive information to all fields of study revealed that chemical engineers seem to be luckiest to secure jobs within six months' period of time after their immediate graduation whilst civil engineers are the least lucky ones to found jobs in the shortest period of time. Nevertheless, the administered Pearson Chi² Test indicated that there is no statistically significant relationship between field of study and length of job search (Chi-square with six degrees of freedom = 9.8254, $p = 0.132$). This implies that what was observed is a chance matter other than a statistical issue. Such absence of significant role played by the units to match their graduates with the labour market within the shortest possible time implies the underplay of their academic responsibilities related with the realization of the specific missions such as meeting the interests of the external and internal strategies by which graduate labour market is supposed to be at the center.

The attempt made to trace the contribution of CGPA to length of job search indicates that: among the graduates with maximum academic performance i.e., (CGPA 3:75-4:00), it is only 22% graduates who were found to be employed within six months' time. All others whose CGPA is below or equal to 3.74 i.e., 78% were found to be employed later than 6 months. Surprisingly, the comparative view among all four groups revealed that graduates with CGPA 3:25-3:74 are in a better position to secure jobs before six months than those who have higher scores. The possible explanation for those graduates with a great distinction status (CGPA 3:75-4:00) to be late for employment as compared to those with distinction scores (CGPA 3:25-3:74) may be that the former are looking for big opportunities. Of course, those graduates with scores around the base were found to be among those who took longer time to search employment. Mean while, this fact was well supported by the views of inquired employers who reported that Cumulative Grade Point (CGPA) is one of the major criteria regularly used to recruit graduates to the job market. Nonetheless, except few respondents who have reported to use definite criteria such as the match of a curriculum to the employer's business and the reputation of the institution as a source of labour, the majority of respondents from employer companies assured that they don't have a list of institutions from which they prefer to select graduates.

The endeavor made to trace the contribution of gender to length of job search shows, of the total female graduates, only 26%, and among male graduates 20% were found jobs within six months' period of time; 45% females and 54% males within a year; 29% females and 26% male graduates

after a year period of time. Especially, in relation to immediate employment after graduation, it looks that the female graduates outnumbered their male counterparts in securing jobs. The reason for this variation, as to the interview respondents, includes the measures attached to the affirmative action and to the Ethiopian government policies which emphasized to implement and monitor the Equal Employment Opportunity (EEO). Conversely, the calculated Pearson Chi2 Test indicates that there is no statistically significant relationship between gender and length of job search (chi-square with two degrees of freedom = 0.7539, $p = 0.686$). Therefore, the observed difference on the relationship between gender and length of job search in the descriptive data is probably a result of chance.

Tracing the contribution of age of the graduate to length of job search was the other undertaking in this study. Thus, even though the age distribution of engineering graduates under this study is not dispersed, the majority of youngster graduates with in the age range of 22-24 were seem to keep being idle for work beyond six months after graduation. Thus, in the modern world where by graduates are to be recruited before leaving their University, a long term unemployment tends to characterize the institutions under this study. In addition, the administered Pearson Chi2 Test reveal that there is no statistically significant relationship between age and length of employment (chi-square with fourteen degrees of freedom = 15.0985, $p = 0.371$; and Fisher's exact = 0.259). Of course, attempts to triangulate the findings through an interview schedule display that age matters most if graduates want to be employed by the Maritime Industry otherwise it doesn't have any significant value for employers in the other sectors.

The relationships between mother's education and length of job search were the other aspect demonstrated in this study. Accordingly, besides being the number of graduates with educated mothers is scant, the data also does not provide a clue for being a graduate with educated mothers to bring an immediate employment opportunity. Similarly, the calculated Pearson chi2 Test show the absence of statistically significant relationship between Mother's education and length of search for employment (chi-square with six degrees of freedom = 6.1509, $p = 0.406$; and Fisher's exact = 0.420). The same is true to the relationships between father's education and length of job search. Both the descriptive data and the calculated Pearson chi2 Test demonstrates that there is no statistically significant relationship between Father's education and length of job search (chi-square with six degrees of freedom = 9.2498, $p = 0.160$; and Fisher's exact = 0.130).

The study examines the relationship between parental income and length of job searching and it is found to be that parental income doesn't have a positive effect on the graduates' career prospects. What was proved by the calculated Pearson chi2 test also reveal that there is no statistically significant relationship between parental income and length of job search (chi-square with four degrees of freedom = 2.7391, $p = 0.602$). Perhaps, the frequency distribution which shows that mostly engineering graduates come from low income family (<5,000/month) and they had got employment after six months (within and after a year) time witnesses the availability of limited scopes to those graduates from low income parents for opportunities like creating self-employment.

7.3.4 The Supportiveness of HEIs to the Subsequent Employment of AAU-AAiT and BDU-BiT Graduates

This sub-section deals with the supportiveness of the structure, curriculum, study conditions of higher education and individuals' study behavior to the subsequent employment of AAU-AAiT and BDU-BiT Graduates. Consequently, the supportiveness of the organizational structure of AAU-AAiT and BDU-BiT for graduate employment is reported to be limited as seen from the ratings by graduates themselves. In addition, limitations were reported to be observed in the placement of graduates to Internship through University –Industry linkage; in the provision of Career Guidance and Counseling Services or providing advices and trainings on the job searching process; in recommending graduates for an appropriate job; in providing entrepreneurial trainings; in preparing different events like job fairs; and even in using role model presentations etc. in order to promote different fields of studies among the employers.

Besides, the analysis made to compare responses from both AAU-AAiT, and BDU-BiT on the supportiveness of 'Higher Education Structure' category displays that there is no statistically significant difference between both Institutes [$t_{(156)} = -.453, p > .05$] which implies the prevalence of lack of supportive organizational structure for graduate employability. Qualitative data obtained from the attached open-ended questions to the questionnaire, and the interview schedules to teachers and officers of case universities provide almost similar views in that the universities tend to be responsible only on producing knowledgeable and skillful graduates but as if they have low responsibilities with regard to the employment of the graduates. No supports

were observed from teachers other than some introductory seminars on entrepreneurship around the end of programs and writing of recommendation letters while leaving the campuses. Even the supports from the universities themselves were not beyond placements for internship; rather, focusing on solving the day to day administrative problems, disregarding tracer studies about graduates tends to be the observed weaknesses.

Furthermore, the contribution of higher education structure variables to the job search of engineering graduates was estimated by using multinomial logistic regression analysis. Considering the supportiveness of Higher Education Structure to graduate employment from five constructs i.e., the University itself, University–Industry linkage Office, Alumni Office/Career Guidance and Counseling Services, Department or the Academic Staff and student council, a factor analysis was conducted and results revealed that University itself (0.4996) is found to be much influential at factor1, while student council (0.0806) has lowest influence on factor1. However, the influence of student Council (0.4595) was observed at factor2 while Alumni Office (0.6118) appeared the least. Therefore, the percentages computed from the exponential functions reveal that the overall contribution of the Higher Education structure variables in increasing the probability of graduates being employed within six months' period of time is insignificant at both AAU-AAiT and BDU-BiT. From this, it is possible to deduce that both Institutions' organizational structure is not supportive enough to graduates' for securing jobs before a period of six months after their immediate graduation.

The role of the higher education study conditions (facilities) to employment of graduates were examined and found that there were study conditions which can be classified as demanding to the engineering graduates of the case universities in the year 2012. Of the services or facilities that were reported to be challenging are the use of Information and Communication Technology; Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project works, etc., Engagement with Field-based conferences, seminars, forums, workshops etc imply services related to the specified items were found to be. In contrast, the facilities libraries, laboratories, workshops, etc and modalities such as Peer-learning arrangements (Contacts with fellow students) in the case universities were reported to be with positive contributions for study conditions of graduates. Unfortunately, the responses show that it was common to observe MSC students in BDU-BiT with better access for such apparatuses and services. Therefore, the

experience of engineering graduates to be benefited from some aspects of study conditions is limited. Interviews with engineering instructors from both case universities also reveal about the access for proper use of internships and work placements as a teaching mode, group assignments, problem-based learning and more interactive modes of teaching than traditional methods so that to contribute to the search for and success in finding employment.

Further, the comparisons made to test the contribution of ‘Higher Education Study Conditions’ to job search between universities, it is found that there is no statistically significant difference between AAU-AAiT and BDU-BiT with regard to ‘the help of Higher Education Study Condition to the graduate employment’ [$t(156) = -.482, p > .05$]. Therefore, the absence of differences in results implies that graduates of both universities sense the lack of supportive study conditions or facilities for graduate employability.

Moreover, the extent of which the study conditions at higher education institutions affected the employment opportunities as well as job search of engineering graduates was tested by using multinomial logistic regression analysis. Thus, the conducted factor analysis prior to the multinomial logistic regression analysis, show the influence of ‘off-class contacts with instructors’ (0.5372) at factor1 the most, while ‘peer-learning’ (0.1117) has lowest influence on factor1. Again, use of information and communication technology (0.4639) influences at factor2 the most, and ‘engagement in field based conferences, workshops and seminars’ (0.1315) influence the least.

Thus, the strong factor (factor1) was chosen to generate the multinomial logistic regression analysis and results reported that the odds of being employed before six months are 32% lower than those for employed within a year for each 1-Unit increase in Higher Education Study Condition factor. The odds of being employed within a year are 27% lower than those for employed after a year for each 1-Unit increase in Higher Education Study Condition factor. The odds of being employed before six months versus employed after a year are 22% lower for each unit increase in Higher Education Study Condition factor. Above all, from the exponential functions and percentages it is possible to infer that the AAU-AAiT and BDU-BiT facilities (study conditions) are not supportive for graduates in order to be successful in the job market by obtaining employment before six months’ period of time.

The rated mean scores about the relevance of the Higher Education Curriculum to engineers for the graduate employment reflect that the higher education curriculum of AAU-AAiT and BDU-BiT is relevant for the graduate employment. The high ratings by the graduates themselves revolves around the design of objectives of courses/learning outcomes based on the national goals and socio-economic realities of the nation; the entertainment of contents of the courses of the study elements like multi-disciplinarity so that to equip graduates with soft- and hard-skills from diverse areas. In addition, the recognition of vitality of modern and active learning methods of delivery (i.e.,) and use of the varieties of evaluation methods and Instructional aides (Teaching Materials) were reported to be relevant for studies while campus and for the world-of work after graduation.

However, evidence from the open ended questions revealed that the engineering curriculum is losing its practicality. Even though “engineering should be practice-oriented and every course should have some visible output (product) that demonstrates what the course is about”, some show concerns on the issue quality. Still, others from employer companies explained that though they have opportunities to take part in curriculum design or review, guest-speaking, IT skills development trainings, work placement/ experiential learning opportunities, and career / job fairs, they are reluctant to confirm on the relevance of engineering curriculum to the world of work especially as tested against self-employment. Above all, the previous curriculum was condemned by the respondents from both the instructors’ side and employers to lack clarity with regard to the graduate profile, to fail in meeting the current labor market needs, national goals, governmental policies and strategies.

Besides, the conducted comparisons and test- of significance on the ‘relevance of higher education curriculum’ category displays that responses of graduates in both AAU-AAiT, and BDU-BiT are found to be nearly similar so there is no statistically significant difference between both Institutes [$t_{(156)} = -1.778, p > .05$]. The absence of differences on the responses of graduates of both universities on the relevance of the higher education curriculum may be emerged from the harmonized curriculum of AAU-AAiT and BDU-BiT. However, any inconveniences observed in the curriculum before the academic year of 2012 are corrected with the revised curriculum of all engineering field in the academic years 2013-14. In spite of the direct link of the corrected and revised curriculum to the 2012 cohort of graduates, it seems that

teachers were aware of the weaknesses that the curriculum had. The measures related to make the curriculum relevant through mechanisms of quality assurance, human resource development, and better state of capacity building in material resources like laboratories, workshops, and libraries following the revision are believed to have roles for the subsequent graduates.

The analyses of documents, specifically, rationales of the revised engineering curriculum on the bases of their relevance to the Education and Training Policy and Strategy (1994); the Education Sector Development Program (1997-2017); the Industrial Development Strategy (2003); the Plan for Accelerated and Sustained Development to End Poverty (2006); and Growth and Transformation Plan (GTP I) reveal that, in one way or the other, all the rationales explained in the curriculum of electrical, mechanical, chemical and civil engineering are found to match with the aforementioned parameters. Meanwhile, rationales of electrical engineering is trying to equip graduates with sufficient theoretical and practical skills that would enable them to be engaged in and work at the Electrical/Electronic sector of the national economy'; to meet the needs of the main employers of the graduates in the operation and maintenance of electrical and electronic equipment and machines'; to afford the graduates' versatility in terms of employment'; and being flexible across various disciplines to enable graduates apply their knowledge and skills to lead multi-disciplinary teams to solve the increasingly complex problems of the industry and technology'.

Likewise, rationale of Chemical Engineering, wishes to produce enough professionals of chemical engineers to different sectors of industry considering government's priority; to fit to the industrial requirements of the country; to alleviate poverty and food shortage, as well as prevention of environmental deterioration from traditional practice.

The curriculum rationale of civil engineering also indicates its responsibility for producing engineers who are knowledgeable and skilled to: 'build and maintain bridges, highways, railways, tunnels, airports, dams, water treatment and distribution systems and large buildings' is the Civil Engineering one besides its intention to meet the requirements of the seven strategic pillars declared in the Growth and Transformation Plan for Ethiopia's development efforts: i.e., sustain rapid and equitable economic growth, preserve agriculture as a major source of economic growth, create favorable conditions for industry to play a key role in

the economy, infrastructure development, expand provision and quality of social services, build public institutional capacities and deepen good governance, and promote women ensure youth empowerment and broaden social inclusion.

Moreover, from the curriculum rationale of Mechanical Engineering, tend to indicate its conviction on the necessity of making the education more practice oriented and focused to the different areas of industrial applications (medium and small) in order to make the engineers more productive, mainly in leading graduates of mechanical engineering towards self –employment through entrepreneurial courses and through introducing of appropriate technology for rural development. By doing so, the curriculum rationales of the engineering fields across the programs are found to be treating issues of employability and employment, and labor market issues as well.

Other than the aforementioned descriptive findings, the extent to which the higher education curriculum is relevant to the graduates' job search was computed based on the quantitative data by using multinomial logistic regression analysis and results showed that while the influence of 'objectives' (0.5742) was recorded at factor1 the most, 'course contents' (0.5494); 'methods of delivery' (0.4812); 'modes of evaluation' (0.3875); and 'teaching materials' (0.3028) had indicated respective influences on decreasing intensity. Thus, from the factor analysis conducted, factor 1 was found to be the strongest factor, and it was used to generate the multinomial logistic regression analysis and results were described as the odds of being employed before six months are 54% that is lower than those for employed within a year for each 1-Unit increase in higher education curriculum _factor. The odds of being employed within a year are 53% lower than those for employed after a year for each 1-Unit increase in higher education curriculum _factor. The odds of being employed before six months versus employed after a year are 27% lower for each unit increase in higher education curriculum _factor. Above all, the multiple logistic regression analysis evidently predicts the small effect of the HE curriculum in order to enhance the odd ratio of graduates for immediate employment. Principally, understanding the professional success of graduates is important for curricula formation to make them suitable for current challenges and smoothing the transition of graduates in to the labour market (Melink & Pavlin, 2009).

The role of individuals' study behaviour on the graduate employment was the other variable examined in relation to the graduate job search. Ratings done by the graduates themselves through the questionnaire instrument indicates that items related to learning about oneself – one's capabilities, confidence, life interests and career orientations; development of Self-Efficacy and Meta-cognition appears to be highest among respondents of both case universities. In addition, exposure for experiential learning such as emphasizing on learning from issues work-related as well as subject-related knowledge) tends to be important; studying in a range of time and place situations; use of new technologies and communication media for active and interactive learning tends to be rated higher.

The comparisons made between respondents of both universities regarding items related to Job searching methods reveal that there are nearly similar findings in all mechanisms except the Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge) [$t_{(156)} = 2.539, p < .05$] and Use of new technologies and communication media for active and interactive learning [$t_{(156)} = 2.281, p < .05$] which demonstrate the availability of statistically significant difference between both institutes. Moreover, the extent of which the extent does individual study behaviour affects the graduates' job search was also measured by using multinomial logistic regression analysis. Consequently, the conducted factor analysis show that while the influence of 'studying in an interactive environment' (0.648) is high at factor1 the most, 'use of new technologies and communication media' (0.6397); exposure to experiential learning (0.5879); studying in a range of situations (0.5735); continuous reading (0.4739) has lowest influence consecutively with a decreasing tone on factor1 respectively. From the factor analysis results, the strongest factor (Factor1) was taken to generate the multinomial logistic regression analysis and results were reported as the odds of being employed before six months are 70% lower than those for employed within a year for each 1-Unit increase in individual study behaviour _factor. The odds of being employed within a year are 59% lower than those for employed after a year for each 1-Unit increase in individual study behaviour _factor. The odds of being employed before six months versus employed after a year are 27% lower for each unit increase in individual study behaviour _factor. In the meantime, the exponential equation clearly confirmed that the probability of being secured for graduate jobs is minimal and the scatter plots also demonstrated the same truth.

7.3.5 Graduate Competencies (Employability Skills) Acquired by graduates, as required by the Current Labor Market

The detailed examination of the ratings for items related to competency reveal that among the competences required by the current labor market, the most 3 items highly rated by graduates of AAU-AAiT and BDU –BiT include: mastery of own field of study or discipline; ‘teamwork skills (i.e., coordinating activities and managing tasks/ negotiating skills); and critical thinking skills; competencies on multidisciplinary knowledge; and abilities to rapidly acquire new knowledge (i.e., alertness to new opportunities and Know how to come up with new ideas and solutions).

Further, the IT skills (computer skills), research skills, time management skills; interpersonal and communication skills and emotional intelligence (including self-awareness, strength of character, confidence, motivation, leadership & assertiveness) and visioning skills are among the lists reported to as significant to be acquired by graduates and required by employers.

The comparative analysis on the extent at which competencies are well acquired by the graduates of both AAU-AAiT, and BDU-BiT indicate that the results are nearly similar in all competences except the Teamwork skills (i.e., coordinating activities and managing tasks/ negotiating skills) [$t_{(156)} = 2.035, p < .05$] and the research Skills [$t_{(156)} = 2.807, p < .05$] which implies that graduates of AAU-AAiT have better access in acquiring teamwork skills (i.e., coordinating activities and managing tasks/ negotiating skills) besides to research skills.

The question forwarded to graduates to indicate the top five competencies that they feel are highly required by the current labor market in order of priority include: Mastery of own field of study/discipline ranked first with, ‘IT skills (Computer skills), ‘interpersonal and communication skills and emotional intelligence (including self-awareness, strength of character, confidence, motivation, leadership and assertiveness), and ability to rapidly acquire new knowledge (i.e., alertness to new opportunities and know how to come up with new ideas and solutions).

Once more, the extent of which individual competencies related to the job search of graduates’ was calculated by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted and results are reported that factor1, factor2, factor3 and factor4 increase as Mastery of ones own field increases and it was only factor 5 that display decreases as Mastery of

ones own field increases. Factor1, factor2, Factor3 and Factor 5 increase as multidisciplinary knowledge increases, and it was only factor 4 decreases as multidisciplinary knowledge increases. Factor1, factor2, factor3 and factor4 increase as the rapidly acquire new knowledge ability increases but factor5 decreases as rapidly acquire new knowledge ability increases. Factor2, factor3, factor4 and factor5 increase as IT skills and research skills, interpersonal and communication skills, critical thinking skills and creative thinking and visioning skills increase. Factor1, factor2 and factor3 increase as time management skills increase but factor 4 and factor 5 decreases as Time management skill increases.

Generally, Interpersonal and Communication Skills (0.6521) influence factor 1 the most and Research Skills (0.0842) has lowest influence on factor1. The influence of the item related to 'Mastery of your own field' (0.5286) at factor2 the most, and Research Skills (0.0198) has the lowest influence on factor2. Research Skills (0.4896) influences factor3 the most and Mastery of ones own field (0.0354) has lowest influence on factor3. IT skills (0.3222) influence factor4 the most and Time management skill (-0.0570) has lowest influence on factor4. Critical Thinking Skills (0.1555) influence factor5 the most and Ability to rapidly acquire new knowledge (-0.0691) has lowest influence on factor5. Thus, factor1 is the strongest among five factors and it was chosen to run the Multinomial logistic regression analysis and the result reported as the odds of being employed before six months are 49% lower than those for employed within a year for each 1-Unit increase in Competencies _factor. The odds of being employed within a year are 43% lower than those for employed after a year for each 1-Unit increase in Competencies _factor. The odds of being employed before six months versus employed after a year are 11% lower for each unit increase in Competencies _factor. As can be seen from the multinomial regression analysis, the probability of finding employment is very low. From this it is possible to say that the individual competencies acquired from the HEIs are less likely helpful to graduates in for quickly find employment.

7.3.6 The Supportiveness of Labor Market Conditions to Employment Opportunities of University Graduates

In relation to the assessment on the supportiveness of the labour market conditions to graduate employment opportunity, the item relate to the number of new jobs created by economic

expansion/large quantity of jobs in the labor market (the macroeconomic condition) appears to be rated highest by respondents of both case universities; while the item on civil-service employment requirement policies and labor market regulations like affirmative action tends to be reported as an important element. Besides, matches between Education and Job or the complementarity between labour market and educational policies was reported significant.

Most of the employers replied that the labor market conditions specifically labor market laws and policies are not encouraging enough to employers to increase own capacities, to expand business in order to absorb more graduates from time to time. Therefore, the major outlet to graduates to enter to the labour market is found to be through the public organizations than being employees of the private sector or become self-employed. What is observed to be as the interest of officials of the government is insisting graduates to create jobs in a condition where there are no relevant trainings for such engagements. Rather some officials heard insisting engineering graduates to be involved in jobs like road construction using a 'cobble stone' which undermines scientific knowledge and skills obtained from the universities to that of a daily-laborer type of manual work which could be performed without formal trainings, sciences, principles and theories.

The comparisons made between universities using a statistical test on the Supportiveness of the Labor Market Conditions to graduates' employment displays the absence of a statistically significant difference between both institutes [$t_{(156)} = -.814, p > .05$]. What is more, the extent at which the labor market conditions influence graduates' job search was also measured by using multinomial logistic regression analysis. For the purpose, factor analysis was conducted and results show that while the influence of 'Macroeconomic condition' (0.4581) is strong as factor1, followed by 'policies and labor market conditions' (0.4313); and 'Education-Job match' (0.2024) have lowest influence on factor1 respectively. From the factor analysis results, factor 1 was found to be the strongest factor in order to generate the Multinomial logistic regression analysis and results were found out that the odds of being employed before six months are 78% lower than those for employed within a year for each 1-Unit increase in Labor Market Conditions _factor. The odds of being employed within a year are 66% lower than those for employed after a year for each 1-Unit increase in Labor Market Conditions _factor. The odds of being employed before six months versus employed after a year are 35% lower for each unit increase in Labor

Market Conditions _factor. This implies that labor market conditions are less likely helpful to graduates to get employment within six months' period of time after their immediate graduation.

7.3.7 Job Searching Methods Practiced by Graduates to Look for Employment

The most commonly used Job searching methods practiced by graduates to look for employment are reported to be related with mechanisms like Advertisement in news, the Internet, and approached by employers; while there are also occasions whereby 'Family relationships', 'Friends or acquaintances', 'Help of higher education institution' are doing their contributions.

The comparisons made to see the test- of significance on the Job searching methods practiced by graduates in both AAU-AAiT, and BDU-BiT indicate that it is nearly similar mechanisms that are practiced except statistically significant difference was observed in the use of Internet [$t_{(156)} = -3.350, p < .05$] and Friends or acquaintances [$t_{(156)} = 2.087, p < .05$] by graduates from AAU-AAiT which demonstrates the availability of better possibilities to use internet, friends or other acquaintances by graduates of AAU-AAiT than BDU-BiT.

7.4. Conclusion

The employment status of AAU-AAiT and BDU-BiT engineering graduates of the 2012 cohort in the Ethiopian labor market is found to be distributed mainly in public organizations followed by private companies and at a minimal stage at a self-employment category. Even though, the descriptive data tend to display some variations in the status of graduate employment across fields of study, the dominant picture remains to show that the government organizations are the major providers of labour market to engineering graduates.

The length of time demanded by the labor market to engineering graduates of AAU-AAiT and BDU-BiT in securing jobs is found to be longer as compared to the acceptable standard which expects the graduated labor force to join the world of work within the first six months' time following their graduation otherwise the time range that graduates stay through looking jobs beyond six months is considered to be as a time of unemployment.

The examination of employment opportunities to engineering graduates of the AAU-AAiT and BDU-BiT of the 2012 cohorts indicate that the majority of the graduates are not getting employment in between immediately after graduation to six-month time. Of course, statistical values demonstrate relationships between gender and length of job search, interest and job search. However, most tend to suffer from longer periods of job search ranging from a year, two or above. This is found to be common whether or not the graduate is male or female, youngest from the group members, had interest towards the field, come from the educated families, or even from families of with relatively a better income. The observed variations among universities are not also significant in relation the socio-biographic conditions contribution to job search activities.

The supportiveness of variables such as HEIs' structure, study condition/facilities, curriculum and individual study behaviour to the job search as well as subsequent employment of graduates are found to be different on the basis of items and institutes. However, the responses obtained by the questionnaire, the data secured through the interview and the document analysis from both case universities indicate that even though all variables have had relative contributions to the knowledge acquirement and skills development of graduates while in campus, their impact after graduation in supporting them to be engaged in the labour market within a short-possible period of time, suitable specialization and proper amount of pay or term-of contract is found to be beyond reality.

The employability skills (competencies) acquired by the graduates of AAU-AAiT and BDU-BiT, is reported to be much in congruent with requirements of the graduate labor market and this is reported to be addressed through the curriculum, the campus-based trainings, internships and with constant contacts to the stakeholders. Nevertheless, the opinion of employers and some graduates is found to be indifferent from the aforementioned positions because most graduates are found to be looking for extra trainings as soon as joining the labour market.

The labour market conditions mainly the macroeconomic environment tends to fail to use engineering graduates in productive sectors as immediately as possible. As a result, those minds and hands shaped to contribute a lot for the national and international socio-economic realities remain to be idle for some time with the adverse effects of expired knowledge and skills.

Though not much fruitful as expected, the most commonly used job-searching methods by engineering graduates are advertisements, Internet, and approached by employers; while there are also occasions whereby ‘family relationships’, ‘friends or acquaintances’, ‘help of higher education institution’ are doing their contributions.

7.5 Recommendations

From the summarized findings and the conclusions made, this research has come up with the following recommendations:

- 7.5.1 The employment status of the engineering graduates of AAU-AAiT and BDU BiT reveal that the chief employers for graduates are government institutions without variations across university, field of study, or gender. Though this study found employees of private institutions, they are low as compared to the public employees. Worse of all is the insignificant portion of the self-employed graduates. These patterns of employment tend to leave graduates to focus on the public institutions and more so to the universities, as if they are preparing graduates only to the public sector careers. Thus, as development is believed to be unthinkable with the sole labour market window of public institutions, efforts shall be made by the universities themselves to produce job-creators than job-seekers.
- 7.5.2 Policy makers and stakeholders shall work collaboratively on how to address the employment and employability of graduates through expanding a private sector employment opportunities. Besides, propagating the benefits of job-creation, encouragement of engineering graduates to find a job by setting up their own business and providing the necessary supports shall not be left for chances but the concern of policy makers, universities and all other stakeholders. Further, educators, political leaders, and the media have to devote time, resources, and attention towards creating awareness on the relevance of knowledge and skills for graduates to be job-creators than job-seekers.

- 7.5.3 Evidence about the length of job search of engineering graduates to the 2012 cohort in AAU-AAiT and BDU-BiT indicated that the probability of being employed within a six months' time after graduation is found to be a remote occurrence for the majority. This is because of the inability of the labour market to absorb all of the graduates at a specified period. Therefore, this calls for the policy makers and stakeholders towards expanding access at least to a level that corresponds with 70:30 packages of field distributions (Science Vs Social Science).
- 7.5.4 The substantiated finding from the present study confirmed that long-term unemployment/job search is the phenomena prevailed among the engineering graduates of AAU-AAiT and BDU-BiT disregarding field of study and/or university. Therefore, policy makers have to do whatever is necessary to broaden the labour market so that to effectively utilize the skilled labour on time and to save graduates from suffering with unemployment and associated problems.
- 7.5.5 Findings about job-searching mechanisms in this research disclosed that engineering graduates are looking for vacancies, more of, through advertisements on notice boards and local news papers. Even though using such services may not be disregarded as alternatives, employers shall work for more technologically-supported and modern vacancy-announcements not only to find out competitive labour force but also to protect applicants from unnecessary expenses or from failure of job-related information. Moreover, effective use of internet and private employment agencies shall also be an outlet for graduates to look for vacancies.
- 7.5.6 Even though higher education institutions in Ethiopia are increasingly devoted much resources to the formation of human capital and continued to produce a number of graduates, they tend to neglect the major aspect of following the whereabouts of their graduates in terms of engagement in the labour market. Thus, universities are highly recommended to conduct tracer studies so as to obtain information about their graduates and to make timely corrections on the various aspects of their trainings and field diversifications.

- 7.5.7 Universities and the employers in the world- of work shall improve and develop the graduates' general and field-specific competencies by strengthening specific trainings and making improvements in teaching and learning modes so that to broaden the choice of students for fields of studies, maximize employment status of graduates and to shorten the time required for job-search.
- 7.5.8 Universities need to demonstrate concrete activities in checking the degree of equipping graduates with general competencies required by employers and even the applicability in different work situations. Further, the establishment and improvement of work of career centers, understanding the positions of employers, tracking of graduates, and in particular, their institutional achievements in enabling own graduates entering the labour market shall be their major concern.
- 7.5.9 Facts from this study divulge that the maximal combination of the higher education factors i.e., organizational structure, curriculum, study conditions and individual study behaviour have low contributions to the graduate employment or job search process. Accordingly, the influential factors of employment such as the structure, curriculum, study conditions and behaviors should be well considered and well thought-out by the HEIs based on the demand of the current labor market.
- 7.5.10 Comparisons made on engineering graduate labour market conditions between AAU-AAiT and BDU-BiT reveal most the similarities other than the differences. For instance, there are no significant differences between the case institutes in preparing their graduates for work, and follow-ups on how employers absorb those graduates in relation to the economic situation, labour legislation, organization of HRM practices, etc. Of the variations are related to the graduates and mainly revolving around the time of job search, type of employer and the way followed by graduates to search jobs like through own contacting of employers, through family, friends, and acquaintances which seem to favour graduates of the former than the latter.

7.5.11 Bringing broad and depth data about graduate labour market in Ethiopia was far from this study since it was confined to only two higher education institutions (AAU-AAIT and BDU-BiT). Therefore, future researchers are encouraged to embark on tracer studies of this kind, either inland by extending scope and increasing variables or if possible, examine the issue on comparative basis across nations. Further, implications of this research for future researchers include investigation of what and how other socio-biographic background factors influence subsequent employment of the graduates.

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APPENDIX: A

**SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE AND POLICY STUDIES
PhD PROGRAM IN INTERNATIONAL AND COMPARATIVE EDUCATION**

A Questionnaire to be filled by graduates of Engineering in 2012

Dear Graduates,

The following questions are designed by a researcher who has conducted Doctorial Dissertation titled “Higher Education and Labor Market in Ethiopia: A Tracer Study of Graduate Employment in Engineering from Addis Ababa and Bahir Dar Universities”. The main objective of this study has been examining the factors influencing employment and work opportunities of engineering graduates in Ethiopia, using results to suggest higher education policies and employment strategies.

I assure you that your replies will be used only in the frame work of the research project. Your information will be treated strictly confidentially!

If you wish, the researcher will send you a summary of the most important results. Please return the completed questionnaire as soon as possible to the address mentioned below.

Email address: jerusalemyib@gmail.com

Thank you very much for your kind support!

Jerusalem, Y.

A. Biographic Data

1.	What was the name of the institution you graduated from?		
2.	Field of Study		
3.	CGPA	☐ 2.00-2.74 ☐ 2.75 -3.24 ☐ 3.25-3.74 ☐ 3.75-4.00	
4.	Gender		
5.	Age		
6.	Parental education and income	Mother's education	Father's ducation
	6.1. What is your parents highest education?	☐ BA/BSC	☐ BA/BSC
		☐ MA/Msc	☐ MA/Msc
		☐ PhD	☐ PhD
		☐ Other (<i>please specify</i>).....	☐ Other (<i>please specify</i>).....
	6.2. How is your parents income/month?	☐ > 10,000 Ethi. Birr ☐ 5,000 - 10,000 Ethi. Birr ☐ < 5,000 Ethi. Birr	
7.	Were you interested/motivated for the field Engineering before you joined higher education?	☐ Yes ☐ No	
8.	To what extent did your prior education helpful to your university study?	1. Very low ☐ 2. Low ☐ 3. Moderate ☐ 4. High ☐ 5. Very high ☐	

B. Higher Education

B1. Structure

How effective were the contribution of different components of the Higher Education system (Organizational Structure) to your employment?

1.very low 2.low 3.moderate 4.high 5.very high

1.	The University itself (i.e., If it involves employers in different decision making processes and if it prepares events in order to invite employers to visit and hire graduates)					
2.	University –Industry linkage Office in the Institute of Technology (IoT) (i.e., If it placed graduates in Internship by considering their prospects and future careers)					
3.	Alumni Office/Career Guidance and Counseling Services /Career Advising Office (i.e., If it provides advice and trainings on the job searching process and career opportunities of prospective graduates)					
4.	Your Department or the Academic Staff (i.e., If efforts were made by your teachers in recommending you for an appropriate job and if it gives an entrepreneur trainings)					
5.	Student Council (i.e., If it prepared different events like job fairs, role model presentations etc. in order to promote your fields of study)					

B1₂. What Comments do you have in relation to the contribution of the University Organizational Structure to your employment? 						
B2. Study Condition B2₁. To what extent did the study conditions (facilities) in your higher education matter your subsequent employment?		1.Very low	2.low	3.moderate	4.high	5.Very high
1.	The facilities in the university (i.e., libraries, laboratories, workshops, etc.)					
2.	Information and Communication Technology					
3.	Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project works, etc.)					
4.	Peer-learning (Contacts with fellow students)					
5.	Engagement with Field-based conferences, seminars, forums, workshops etc.					
B2₂. What other study conditions had their contribution to your employment? 						

B3. Curriculum		1.Very low	2.low	3.moderate	4.high	5.Ver y high
B3₁. How do you rate the relevance of the following curriculum components in your higher education in order to remain employable?						
	Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and soio-economic realities of the nation)					
	Contents of the Courses of the study (i.e., If the Multi-disciplinarity is entertained in the courses to equip graduates with soft-skills and hard-skills from diverse areas .					
	Methods of Delivery (i.e., Modern and active learning methods)					
	Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods)					
	The Instructional aides (Teaching Materials) (i.e., If there are appropriate teaching aids in order to facilitate the teaching learning processes so as to be effective)					
B3₂. Do you have suggestions to improve the Curriculum (Courses) for the coming Cohorts of Engineering students? 						

B4. Study Behavior		1.Very low	2.low	3.Moderate	4.high	5.Very high
B4₁. How do you rate the role of the following descriptions related to your study behaviour on your employment?						
	Continuous readings to update knowledge and capabilities (i.e., learning about oneself – one’s capabilities, confidence, life interests and career orientations (Development of Self-Efficacy and Meta-cognition)					
	Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge)					
	Studying in a range of situations (time, place)					
	Studying in an interactive environment with peers and teachers					
	Use of new technologies and communication media for active and interactive learning					
B4₂. Do you have any suggestions on the relationships between your study behaviour and your employment? 						

C. Competencies

C1. To what extent are the following graduate attributes (competencies) required by the labor market in your job search?		1.very low	2.low	3.Moderate	4.high	5.Very high
1.	Mastery of your own field of study or discipline					
2.	Competencies on Multidisciplinary knowledge					
3.	Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)					
4.	Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills)					
5.	IT skills (Computer skills)					
6.	Research Skills					
7.	Time management skills					
8.	Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness)					
9.	Critical Thinking Skills					
10.	Creative Thinking and Visioning Skills					

D. Job Searching/Transition Period from Higher Education to Labor Market

1. How long did it take you to find your first job after graduation?

☐ Less than 6 Months

☐ A Year

☐ More than a Year

2. Please specify your current employer/organization.

- If self (field of work) _____
- If Private (Sector) _____
- If Public (Sector) _____

E Job Searching Methods

E1. To what extent did the following job searching methods functional in your job searching period?

1.Very
low

2.low

3.Moderate

4.high

5.Very
high

1. Advertisements in News paper & Notice Boards

2. Internet

3. Approached by employer

4. Family relationships

5. Friends or acquaintances

6. Help of higher education institution

E2. If you are employed by following other methods of job searching, please specify

F. Labor market Conditions

F1. To what extent are the following Labor Market conditions assisted you to get employment?		1.Very low	2.low	3.Moderate	4.high	5.Very high
1.	The macroeconomic condition (i.e., The number of new jobs created by economic expansion/large quantity of jobs in the labor market)					
2.	Civil-service employment requirement policies and labor market regulations (e.g., affirmative action)					
3.	Education-Job matches (i.e., The complementarity between labour market and educational policies)					
F2. What do you comment about the Labor Market Conditions? 						

G. Please put your Suggestions for the following items

G1. Which important changes would you recommend for your higher education study program?

G2. What would you like to suggest for the working Industry/employers?

Thank you very much for your cooperation!

If you would like to receive the results of this project, put your e-mail address below:

Your e-mail address:.....

(Source: This Questionnaire is partially adapted from New Developments in graduate Tracer Studies an UNITRACE, 2010)

APPENDIX-B

Cross-tab of Frequency Distribution

Case Processing Summary						
Items	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Field * University	158	100.0%	0	0.0%	158	100.0%
CGPA * University	158	100.0%	0	0.0%	158	100.0%
Gender * University	158	100.0%	0	0.0%	158	100.0%
Age * University	158	100.0%	0	0.0%	158	100.0%
Mother's Education * University	158	100.0%	0	0.0%	158	100.0%
Father's Education * University	158	100.0%	0	0.0%	158	100.0%
Parental Income * University	158	100.0%	0	0.0%	158	100.0%
Interest * University	158	100.0%	0	0.0%	158	100.0%
Prior Education * University	158	100.0%	0	0.0%	158	100.0%

Items	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
The University itself (i.e., If it involves employers in different decision making processes and if it prepares events in order to invite employers to visit and hire graduates) * University	158	100.0%	0	0.0%	158	100.0%
University –Industry linkage Office in the Institute of Technology (IoT) (i.e., If it placed graduates in Internship by considering their prospects and future careers)* University	158	100.0%	0	0.0%	158	100.0%
Alumni Office/Career Guidance and Counseling Services /Career Advising Office (i.e., If it provides advice and trainings on the job searching process and career opportunities of prospective graduates) * University	158	100.0%	0	0.0%	158	100.0%
Your Department or the Academic Staff (i.e., If efforts were made by your teachers in recommending you for an appropriate job and if it gives an entrepreneur trainings) * University	158	100.0%	0	0.0%	158	100.0%
Student Council (i.e., If it prepared different events like job fairs, role model presentations etc. in order to promote your fields of study) * University	158	100.0%	0	0.0%	158	100.0%
The facilities in the university (i.e., libraries, laboratories, workshops, etc.)* University	158	100.0%	0	0.0%	158	100.0%
Information and Communication Technology * University	158	100.0%	0	0.0%	158	100.0%
Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project works, etc.) * University	158	100.0%	0	0.0%	158	100.0%
Peer-learning (Contacts with fellow students) * University	158	100.0%	0	0.0%	158	100.0%
Engagement with Field-based conferences, seminars, forums, workshops etc. * University	158	100.0%	0	0.0%	158	100.0%

Items	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and soio-economic realities of the nation) * University	158	100.0%	0	0.0%	158	100.0%
Contents of the Courses of the study (i.e., If the <i>Multi-disciplinarity</i> is entertained in the courses to equip graduates with soft-skills and hard-skills from <i>diverse areas</i> . * University	158	100.0%	0	0.0%	158	100.0%
Methods of Delivery (i.e., Modern and active learning methods) * University	158	100.0%	0	0.0%	158	100.0%
Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods) * University	158	100.0%	0	0.0%	158	100.0%
The Instructional aides (Teaching Materials) (i.e., If there are appropriate teaching aids in order to facilitate the teaching learning processes so as to be effective)* University	158	100.0%	0	0.0%	158	100.0%
Continuous readings to update knowledge and capabilities (i.e., learning about oneself – one’s capabilities, confidence, life interests and career orientations (Development of Self-Efficacy and Meta-cognition) * University	158	100.0%	0	0.0%	158	100.0%
Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge) * University	158	100.0%	0	0.0%	158	100.0%
Studying in a range of situations (time, place) * University	158	100.0%	0	0.0%	158	100.0%
Studying in an interactive environment with peers and teachers * University	158	100.0%	0	0.0%	158	100.0%
Use of new technologies and communication media for active and interactive learning * University	158	100.0%	0	0.0%	158	100.0%

Items	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Mastery of your own field of study or discipline * University	158	100.0%	0	0.0%	158	100.0%
Competencies on Multidisciplinary knowledge * University	158	100.0%	0	0.0%	158	100.0%
Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)* University	158	100.0%	0	0.0%	158	100.0%
Teamwork skills (i.e., Coordinating activities and Managing tasks/ Negotiating skills) * University	158	100.0%	0	0.0%	158	100.0%
IT skills (Computer skills) * University	158	100.0%	0	0.0%	158	100.0%
Research Skills * University	158	100.0%	0	0.0%	158	100.0%
Time management skills * University	158	100.0%	0	0.0%	158	100.0%
Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness) * University	158	100.0%	0	0.0%	158	100.0%
Critical Thinking Skills * University	158	100.0%	0	0.0%	158	100.0%
Creative Thinking and Visioning Skills * University	158	100.0%	0	0.0%	158	100.0%
Advertisements in News paper & Notice Boards * University	158	100.0%	0	0.0%	158	100.0%
Internet * University	158	100.0%	0	0.0%	158	100.0%
Approached by employer * University	158	100.0%	0	0.0%	158	100.0%
Family relationships * University	158	100.0%	0	0.0%	158	100.0%
Friends or acquaintances * University	158	100.0%	0	0.0%	158	100.0%
Help of higher education institution * University	158	100.0%	0	0.0%	158	100.0%
The macroeconomic condition (i.e., The number of new jobs created by economic expansion/large quantity of jobs in the labor market) * University	158	100.0%	0	0.0%	158	100.0%
Civil-service employment requirement policies and labor market regulations (e.g., affirmative action) * University	158	100.0%	0	0.0%	158	100.0%
Education-Job matches (i.e., The complementarity between labour market and educational policies) * University	158	100.0%	0	0.0%	158	100.0%
Length of job search * University	158	100.0%	0	0.0%	158	100.0%

APPENDIX-C

Frequency Counts

Variable	Sub Variable	University		Total
		AAU-AAiT	BDU-BiT	
Field	Electrical	17	23	40
	Mechanical	18	12	30
	civil	23	37	60
	Chemical	12	16	28
CGPA	2.00-2.74	5	6	11
	2.75-3.24	2	13	15
	3.25-3.74	49	46	95
	3.75-4.00	14	23	37
Gender	Female	12	19	31
	Male	58	69	127
Age	22	2	0	2
	23	21	27	48
	24	33	36	69
	25	3	10	13
	26	9	12	21
	27	0	1	1
	28	0	1	1
	32	2	1	3
Mother's Education	BA/BSC	7	5	12
	MA/MSC	3	3	6
	PhD	2	6	8
	Others	58	74	132
Father's Education	BA/BSC	18	9	27
	MA/MSC	2	5	7
	PhD	10	14	24
	Others	40	60	100
Parental Income	<5,000	48	63	111
	5001-10,000	11	15	26
	>10,000	11	10	21
Interest	No	7	12	19
	Yes	63	76	139
Prior Education	Very Low	0	1	1
	Low	1	0	1
	Moderate	11	16	27
	High	26	24	50
	Very High	32	47	79
Length of Job Search	19	15	34	19
	31	51	82	31
	20	22	42	20

Variable		1 Very Low	2 Low	3 Moderate	4 High	5 Very High	Total
The University itself (i.e., If it involves employers in different decision making processes and if it prepares events in order to invite employers to visit and hire graduates)	AAU-AAiT	29	14	17	5	5	70
	BDU-BiT	38	19	21	7	3	88
University –Industry linkage Office in the Institute of Technology (IoT) (i.e., If it placed graduates in Internship by considering their prospects and future careers)	AAU-AAiT	10	18	30	8	4	70
	BDU-BiT	2	32	33	13	8	88
Alumni Office/Career Guidance and Counseling Services /Career Advising Office (i.e., If it provides advice and trainings on the job searching process and career opportunities of prospective graduates)	AAU-AAiT	48	12	7	2	1	70
	BDU-BiT	53	12	21	0	2	88
Your Department or the Academic Staff (i.e., If efforts were made by your teachers in recommending you for an appropriate job and if it gives an entrepreneur trainings)	AAU-AAiT	13	22	20	12	3	70
	BDU-BiT	12	21	39	9	7	88
Student Council (i.e., If it prepared different events like job fairs, role model presentations etc. in order to promote your fields of study)	AAU-AAiT	34	7	14	7	8	70
	BDU-BiT	38	16	30	3	1	88
The facilities in the university (i.e., libraries, laboratories, workshops, etc.)	AAU-AAiT	2	13	32	16	7	70
	BDU-BiT	1	10	44	24	9	88
Information and Communication Technology	AAU-AAiT	3	29	17	20	1	70
	BDU-BiT	3	25	39	20	1	88
Off-Class contacts with Instructors (i.e., Tutorials, Mentoring services, project works, etc.)	AAU-AAiT	14	29	13	12	2	70
	BDU-BiT	14	37	21	11	5	88
Peer-learning (Contacts with fellow students)	AAU-AAiT	8	3	22	32	5	70
	BDU-BiT	7	7	24	42	8	88
Engagement with Field-based conferences, seminars, forums, workshops etc.	AAU-AAiT	14	34	14	8	0	70
	BDU-BiT	20	48	17	2	1	88

Variable		1 Very Low	2 Low	3 Moderate	4 High	5 Very High	Total
Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and soio-economic realities of the nation) Contents of the Courses of the study (i.e., If the <i>Multi-disciplinarity</i> is entertained in the courses to equip graduates with soft-skills and hard-skills from <i>diverse areas</i> .)	AAU-AAiT	6	7	18	28	11	70
	BDU-BiT	4	4	21	41	18	88
Methods of Delivery (i.e., Modern and active learning methods) Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods)	AAU-AAiT	7	8	15	27	13	70
	BDU-BiT	1	5	21	43	18	88
The Instructional aides (Teaching Materials) (i.e., If there are appropriate teaching aids in order to facilitate the teaching learning processes so as to be effective) Objectives of Courses/Learning out comes (i.e., If educational objectives are designed based on the national goals and soio-economic realities of the nation)	AAU-AAiT	9	5	22	27	7	70
	BDU-BiT	2	12	30	39	5	88
Contents of the Courses of the study (i.e., If the <i>Multi-disciplinarity</i> is entertained in the courses to equip graduates with soft-skills and hard-skills from <i>diverse areas</i> .) Methods of Delivery (i.e., Modern and active learning methods)	AAU-AAiT	7	15	17	22	9	70
	BDU-BiT	0	11	29	32	16	88
Modes of Evaluation/Assessment Techniques (i.e., use of the varieties of evaluation methods)	AAU-AAiT	4	11	25	21	9	70
	BDU-BiT	4	11	49	19	5	88

Variable		1 Very Low	2 Low	3 Moderate	4 High	5 Very High	Total
Continuous readings to update knowledge and capabilities (i.e., learning about oneself – one's capabilities, confidence, life interests and career orientations (Development of Self-Efficacy and Meta-cognition)	AAU-AAiT		3	13	23	31	70
	BDU-BiT		1	17	49	21	88
Exposure for experiential learning (i.e., Emphasizing on learning from issues work-related as well as subject-related knowledge)	AAU-AAiT	1	3	13	33	20	70
	BDU-BiT	2	4	33	36	13	88
Studying in a range of situations (time, place)	AAU-AAiT		3	24	30	13	70
	BDU-BiT		5	29	38	16	88
Studying in an interactive environment with peers and teachers	AAU-AAiT	2	11	18	22	17	70
	BDU-BiT	3	9	30	26	20	88
Use of new technologies and communication media for active and interactive learning	AAU-AAiT	1	12	20	24	13	70
	BDU-BiT	9	14	28	31	6	88
Mastery of your own field of study or discipline	AAU-AAiT		0	11	41	18	70
	BDU-BiT		3	20	45	20	88
Compitencies on Multidisiplinary knowledge	AAU-AAiT		3	24	25	18	70
	BDU-BiT		9	22	31	26	88
Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)	BDU-BiT		5	12	39	14	70
	AAU-AAiT		5	28	31	24	88
Teamwork skills (i.e., Coordinating activities and Managning tasks/ Negotiating skills)	BDU-BiT	2	2	12	30	24	70
	AAU-AAiT	0	13	24	27	24	88
IT skills (Computer skills)	BDU-BiT		3	26	30	11	70
	AAU-AAiT		5	41	29	13	88
Research Skills	BDU-BiT	8	24	19	15	4	70
	AAU-AAiT	19	38	22	5	4	88
Time management skills	BDU-BiT	6	12	23	22	7	70
	AAU-AAiT	11	21	24	20	12	88
Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness)	BDU-BiT		6	16	35	13	70
	AAU-AAiT		7	22	42	17	88
Critical Thinking Skills	BDU-BiT		6	8	43	13	70
	AAU-AAiT		6	29	38	15	88
Creative Thinking and Visioning Skills	BDU-BiT		6	18	35	11	70
	AAU-AAiT		10	26	35	17	88

Variable		1 Very Low	2 Low	3 Moderate	4 High	5 Very High	Total
Advertisements in News paper & Notice Boards	BDU-BiT	9	3	16	25	17	70
	AAU-AAiT	6	9	9	27	37	88
Internet	BDU-BiT	21	6	14	16	13	70
	AAU-AAiT	11	4	10	43	20	88
Approached by employer	BDU-BiT	16	6	15	26	7	70
	AAU-AAiT	22	5	22	31	8	88
Family relationships	BDU-BiT	44	15	4	5	2	70
	AAU-AAiT	65	15	3	4	1	88
Friends or acquaintances	BDU-BiT	18	24	16	9	3	70
	AAU-AAiT	33	32	15	6	2	88
Help of higher education institution	BDU-BiT	23	36	5	2	4	70
	AAU-AAiT	40	34	6	2	6	88
The macroeconomic condition (i.e., The number of new jobs created by economic expansion/large quantity of jobs in the labor market)	BDU-BiT	7	6	24	23	10	70
	AAU-AAiT	8	7	26	40	7	88
Civil-service employment requirement policies and labor market regulations (e.g., affirmative action)	BDU-BiT	5	8	25	25	7	70
	AAU-AAiT	6	9	26	35	12	88
Education-Job matches (i.e., The complementarity between labour market and educational policies)	BDU-BiT	12	5	16	19	18	70
	AAU-AAiT	7	4	27	35	15	88

APPENDIX: D
SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATIONAL AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE EDUCATION AND POLICY STUDIES
PHD PROGRAM IN INTERNATIONAL AND COMPARATIVE EDUCATION

Interview Protocol

Interviewee_____

Date_____

Venue/place of interview_____

Start Time_____ End Time_____

Script:

I am Jerusalem Yibeltal. Currently, I am conducting a doctoral dissertation titled “Higher Education and Labor Market in Ethiopia: A Tracer Study of Graduate Employment in Engineering from Addis Ababa and Bahir Dar Universities”. The main purpose of this study is to examine the influential factors of employment and work opportunities of engineering graduates in Ethiopia. I hope to use the results to suggest higher education policies and employment strategies. Thus, the research requires abroad perspective of thoughts and feelings about graduate employment and related matters.

I appreciate your willingness to speak to me. This will be an interview. I have a list of questions and any information that you feel is important. I want to assure you of absolute anonymity. The data will be compiled in a process of analytic induction and no individual will be identified with their particular point of view. If you feel uncomfortable at any time, time, please let me know and we will stop the interview.

To help me analyze the data from my interviews, I would like to tape record this interview so that I may analyze the transcripts at a later time. Again, your name would not be attached to the

tape. I will be using a coding system to identify participants to further reduce the possibility of any loss of anonymity. If at any time you wish to stop the tape or delete part of it, I will be complying. Do I have your permission to record this interview?

1. In your experience, how do you recruit graduates? What are the major criteria used by you, as an employer, to recruit graduates? Did you consider age, gender and other socio-economic factors to recruit employees?
2. Which University graduates do you prefer to employ in your organization? AAU-AAiT or BDU-BiT?
3. Did you have any roles in the HEIs? What types of roles do you play to the graduates employment and employability? Have you ever participated in the decision making processes? How?
4. Have you ever involved in the graduate recruitment process? How?
5. What types of skills and competencies are you looking for? What types of skills are preferable from the following competencies?
 - mastery of your own field of study or discipline,
 - competencies on multidisciplinary knowledge,
 - ability to rapidly acquire new knowledge, teamwork skills (i.e., coordinating activities and managing tasks/ negotiating skills),
 - IT skills (computer skills), research skills, time management skills,
 - interpersonal and communication skills and emotional intelligence,
 - critical thinking skills
 - creative thinking and visioning skills.
6. How can you prioritize the aforementioned skills and competencies based on your organization needs?
7. What types of skills and competencies are mostly lacking from the graduates? What do you want to recommend to the HEIs?
8. Is there any policy (e.g. Affirmative action, employment laws) that supports or challenges you to recruit graduates?
9. How do you post job vacancies?

- Advertisement in Notice boards & News papers
- Internet
- Approached by employer
- Family relationships
- friends or acquaintances
- Work placement during higher education
- Others

10. From your point of view, what would you suggest to HEIs to prepare graduates in order to respond to the demand of the current and competitive labor market?

11. What efforts should be made by the stake holders in order to promote employment and career opportunities of graduates and what specifically should be done by:

- University Presidents
- University-Industry Linkage office
- Teaching staff
- University Alumni office/Career service Office
- Students
- Employers
- Government
- Society etc.

12. Do you have any additional comments and suggestions about graduates' employment and labor market?

Thank You for Your Cooperation!

APPENDIX: E

**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE AND POLICY STUDIES Ph.D. PROGRAM IN
INTERNATIONAL AND COMPARATIVE EDUCATION
SEMI-STRUCTURED INTERVIEW GUIDE FOR TEACHERS**

Interview Protocol

Interviewee_____

Date _____

Venue/place of interview_____

Start Time____ End Time_____

1. Do you have follow-ups on the whereabouts of graduates?
2. From your experience, does your University conduct a tracer study about the employment of your alumni? How do you know if your graduates are absorbed by the current labor market or not?
3. How do you get feedback from your alumni and employers to improve your courses based on the demand of the current labor market?
4. What type of feedback did you collect from your alumni and employers?
5. Did you revise the HEIs Curriculum? How and why and when did it take place?
6. How do you keep up your curriculum current?
7. From your experience, is there any effort made by teachers to link graduates with current employers?
8. What would you suggest to the stakeholders to promote graduate employment?

Thank You!

APPENDIX: F

**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE AND POLICY STUDIES
PhD PROGRAM IN INTERNATIONAL AND COMPARATIVE EDUCATION**

An Outline for Qualitative Document Analysis

1. The extent of relevancy of the rationales of engineering curriculum to the Education and Training Policy and Strategy (1994); the Education Sector Development Program (1997-2017); the Industrial Development Strategy (2003); the Plan for Accelerated and Sustained Development to End Poverty (2006); and Growth and Transformation Plan (GTP I).
2. The match between Objectives of Courses/Learning outcomes of engineering curriculum to the national goals and socio-economic realities of the nation.
3. Integration of contents to the world of work to equip graduates with soft-skills and hard-skills from *diverse areas*;
4. The suggested delivery methods and characteristics as tested from aspects of modernity, practice-orientedness through long-range internships, emphasis for active learning methods and for proper use of Instructional aids.
5. Mechanisms set for continuous assessment and evaluation relevance to curriculum components.

APPENDIX-G

**SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES
CENTER FOR COMPARATIVE AND POLICY STUDIES
PhD PROGRAM IN INTERNATIONAL AND COMPARATIVE EDUCATION
Consent Letter**

Dear Graduates,

I am Jerusalem Yibeltal, a PhD Candidate in International and Comparative Education (ICE) at Addis Ababa University. Currently, I am conducting a Doctoral Dissertation titled “Higher Education and Labor Market in Ethiopia: A Tracer Study of Graduate Employment in Engineering from Addis Ababa and Bahir Dar Universities”.

You are being asked to participate in this research study because you are a graduate of Engineering from Addis Ababa University/Bahir Dar University in 2012. I obtained your name and contact address from the University Registrar - the University Alumni office. If you agree to be in this study, you will complete the questionnaire that asks about your educational experience and study conditions, the curriculum, study behavior, competencies, job searching methods, socio-cultural conditions, labour market conditions and your personal suggestions related with this subject.

While there will be no direct benefit to you for participating in this study, the anticipated benefit of this research is a better understanding of how graduate job search is determined by various factors in the Ethiopian Labor Market. I hope that the findings of this study will contribute to designing effective higher education policies and employment strategies in Ethiopia.

I would be very grateful if you would participate in this interesting study and strongly encourage you to take part. Completion of the survey is expected to take about maximum 30 minutes of your time. The questions are quite general (for example, to what extent did your college degree affect your subsequent employment/current work?). You may omit any question you prefer not to answer or you can ask me for further clarification. There are no known or anticipated risks to participate in this study. Participation in this study is voluntary and anonymous. Furthermore, all information you provide is considered completely confidential. Your name will not appear in any dissertation or report resulting from this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at 0911914884 or by email at jerusalemyib@gmail.com. You can also contact my supervisor, Professor Vinayagum Chinapah from Stockholm University via vinayagum.chinapah@edu.su.se or vinayagum.chinapah@interped.su.se. If you agree to participate, kindly let me know your willingness by replying to this email.

I very much look forward to hearing your positive reply - thank you in advance for your interest in this project.

Sincerely,

Jerusalem Y.